



# The Concept of Co-Treatment or Ecological Treatment in General Medicine

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### Abstract

Family Medicine/General Medicine should include therapeutic interventions in the sense of 'co-development and co-treatment': there are not isolated individuals, but in reference to others, in relation to others. As lichens which are formed by two components or two organisms living in symbiosis, on the one hand are the hyphae of the fungus that can not produce their food and on the other hand the cells of algae which give the food to fungus; so, fungus protects the alga, and because of that, the lichens can resist in environments where each alone could not. Survival is achieved not by competition but in collaboration with symbiosis. You can not treat cases of illness that people present considering them in isolation from each other and without consider the context to which they belong. We have to turn our attention to the circumstances of the home and to the consideration of man in his family, work and community context.

### Keywords

Family practice; Fables; Metaphors; Complexity; Community; Family; Variability; Ecology; Therapeutics; Therapy; Clinical protocols

## Introduction: The Nature of Life and the Ecological Framework

Recent scientific discoveries indicate that life - all kinds of life, from the most primitive cells to human societies, states, institutions and corporations, including the global economy - is organized on the basis of the same principle and pattern: connections, relationships, networks. The sustainability of life is a property of an ecological system rather than an organism or species or an individual patient. Traditional biology has tended to focus its attention on individual organisms (individual patients, individual diseases) rather than on the ecological continuum.

Life can not be ascribed to any molecular component (neither DNA nor RNA) but only to networks of metabolic relationships. There is a tendency to believe that the biological form is determined by the genetic basis, and that all information about the cellular process is passed from one generation to the next through DNA. But this is not so. When the cells reproduce, not only their genes are passed, but also their enzymes, organelles, etc. That is, the whole network of personal relationships. The new cell is not produced from DNA, but from the set of relational networks. Genes can only function when

they are embedded in a context of relationship networks.

The cellular structure is very far from a thermodynamic equilibrium, and it is precisely when it enters a state of equilibrium when the cell dies. This open system specifically includes the spontaneous emergence of new forms of order; this results in the development and evolution [1]. The use of appropriate optical mechanisms reveals the existence of a layer of hot and humid air that surrounds all living beings and that moves continuously around our bodies and over our heads. This layer, present in all organisms that live in the air, is the result of heat and water produced by our metabolism. So, each one of us carries his own atmosphere. This means that you can not define an environment or context of an organism - a person, a patient - in the absence of the organism that inhabits it; organisms create their own environment (and this creates the organism).

That is to say, health / disease (life) can not be defined from an environment different from the context of the individual -for example, life on Mars from an environment based on terrestrial environments; Terrestrial environments are the result of terrestrial organisms.

Family doctors do not treat illnesses but rather care for people in their contexts. And so, an important characteristic of family medicine is that you can not separate the individual from its context, or the physical from the psychic. It is the only medical specialty where this inevitable gap does not occur [2,3].

In this way, we will use the presentation of a fable, as a method to reflect on the concept of co-treatment in family medicine. The fable is an adult education method that can serve to intuitively understand abstract concepts by linking them to specific situations, for facilitating their assimilation. The fables belong inseparably to the objective and the subjective, the individual and its context, the physical and the psychic, the pathology and the experience of the disease, and thus serve to save those abysses [4,5].

## The Fable of the Alga and the Fungus

There was once lichen, which consisted of an alga and a fungus, and that, was living in arid areas, or over rocks or tree trunks, and he went to the consultation with family doctor.

He was the next patient ... The doctor read the medical record of Mr. Lichen before being passed to the query. It was an AIDS patient.

The doctor mentally recalled the precise assistance measures for the effective care of patients with AIDS...:

-”It may require, for example, prophylaxis of *Pneumocystis carinii* pneumonia, early use of antivirals in patients with low T4 counts, and vaccination against pneumococcal pneumonia ... But, effective care will also require understanding the culture of the sick, their location, resources, diversity, customs, support networks, sexual practices ... It would be accurate a collaborative communication between patients and health providers to achieve shared strategies ...”

And the doctor continued to reflecting: “... And in this patient his problems and environments will be changing ... And, it is precisely because of this fact, forces us to move from a model of care unilateral to another of mutual control, with diagnostic and therapeutic agreements between different medical disciplines and patients.”

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-”I understand why we are ‘family doctors’ (individuals, families and communities, which can not understand individually without each other). Now I see that among the practical implications of this model in the consultation, is the explanation of why it is not possible defining diagnoses accurately: because they are always moving”, the family doctor told himself, and called Mr. Lichen to pass to the query...

-But, still he was thinking: “There are no isolated individuals, but in reference to other (relative to others) as is noted by the parachutists and astronauts; they have not notice of drop speed but in relation to references. In an evolving system in which two or more actors interact, changes in A, cause changes to B, and these in turn changes again to A. The evolution of this system is preserving continuity of their relations with each other. So, the intervention unit is the individual plus his context; it is a co-treatment.”

## Discussion

A characteristic of ecological processes is their contingency. Any ecological consideration requires confronting the relationship between the system that constitutes our object of study and the circumstances in which it is registered, both internal and external. Including the life history of the different organisms forces us to study the interaction between the internal and the external. The technical term that designates the processes of continuous change during the life of an organism is “development”; literally unfolding. But development is not only the execution of an internal program, it is not an internal unfolding; the exterior also counts [6].

Even when the organisms present a few clearly differentiated stages, they do not necessarily follow each other according to a predetermined order, but, throughout their life, the organism can go through these stages again and again, in response to the action of external forces. The large climbing plants that grow in the heart of the jungle begin as a seed that germinates in the soil. In the first phase of growth, the vine is positively geotropic and negatively phototropic. That is, it delves into the ground and grows far from the light, towards the darkness of the earth. It later reaches the base of a tree, and becomes negatively geotropic and positively phototropic, like most plants, and ascends the trunk in search of light. During this phase they start to leave leaves that have a characteristic shape. As it ascends the tree, the shape of the leaves and the distance between them is modified, and the flowers make their appearance. A little higher, the vine wraps around the branches of the tree, the shape of its leaves changes again and becomes positively geotropic and negatively phototropic; from that moment, it hangs from the branches and begins to grow toward the ground. If it stumbles on a lower branch, an intermediate phase begins again, and when it reaches the ground it resumes its cycle from the beginning. So, depending on the intensity of the light and the height of the tree, the climbing plant undergoes several changes between the two stages.

In addition, the development of most organisms is the result of a unique interaction between their internal state and the external environment. The result of this contingency, which produces variations between individual organisms, can be illustrated very well with a classic experiment in botanical genetics. Clausen et al., In California in 1958 [6], collected several specimens of the Achillea plant and cut each of them into three parts. Then one of these parts was planted at low altitude (30 m above sea level), another at medium altitude (1,400 m) and the third in the mountains (3500 m). The result was that, overall, no forecast can be made when we move from

one environment to the next (Comparing the three plants -from the cuttings of the same plant, therefore with the same genes- of each altitude, the most high of the cultivated at low altitude presents the poorest growth level at medium altitude, and is not even able to flower. The second highest plant of the cultivated at high altitude presents a medium height at medium altitude, but is the second most small of those cultivated at low altitude). There is no “better” or “bigger” genetic type.

While it is true that there is an external context or world - whose existence is independent of any living being, the totality of that world must not be confused with the environment of an organism. The activity of the organisms constructs its context from the juxtaposition of fragments of the external world. Therefore, the information necessary to define an organism is not only contained in its genes, but also in its environment, in the same way the environmental problems of the organism are a consequence of its genes: The penguins, who spend a large part of their lives under water, have modified their wings to transform them into fins, etc. [6].

Since organisms create their own context, it can not be defined except in the presence of the organism that shelters. Thus, evolution must be understood as a coevolution of organisms and their respective environments in which all organic change is at once a cause and effect of environmental changes. The inner world and the outer world are therefore intimately related, and the organism is both a product and a stage of that interaction. The constructivist vision of the organism and environment has important consequences for medical care. The living organism responds to contextual influences with structural changes, which in turn will alter its future behaviour. The living organism is structurally coupled to its context. And this body-context coupled system is a system that learns: continuous structural changes in response to the context - and consequently continuous adaptations, learning and development; it is about the behaviour of an intelligent organism.

So, we must emphasize that there is no individual without context, or context without individual. One creates the other and vice versa, and they co-evolve. Intervening on the individual (without taking into account the context) is not possible (it can only be done unconsciously or uninformed ...); there are no individuals but individuals-contexts. And the other way around: intervening on the context (as if it were not co-dependent on the individual) is not possible. In addition, the contexts are local; the whole of the world is the juxtaposition of specific and distinct individuals-contexts (with variations between individuals-contexts) [6].

The evolution of that system is a co-evolution (or preservation of continuity) of its relationships with each one another. The consequence for the intervention or medical treatment is evident and crucial: the intervention unit is the individual plus its context. Speaking of “evolution” of a system is analogous to talking about “learning” of the system (of changing ideas or relationships). By extension, health is a certain connection or relationship matrix. The disease (in all cases, but especially when psychosocial factors predominate -for example, mental illness) is an alteration or dysfunction of the communication relationships between the actors and the contexts (human beings, perceptions, environments ...) [7].

When we believe that we intervene in isolated individuals, for example, by treating an organic disease in an individual - pain, etc.-, or dealing with drugs a mental disorder that we define as an alteration of cerebral neurotransmitters, we are never treating

only one individual, but that changes in that person (relief of pain, improvement of depression ...) have repercussions on relationships with other individuals and contexts and these changes reverberate again on the patient. It is common for a clinical problem to present itself - although it is not revealed initially - as a contextual imbalance, for example an imbalance or family or group crisis [8].

Consequently, in everyday clinical practice, cases are common in which the therapeutic intervention should be not performed only on the patient but on related actors [9], for example: intervening on the family for the treatment of obesity [10-12], in the treatment in Alzheimer's caregivers to act on the patient with dementia, or in the family of a patient with HIV to intervene on the index patient [13]. Of course, if we consider the disease from the biomedical paradigm where the disease affects individual bodies, treating someone other than the one with the disease is absurd, but individual health is an expression of the sick context. The healing takes place through the encounter of a person with other people (the healing is a "relational" concept, of adjustment or change of the matrix of relationships or connections), rather than through interventions in the body or mind of the individual isolated.

Thus, for example, family systemic theory emphasizes interaction and context; Individual behaviour is seen within the context in which it occurs. Function and dysfunction are defined in a relative manner according to the individual, family, social context, and psychological demands of the situation. The family situation can be dysfunctional under some circumstances, and adaptive in others. In family systemic theory, individuals are interrelated so that a change in a member affects other members of the family, and that affectation, in turn, affects the first family member in a circular way. Thus, causality is circular rather than linear. Changing the context of behaviour is often considered the best way to produce individual changes. In this sense, the family relationship process is more important than the content of the problem. Therefore, interaction is the Center of systemic biopsychosocial research. In physical illness, particularly in the chronic and life-threatening diseases, the primary focus is the system created by the interaction of a disease with an individual, family and biopsychosocial system [14].

This reminds us of the fact that when we work in health we need to always look at all the contexts of our subject, since there is no part of life that is irrelevant to the totality of being. From the family, the circle of human relationships extends to other levels in all states of life -except the extreme ages of youth and old age- for new connections. These levels are the world of individuals in the community: the neighbourhood, the city, the country and humanity in general. In addition, it is necessary to consider the individuals in the school, the factory, the informal group of partners, etc. (that is, in the free or obligatory relationships that occur between individuals) [15-22].

## Conclusion

The treatment in Family Medicine is ecological (relating the object to its space and context or specific environment). By knowing people in their contexts we are able to be more effective with our interventions that include treatment in the sense of 'co-development and co-treatment': no isolated individuals, but in reference to others, in relation to others. You can not treat the cases of illness in individuals if these are considering as in isolation from each other and without considering the context to which they belong. We have to turn our attention to the circumstances of the home and to the consideration of man in his family, work and community context

[23-25]. An effort is needed to understand, systematize and apply the ecological treatment in general medicine.

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