The "Health Supplying": Between Service and Complexity[†]

Oscar Tamburis[*]

University of Naples "Federico II", Department of Business Economics, Faculty of Economics, Via Cinthia, 80126, Naples, Italy

Abstract: The evolution of the organizational theories has brought to an overtaking of univocal rules of good organization, focused on the importance of setting fixed schemes and plans in theorizing and designing the company organizational framework. It's clear in fact that the surrounding environment can strongly influence the organization and its need to adopt particular working and coordination forms. By this way, the healthcare public utilities' interpretations and orientations point today on men's "well–being", meant as a positive interfacing between person and organization, as a reply to an old working culture, made of control and distrust rather than incentive and valorization. The need of a "systemic thought", to achieve a satisfying comprehension of the relational dynamics within an organizational context, is highlighted as well by the "complex methodology" approach: the fact that currently, concepts like customer satisfaction, assessment of perceived quality, user and client are spreading in the healthcare field, points out the deep changes in action in the perspective of healthcare operators, now called to see the patients not anymore as passive objects of the medical act, but as active subjects in a new relational dimension.

1. INTRODUCTION

In the current view, terms like biology, complexity, (science) and conscience stand as main points on which is based the – by definition – *imperfect market* of the healthcare system (Tamburis, 2008): while in fact for the other public services the relationship between users' needs and service resort is exclusively expression of users' choice, health services involve a *third actor*, that is the physician or, in general, the healthcare operator, from whom depends, in large part, the performance demand of the single customer.

This demand is moreover influenced by a particular process, driven by mass media, in which a generally not correct acquisition and elaboration of specific information from the users, that leads to a wrong increase of their expectations, implies anyway an increase of supply and an improvement of the research activity. This causes a further growth of the demand itself, essentially determined by the same system operators, as well as a further growth of the corresponding healthcare expenditure. The result is a general dissatisfaction for the clients, due to the impossibility for the suppliers to give a coherent answer to the enhanced demand volume (Levaggi, 2002).

Public healthcare organizations (HCOs) are very complex systems to manage, characterized by huge dimensions, elevated heterogeneity, burdened with a set of highly constraining laws and administrative rules, that actually slow down every process of change: this situation often sets aside the main *mission* of this kind of public utilities, that

consists in producing tangible healthcare results, evaluable as much as possible through the classic perspectives of efficiency, efficacy and cheapness.

Nonetheless, the pursuing of the so–called "*target Health*" remains the goal through which new ideas try to find their own way in the healthcare field, stimulating the research of high levels of organizational/performing/ perceived "quality" (difficult to reach, but often firstly difficult to outline): such research emerges among the new assets required from the Public Administration field, called to promote significant cultural involvements, especially concerning the effects on the behaviors of the actors involved.

Many steps forward in fact have been done to relieve the patient from the rigid relation of interdependence [1] with the physician, talking about him also as *user* or *client*, no more longer as passive object of the medical acting, but as proactive subject of the relationship, meant to play a remarkable role in the care/performance process that takes form around him.

2. FROM THE LEARNING ORGANIZATIONS TO THE CHALLENGE OF COMPLEXITY

The new organization of the Italian National Health System (N.H.S.), enacted through the **Legislative Decree n.502/1992** (and the following **L.D. n.517/1993**), introduced the public health utilities as companies provided with "organizational, administrative, financial, accounting, managerial and technical autonomy" [2], called to work according to measures of functionality, efficiency, efficacy and cheapness, in a free competition system with the other public and private facilities.

With this process of "firm–making" (Del Vecchio, 2001; Anessi Pessina and Cantù, 2002) the legislator had tried to realize an organizational framework capable to reply to the

*Address correspondence to this author at the University of Naples "Federico II", Department of Business Economics, Faculty of Economics, Via Cinthia, 80126, Naples, Italy; Tel: 333/3661293;

E-mail: elsewhere@libero.it

[†]Analysis from the relation presented in the Conference "*Patient: between the culture of well-being and the welfare institutionalizing*", held in S.Paolino Bibliotheque Institute, on May 8th, 2007.

demand of such measures, signing up a *technical management*, intended as a set of autonomous subjects provided with direction and management responsibilities (in terms of financial, instrumental and staff resources), correlation between targets and results, costs and performances, and able to improve the account management as instrument aimed to define the degree of achievement the corporate goals, in relation with the original targets and the available resources. The result was the setting up of the public health utilities as very particular companies, because of their restrictions for what concerns the organizational and statute autonomy.

On the other hand, this nature has made them such as interesting examples "in progress" for studies and analyses oriented to the definition of new organizational models: as in fact the need of organization in the modern medicine emerges by highlighting the discrepancy between the future prospects and the enduring of "weak connections" among the healthcare operators, the design and the introduction of new organizational forms (networks) recalls the adoption of sets of "non–hierarchic" organizational coordination, that can work only if supported by a level of organizational culture able to induce a general sense of participation, as well as the awareness for each actor of the role played within an increasingly complex system (Tamburis, 2009).

2.1 The Learning Organizations

Despite the high fragmentation of the theoretical field and the lack of a paradigmatic reference model, the definitions of learning organization, according to the sociologists of organizations, concern concepts like: freedom, creativity, knowledge, information and even collaboration [3]. By this point of view, in a HCO, people continuously try to expand their ability in achieving results they do long for, new ways of thinking are encouraged, collective inspiration is free, and people constantly learn how "to learn together" (Senge, 1992). Personal progresses for each member are made easier and the organization itself is constantly evolving.

A learning organization is a framework of actions, actors, symbols and processes that allow to change information in knowledge of value, so to increase its ability of adaptation on a long term. By this way, in the last years the HCOs are developing along logics of "*clinical governance*" [4], focusing on targets of continuous quality improvement of the supplying services and the maintenance of high assistance standards, in order to realize an organizational context wherein develop the excellence of the healthcare assistance [5] (Borgonovi, 2002; Della Morte, 2002; Bonamico, 2005).

2.2 The Complex Organizations

According to Arrow (1986), "the most obvious distinguishing characteristic of the organizational evolution [of the healthcare services], in the customers' perception, is that it is basically unpredictable".

It's in fact undeniable that the modern age express the overcoming of the determinism and the reductionism of the traditional scientific approach, calling into question the classically–intended organizational and managerial paradigm. The corporate image has moved from a balanced system – simple system in simple environment – to a system far from the equilibrium – complex system in complex environment, no longer connected to classical management models, but rather complex (De Toni and Comello, 2005).

The term "complexity" has become very common both in the ordinary and in the technical language. In particular, in the biomedical literature an increasing of publications focused on complexity in healthcare assistance, clinical medicine, public health, epidemiology and, at last, healthcare management was noticed, especially concerning the departmental organizational models, the new associative designs for General Practitioners, or the integrate approaches for day–hospital services, that emphasize the multidisciplinary interaction of different professional figures with specific know–how, in order to plan correct care paths for the patients (Casati, 1999).

By this way, according to Stacey (2000): "The essence of the world lies today in disarray and irregularity, not in simplicity and order […]. Chaos and self–organization theories represent a revolution for managers, giving them new explanations, based upon rational and scientific discoveries, about that casualness, total unpredictability and uncertainty are governed by deterministic laws […]. Systems framework itself generates the chaos that makes possible a perpetual creation".

Recognizing the HCO also as a complex services company (because it aims, by nature, to *learn* the complexity), it becomes then possible to recognize the grid of micro–processes integrating each other to build the global process of healthcare performance. Consequently, the whole health system should be redesigned under a new vision, based upon three founding elements:

- *Process approach*: focused on processes analysis and optimization;

- *Contingent approach*: adaptation of the organization to the outside environmental conditions;

- *Systemic vision*: HCOs as an open social–technical system, overtaking the unambiguous rules and strongly searching both inside and outside coherence.

An organizational framework should be defined within this vision, and attention should be paid on the requested activities to satisfy users' requirements along the value chain designing around them, in order to handle the questions concerning programming, administrating, controlling, managing and professional training (Martone, 2001).

3. COMPLEXITY AND RELATION WITH THE ENVIRONMENT

The path of organizational change planned from the legislator in the NHS led as first result to the creation of HCOs working such as "no–mind systems", and the effort still ongoing is aimed to change them in "multi–minded systems", in search of a true identity able to describe their nerve centre, that concerns, over the organizational side, the relation of *circular causality* [6] between doctor and patient, as shown in Fig. (**1**), that means much more than a mere "health supplying".

The "health supplying", since its designing around the concept of "Man", is called to produce values and significances for everyone to acquire through this constructive

circle, allowing the HCO to self–product, and then to self–organize: the HCO is so meant to build itself by creating circular relations among and with its single parts (Zanarini, 1996).
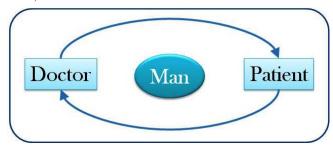

Fig. (1). The circular causality between Doctor and Patient.

This means that, moreover, is necessary to come through the Cartesian–inspired *reductionist* analytical thought, that played a deep influence on the modern scientific thought, suggesting a logic according to which the comprehension of the whole comes from the separated analysis of the parts, and the explanation of each event has to be searched in an increasingly small analytical level. In a "complex metho-dology" approach, not only the whole is greater than the sum of all the parts, but even recalls the need of a "systemic thought", in order "[…] *to a satisfying comprehension, to see through the chaos, handle the interdependences and understand the choices*" (Gharadedaghi, 1999) [7].

The importance for the organization to be in tune with the outside environment, closely recalls also the concept of *Hologram Principle*, according to which the system needs its environment and the environment needs the system in turn. In theory, this means that the part is in the whole and the whole in the part [8].

This principle practically highlights "*the way we recognize the outside reality* […] *and the natural forms existing in nature*". An important implication coming from it, is that the faculty of cognition consists in "allowing the agent to handle the environmental complexity" (according to the Santiago Theory of Cognition: "*we create the perception of reality through the representation we make of it*") (Maturana and Varela, 1980).

For the organizational studies, since company depends from its environment, takes from it the resources (inputs), and should give it outputs back for the satisfying of real needs. Introducing a third variable in this relation of conti-nuous interdependence, and that is *time*, the organizational model would become dynamic, and more appropriate to pursuit a greater flexibility.

In a dynamic model the organization – and so its inside context – follows the variations of the outside context during time. The change of context (and needs), shall be followed by a change of the organization, that sets new working rules, bringing back "coherence" between inside organization, and outside environment characteristics (Serpelloni *et al.*, 2004).

More in general, moving within a "complex" context (especially meant as "problematic", too) requires to the healthcare operator a great effort in terms of comprehension and analysis of the ongoing changes; requires a creative capacity of interpretation and planning – even if forced in a

context of information asymmetry – that acknowledge the man–patient as a *human being* (that is, his being not *one*, but rather *unique*, and so not replicable), and look at society not as much as an aggregate of parts, but rather as on organism of relations.

4. READING THE COMPLEXITY. READING THE "WELL–BEING"

The working ability of any system is strictly linked to its context, its net of relations, and the connections it is made of, more than its single components.

Any relation involves solidarity, participation, qualitative enhancement before than quantitative, in agreement with the principles of *circular causality*, *self-organization* [9], and *power of connections* [10].

Moving in such direction, becomes so possible to pursue a state of common *well–being* [11] that, in a "corporate" perspective, can be intended as a "*being good, tasting things, seize the emotion, dancing the life, playing the work*" (Negro and Grandis, 2003).

The well–being, in a complex context, can be a positive interface between the person and the organization, where the man–doctor, together with the man–patient, can get the chance to create a network (although weak, in some cases) of interpersonal relationships, mostly based on the *listening*.

To be capable of listening is in fact the most relevant ability, as for weaving relations and make own "customers" and collaborators grow professionally, as for realizing efficacious surveys of people satisfaction, in order to implement valid instruments for evaluating the "organiza-tional/performing/perceived quality" for the disease managing.

Assessing the patient perceived quality, questioning about his satisfaction about the care supplying, means valorizing the subjectiveness of the patient, founding a circular self–feeding relation in which the physician offers his know–how, not to impose it, but rather to find with the patient the best way to cope.

The patient himself, not anymore a clinical object, regains his own identity in the care path designed around his pathology: this is the moment on which bases every service activity, where the customer gives actively his contribute to its good realization.

More in general, in speaking about assessment and quality in the services field, many remark the difficulties to find significant indicators, pointing out the consequent recourse to strictly qualitative (and inappropriate) measures; many others argue about the difficulty in rendering through numbers the framework of relationships, and think that a too much objective perspective may prevent from gathering the deep ethical implications concerning the service relations, and in particular the help relations (Bruni and Smerilli, 2004).

Planning evaluation steps requires to break up and detect the milestones in the work structure of each healthcare operator; questioning about how the cares are delivered, identifying the most critical moments, focusing attention on possible process indicators, can enhance the comprehension

of phenomena in which each operator is involved and that contributes to realize.

The assessment of patients' satisfaction (such as index of well–being) becomes so a way that allows to "capture" the complexity characterizing the clinical encounter, a way through which medicine rediscovers and welcomes that centrality of the patient that shouldn't ever be forgotten.

Despite the disease, every man remains worthy of respect.

5. CONCLUSIONS

Currently is more and more spreading a new way of thinking according to which is rationally valid only what is, directly or not, testable and computable. The consequence is that the human subject remains rationally cognizable only because he can be "measured", seemingly reduced to the sole biological sphere, through forms of experimental investigation.

However, some among the most important innovations for the contemporary biologic sciences origin from the contribute of enlightened personalities, such as Pierre Teilhard de Chardin [12] that, focusing great part of his researches on the evolution dynamics – meant as story about the matter, the life and the man – has "gifted" a new dignity to biologic science, such as science of the *infinitely complex* [13] (Galleni, 2002).

In a Complex approach, in fact, the observer becomes integral and indissoluble part of the experiment; the same approach contemplates the unification of seemingly nonconforming concepts, and teaches to be able to listen, changing the initial alternation "the one *or* the other" into the realization of "the one *and* the other": doctor and patient, Man opposite to Man [14]. Every single perpetual movement of self–organization (Fig. **1**), emphasized through the circular causality of value creation and sharing, has to integrate in a wider vision, that think of numerous connections and lead toward a joined circle, where still once the whole becomes greater than the sum of all the parts (Fig. **2**).
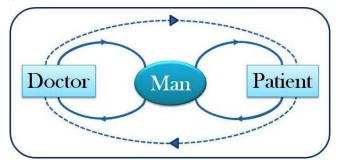

Fig. (2). In a new triadic relation the whole experiment becomes greater than the sum of all the parts.

A triadic relation, introduced in turn in an increasingly branching circle of relations, becomes a virtuous circle but also, at the same time, a fragile web in which even the littlest perturbation, like a butterfly effect, can get the system far from the equilibrium.

This is the reason why, ultimately, in the organizational studies, in particular regarding the healthcare field, it is not always realistic talking simplistically about user or client, introducing the well–known equation: *patient = client*.

If the importance of promoting the patient to active subject in his relation with the physician is no longer highlighted, this postulate risks to remain an unapplied theory, as well as to compromise the mentioned equilibrium, influencing the network of relationships and preventing from the realization of an authentic dialogue of negotiation. On the basis of this assumption, the actors of the healthcare system are preparing to cope the challenges coming in the next future, conscious that this is going to be the only way the HCOs can provide his members with the most appropriate instruments to enhance their abilities for mapping, encoding and spreading the complexity of the health supplying.

APPENDIXES

[1]   In the clinical context it is possible to determine as many processes as many patients. In the diagnosis phase, then, the doctor tries to apply his know–how so to "match" the patient requirements with the whole set of available solutions: the single doctors (or the single operating units) are often called to cooperate – each other as well as with the patient – in contingent situations, giving so origin to particularly intense relations of interdependence (Cicchetti, 2004).

[2]   Art. 3, par. 1.

[3]   For example in Senge (1992), the learning organization is "a place where people constantly expand their ability in achieving results they do long for, where new thoughts are encouraged, where collective inspiration is free, and where people constantly learn 'to learn together' ". In accordance with Nonaka (1995), the organizations that create knowledge are places where "the invention of new knowledge is not a specialized activity, but rather a way of behaving and being, where everyone is a knowledge craftsman". For R.S. Snell (2002), a learning organization "expresses a normative commitment and is able to acquire it. It's not a vision to which leaning toward, but an obtainable status".

[4]   The expression "*clinical governance*", that took place after the spreading of the concept of firm–making, introduced in the Italian NHS thanks to Legislative Decrees 502/1992, 517/1993 and following, represents "*the attempt of finding an integrate approach to the problem of assistance quality, recognizing that this may concern not only the intervening on the single clinical decisions, pointing them toward a better pertinence, but even making the assistance systems as a whole oriented to this same target*".

[5]   In particular, the process of "firm–making" started in the Nineties of the XX century in the Italian NHS influenced only in part some professional categories: among these there were the General Practitioners (GPs). As a consequence, HCOs and physicians ran the risk to perceive each other such as separate identities, since the GPs had the opportunity to differ

their vocational role (from professional man, to contract caregivers, to costs dealers); in add, the lack of structured organizational models made possible a relevant involvement of trade–union organizations and scientific associations, that led to an increasing degree of complexity in the processes of professional governance. The result was, in the last years, of different trends of healthcare politics following one another and translated, within the Regional Healthcare Systems, in different reinterpretations of GPs' tasks, in particular: "medical officer" (that works in terms of science and conscience); "*gate–keeper*" (responsible for the access to the II level healthcare performances); "performances delivering" (responsible for the healthcare territorial supplying); "supplementing of primary cares" (responsible of the handling of chronic diseases) (Del Missier and Tedeschi, 2007). Such process can be also read in the light of the concept of *unlearning organization* (Hamel and Prahalad, 1994), to be intended as an organization that learns by forgetting the previous models and searching of new ones through an intentional process of discarding the obsolete and misleading knowledge.

[6]   Set against the principle of "deterministic causality" because, if the cause brings to an effect, this one, "in turn, gives a feedback in a loop of self–feeding relation" (De Toni and Comello, 2005).

[7]   The influence of the systemic thought on the organizational learning is related to its capacity to give reference patterns to gather the interrelations instead of the things, to see the change dynamics rather than static "snapshots" (Senge, 1992). The overtaking of the European reductionism reveals especially in the overtaking of the assumption "simple answers to complex issues" (Bernardi and Muffatto, 1992), and leads to a deeper compre-hension of the concept of *integration*, characterized by numerous meanings: the best known one recalls the idea of "combining things together in the appro-priate way", while the most ancient one is linked to the Latin root *tangere*, to be here intended as "to touch from the inside", that is also "to see things from the inside" (Santoro, 1993).

[8]   An example is represented by stem cells, present in the whole (human body) and owners of all the information about it.

[9]   Principle related to "not centrally controlled pheno-mena", situation "non overstepping neither the field of causality, nor the field of stability, but located between them", from which comes from the utility of searching, as much as possible, a dynamic connection between cooperation and competition.

[10]   As Kauffman (1995) showed with the *Boolean network* theory, the number of connections belonging to a system determines its state.

[11]   Mentioning J. Maritain (Allard, 1985), the common well–being is the sum of anything exists concerning "civic consciousness and political virtues, sense of right and freedom, tangible prosperity and richness of

spirit, moral rectitude, sense of right and wrong, sense of virtue and heroism, as much in the individual lives as in the communities: and it is so, in order to be communicable and flowing to everyone, helping to realize the completeness of everyone's being".

[12]   "[…] About the general matter that there is an evolution, all the researchers, we said, now agree. But about the question of understanding if such evolution be oriented, it's different. Ask today to a biologist if he admits that the Life, through its transformations, head to somewhere: nine times on ten, he'll answer "No" – and he'll highlight it with heat. […] The Evolution would be, in the rear, nothing else but a continuous enhancement of this "psychic" or "radial" Energy in the course of the Duration, under the mechanical or "tangential" Energy, practically constant in comparison to the scale of our observations. What is after all, I said, the particular function that links experimentally each other, in their respective developments, these two Energies of the world, radial and tangential? Obviously, the organization: the organization, whose subsequent progresses come interiorly, as we can state, with a continuous increasing and deepening of consciousness […]" [extract from: De Chardin (1955), The human phenomenon, Queriniana, Brescia 2001, pp. 133-137].

[13]   As well as to the evolutionary walk, meant as a *moving toward* the complexity and the consciousness.

[14]   According to Physics Nobel Prize Niels Bohr, "there are two kind of truths. The superficial truths, whose opposite is clearly wrong, and the deep truths, whose opposite is equally true".

REFERENCES

Allard, J. L. (1985). *Jacques Maritain, philosophe dans la cité*. Ottawa: Éditions de l'Université.

Anessi, Pessina E., & Cantù E. (2002). *The Healthcare "firm–making" in Italy*. Oasis Report: Egea.

Arrow, K. J. (1986). *The limits of the organization*. Il Saggiatore (Ed.), Milano.

Bernardi, G., & Muffatto M. (1992). The organizational culture in the changing processes. In R. Filippini, G. Pagliarani & G. Petroni (Eds.), *Designing and managing the innovative enterprise. The new paths to face the complexity of the Nineties*. Etas: Milano.

Bonamico, M. (2005). Healthcare training innovative instruments. *Monitor, 14*, 24-31.

Borgonovi, E. (2002). "Firm–*mak*ing" and clinical governance. *Mecosan, 49*, 2-5.

Bruni, L., & Smerilli A. (2004). *Interests, reciprocity and economy: an evolutive model*. Città Nuova: Roma.

Casati, G. (Ed.). (1999). *The patient care path*. Egea: Milano.

Cicchetti, A. (2004). *The organizational design*. Franco Angeli: Sanità.

De Chardin, T. (1955). *The human phenomenon*. Queriniana: Brescia, 2001.

Del Missier, S., & Tedeschi, P. (2007). The organizational improvement of the territorial healthcare assistance: evolutions in progress and ideas in the Primary Care Groups from Lombardia. *Mecosan, 61*, 83-108.

Della, M. G. (2002). *The learning organizations and the learning of the organization: Issues from courses of Sociology of organization and Economic sociology,* University La Sapienza: Roma.

Del, V. M. (2001). Evolution of the organizational logics inside the Public Health facilities. *Mecosan, 33*, 9-28.

De Toni, A. F., Comello, L. (2005). *Preys or spiders. Men and organizations within the web of complexity*. UTET: Torino.

Galleni, L. (2002). Teilhard de Chardin, Pierre. *Interdisciplinary Dictionary of Science and Faith* (pp. 2111-2124). Urbaniana University Press: Città Nuova, Roma.

Gharajedaghi, J. (1999). *Systems Thinking: managing chaos and complexity*. Butterworth–Heinemann: Boston.

Hamel, G., & Prahalad, C. K. (1994). *Competing for the future*. Boston: Harvard Business School Press.

Kauffman, S. (1995). *At home in the universe. The search for the laws of self-organizion and complexity*. Oxford University Press.

Levaggi, R. (2002). Information Asymmetry in the Healthcare performances market: the problem of the cream skimming. *Tendenze Nuove, 2*, 221-238.

Martone, R. (Ed.). (2001). *The managerial training in the healthcare field: institutional obligation or strategic choice?* Giappichelli: Torino.

Maturana, H. R., & Varela, F. J. (Eds.). (1980). *Autopoiesis and cognition: the realization of the living* (Vol. 42). Boston: D. Reidel Publishing.

Negro, G., & Grandis, R. (2003). *The welfare organization: logics, principles and application methods*, from http://www.cantieripa.it

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: how Japanese companies create the dynamics of innovation*. Oxford University Press: New York.

Santoro, G. M. (1993). *The butterfly and the hurricane. Communication, organization, consensus.* Guerini & Associati: Milano.

Senge, P. (1992). *The fifth discipline*. New York: Doublebay.

Serpelloni, G., Simeoni, E., & Aldegheri, F. (2004). Team working, organizational behavior and multidisciplinarity. *Quality Management in the dependences*. McGraw-Hill.

Snell, R. S. (2002). The Learning Organization, sense giving and career Contracts: a Hong Kong Case. *Organization Studies, 23*(4), 549-569.

Stacey, R. D. (2000). *Strategic management & organizational dynamics: the challenge of complexity*. Financial Times: Prentice Hall.

Tamburis, O. (2008). Analysis and selection of management technologies in the healthcare organizations. The Balanced Scorecard (BSC) approach in the image diagnostics service. *International Journal of Environment and Health, 2* (2), 131-146.

Tamburis, O. (2009). *The role and the influence of ICT in the patient Care Path improvement*. Ph.D. Thesis, Department of Preventive Medical Science, University of Naples Federico II: Italy.

Zanarini, G. (1996). *Complexity as the way to think the world*. In SISSA, *Caos and complexity*. CUEN, Napoli.