

Parental Decision-Making For A Medical Treatment Of Children With Isolated Non-Syndromic Craniosynostosis

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In the case of craniosynostosis, which is a premature ossification of at least one cranial suture, deformities of the skull occur due to compensatory growth. It is assumed that the overall incidence of all forms of craniosynostosis is between 1:2000 and 1:2500 (Marchac and Renier 1989) and that almost all children affected by such head deformities are being operated. However, most children with isolated, non-syndromic craniosynostosis, which are the most common and whose cause has not yet been clarified so far, would not necessarily have to be operated from a medical point of view. Affected children could therefore also lead a life with their deformities without having any functional degradations, such as mental impairments. Despite this opportunity of knowledge, almost all parents decide for medical treatment (=operation of their children), which aims at a normalization of the skull shape and which is associated with certain risks and consequences – including severe disabilities and deaths in very rare cases.

Arguing with the theory of normalism by Jürgen Link, under which he understands a specifically modern construct of Western societies, protonormalistic and flexibilistic tendencies are likely to flow into parental conceptions of norms (see Link 2013). Protonormalism is mainly based on normativity, which means that standards are defined in advance. Limits of normality, which can also be regarded as limits of stigmata, are extremely tight, stable and valid for a long time. In addition, a binary scheme becomes apparent: either an individual is normal or not. Finally, in order to remain within the field of normality, individuals are normalized in an authoritarian sense. By contrast, the flexible normalism is characterized in particular by a maximum expansion and dynamization of the normality zone which leads automatically to flexible transitions. On the basis of data, a range of normality is specified which often appears in form of a bell curve. In this respect, characteristics or behaviors are considered as normal which occur the most frequently. As the field of normality can shift within a very short time due to changing data, individuals can drift imperceptibly into the abnormal range, which leads to a so-called “anxiety of denormalization” (=anxiety of not being normal). Finally, everybody can readjust easily his or her behaviour, if necessary.

In my talk, I will argue against his theory in terms of maintaining that only protonormalism plays a crucial role in parental decision-making. Here are some examples:

(1) Little children are not able to normalize themselves. Decisions about medical measures are taken by their guardians. (2) A binary scheme becomes apparent but not gradual steps: either the child has a synostosis and thus an abnormal and unusual headform or not. (3) Quick and easy switching between normal and abnormal areas is difficult to achieve due to biological factors. My talk is structured as follows: After a brief medical introduction and the explanation of the theory of normalism by Link, my criticism will be explained in detail.

Literature:

- Jürgen Link (2013): Versuch über den Normalismus. Wie Normalität produziert wird. Göttingen: Vandenhoeck & Ruprecht.

The Resilience Of Brazilian Tax System

Natália Brasil Dib

Overcoming epistemological reductionism of the modern rationality (characterized by the Newtonian-Cartesian paradigm) and the emergence of complexity - particularly from Chaos Theory, the thermodynamics of far from equilibrium systems and complex adaptive systems – has raised new possibilities for nomothetic and idiographic branches of science – bringing more closely these two sides of scientific inquiry, held apart by the Newtonian-Cartesian rationality. This new point of view, however, was not exclusive of the hard sciences. It spread to the social arena, bringing new ways to see and analyze various social events, as complex phenomena. This paradigm shift has reached, with great delay, the so called applied social sciences, law in particular, bringing new tools of analyze and theoretical possibilities to discuss well know social, economic and legal issues. From this framework, this paper analyzes resilience, as one of the characteristics of Complex Adaptive Systems and inquires in which extent that attribute can be recognize and described in the legal system - seen as a complex system - specifically in the legal norms of the tax system. The aim, at first, is identify the main definitions and characteristics of resilience in specialized literature. From then applies these concepts to Brazilian Tax System to seek a correlation of these characteristics with those found in tax system. A system designed not only from the Constitution of 1988, but also, since the enactment of Constitutional Amendment 18/65, under the force of the Constitution of 1946, in search of to identify the Tax Brazilian System, which intrinsic factors that, characterize the system resilience. The research is relevant once the identification of intrinsic characteristics of the system allows qualified discussion of proposed amendments to the National Tax System, recurrently on the agenda in Brazil and may also be applied to systems with similar taxation.

Keywords: Resilience, Complexity, Tax System, Taxation.

The Creation Of Truth In The Digital Age

Michele Bonazzi, PhD.

Truth is a complex concept that was able to fascinate the individuals since the dawn of time. The philosophers, from the Presocratics onwards, have questioned the concept of truth providing different interpretations. The truth has been understood as a correspondence between language and the things that are named, as the revelation of being or as a manifestation of the phenomenon, such as compliance with a rule or concept, such as coherence and finally as utility.

The global (McLuhan 1989), cosmopolitan (Beck 2003) and liquid (Bauman 2000) society in which we live can be represented as a labyrinth where it is difficult to navigate as the great narratives (Lyotard), which had assumed the task of giving sense and reason to the society, are entered into a crisis. The crisis of values and the consequent social anomie, on one hand, and the collective effervescence and democratizing power of the network, on the other hand, open the space to an interpretative dialectic perspective. So the truth can be perceived as an artifact produced by the cultural industry (Horkheimer, Adorno) in order to become an instrument of political propaganda and social indoctrination in a digital risk society. But at the same time

the shared horizon of participation, produced by the advent of the digital age, introduces us in new scenarios in which the individual, as a digital prosumer (Ritzer, Jurgenson), is able to exercise his/her own right and duty to speak the truth (Foucault).

Like Socrates taught us the search for truth is a process of looking inside ourselves and the aim of this essay is to highlight that in a social context that gathers more visions of the world, the problem is not in the interpretation of the truth that we choose, but in the way truth is communicated to others, and especially in the use we made of it.

Keywords: cultural industry, collective intelligence, truth.

Social Security In Brazil: Destination Crisis, Economics And Complexity

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The Brazilian Social Security system is intended to cover the citizen against various social risks, from birth to his death. This mechanism is linked to the welfare state, which started in the twentieth century, when the State began to provide social services, ensuring them to sections of the population of the developed capitalist countries. However, the apparatus necessary to provide coverage need resources or, pension terms, the existence of a system with financial and actuarial balance. In Brazil, the main source of funding comes from a tax species called social contribution, which requires destination of the money contributed. Therefore, the subject is founded on two opposing bases: one side is the individual, understood as a subject of rights, and the State seeking the consecration of the principle of human dignity; the other, the economic aspect, which should guide public administration not to grant more of what the budget reserves behave, failing to drive the system to ruin. But what makes the relationship between the economy and social protection even more difficult is the fact that society is not a static set of people, by contrast, is constantly changing: over the years the expectation of life of individuals increases, families are becoming less numerous and there are emerging new forms of family. Under the demographic aspect, in Brazil it is observed that the population has aged and the active part, responsible for financing the system, decreases. Thus, in a projection measured by decades, more individuals will use the Social Security and, in parallel, there will be less people to finance. Given these changes in society, it is a fact that the system needs adjustments. And here lies the economic argument, which shows that if no action is taken, the Social Security will not be economically feasible. Recently the government has informed that is adopting plans to prevent a R\$ 143 billion of deficit in 2017. All of this information create a turbulence, suggesting that Social Security is on the verge of collapse. Thus began a reform process, considered prioritary, that need provisional measures, without asking the public opinion, a dialogue with the National Congress or the establishment of minimum consensus before taking such initiatives. Interestingly, is observed the existence of a mechanism responsible for release considerable portion of the total collected by the Union with social contributions. This is the called untying of Union revenue, that until 2015 retired 20% and now seeks to corrupt 30% of pension exactions. Therefore, this subject involving Social Security taxation not only requires a complexity view, but also a dialogue, which is not occurring in Brazil. Thus, the purpose of this reserach is to analyze this issue by complexity lenses and, as a consequence, to promote a better undestanding of the agenda setting.

Keywords: Public policies; Agenda setting; Law studies; Governance; Decision making and systemics.

Austerity and Keynes's Theory

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"...Only a few months have been sufficient, since the beginning of the crisis, to bring him [Keynes] back to the forefront of the discussions on economic issues by experts and government personalities; ... Within only a few months, Keynes has jumped from oblivion to triumph—a truly impressive event."

(Pasinetti CJoEc. 2012).

After the Great Financial crisis of 2008, public fiscal activism was invoked. It was, apparently a return to Keynes's ideas. Coordinated monetary and fiscal policies were adopted to prevent the spreading of panic in international markets.

But in a short time the high levels of public debt/GDP ratios in many countries, swiftly led to a reversal of the mood toward public expenditure and state intervention in general. In the G 20 of 2010 in Toronto, a call for reducing deficits and the public debt to GDP ratio was made, again with the support of most mainstream economists, governments, central bankers and international economic institutions. Thus, just only a few months since the emergency moment, Keynes went back to libraries.

These reactions to the crisis and both the immediate, apparent, rehabilitation of Keynes and his early dismissal, raise several questions about the implementation of economic policy.

This paper will try to answer these questions first discussing the possible reasons of the widespread consensus for austerity, notwithstanding the many critiques made to the theoretical framework used to justify it and its manifest failure in restoring confidence and propitiate the turn to growth. The persistence of high unemployment rates hit the countries of the European Union, in particular those of Southern Europe.

Now fiscal adjustment seems to be the imperative that rules in the Brazilian economic and political debate as well. So the investigation will take into consideration the case of Brazilian economy.

The paper will approach these themes by reflecting on the extra economic meanings of austerity, and the partial acceptance of Keynes' General Theory. As far as the first issue is concerned, it will be maintained that austerity is in general perceived as virtue, whereas debt is synonymous of sin. An austere man is somebody capable of controlling its wants, that will live according to his possibilities, never bypassing his budget constraint and incurring in a debt position. The antonym of austerity is, in this same track, irresponsibility, propensity to spend regardless of budget, thus frequently facing with debt stress. This same frame is quickly transferred from individual to government behavior by orthodox mainstream economics, echoed throughout by the media, thus reinforcing the layman opinion.

Regarding Keynes, a net division between theory and policy was soon made at the time his General Theory came to the USA. The policy measures, mainly advocated within the 'neoclassical synthesis', were quickly accepted and inserted in the policy kit of mainstream economics, whereas the theory and its social philosophy was rapidly put aside, if not ignored at all. This facilitated the success of the attack against Keynesianism in the 1970's, coming from monetarism and New Classical Macroeconomics.

Environmental Complexity

Belinda Pererira da Cunha

Environmental Complexity suffers considerable inflections from the adoption of the term sustainable development as the alleged paradigm "consensual" in relation to the global growth model. However, within a perspective of a complex society, Leff proposes a new rationality, contrasting the current model, including in relation to the sustainable development model. What we have as indications that the complex society has not yet adhered to a more daring project of society is precisely the presence of a wide legislation providing tools for environmental management, regulation and establishment of principles and policies. An example for this is the access and use of water is vital to human survival and for driving the current global development model, carries with it elements that indicate this complexity, with various analytical dimensions, among them a more technical dimension, focused to engineering solutions, other related health considering water as a substrate that can transmit several diseases, an environmental dimension, to press for the preservation of this resource pointing to a management tool that resource, a dimension linked to leisure, a dimension used in the processes industrial, among others.

Market Turbulence, Economic Crisis and the 'Criminogenic' Features of Economic Theory

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Economic thought is generally supposed to be a monolithic and compact set of consistent propositions. This point of view is just but a reflection of the most widespread economic theory, which henceforth I will call the dominant economic theory, which has gathered a very large consensus all over the world since the last century and up to date, not only within academic circles but also within social, economic and political institutions, not to mention the lay mind of ordinary people.

The recent economic crisis, which started first in the USA in 2007-2008 and spread afterwards to Europe with unprecedented financial and commodity market turbulence, has produced, and is still producing, worldwide devastating effects. It might be argued that the dominant economic theory is being characterized by some 'criminogenic' features, meaning by this that it contains elements which can be viewed as a potential source of inspiration and justification in committing, though unintentionally, some social crimes – the latter intended as those human actions or policies having pernicious consequences to human beings.

In theory, and unfortunately also in practice, there exist crimes which are already duly recognized and punished by law, like, for example, insider trading, environmental pollution, extortion, bribery, peculation, usury, laundering, and also crimes against humanity, such as extermination, enslavement, torture, apartheid. None of these crimes, however, can be directly connected with economic theory

It should be admitted, on the other hand, that there also exist human actions or policies – no matter how finely conceived or badly designed – causing great suffering to single individuals and to entire populations, even to generations to come, the effects of which, being not recognized as inhumane, are not recognized and punished as social crimes. Harsh austerity measures, uncontrollable moral hazard financial speculation,

land and water grabbing and also the effects produced by the very existence of particular markets, like the blood and the labour markets, are clearest examples of those human actions or policies, which have quite often produced, and in so many respects are still producing under specific circumstances, great and long lasting suffering among the populations in different parts and in different contexts of the world – though in various extent and degree.

The main thesis of the paper is to show that the roots of those actions and policies can ultimately be traced back to the ‘core’ of the dominant economic theory.

The Hypertechnological Civilization And The Urgency Of A Systemic Approach To Complexity. A New Humanism For The Hypercomplex Society

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Nowadays, as never before, technology has come to participate in the synthesis of new values and of new evaluation criteria. Technological innovation, as well as the post-humanistic challenge (the new Utopia), enable the social actors to perform further – and irreversible – improvements, reaching higher and higher levels of quality. This paper, therefore, has the following objectives: a) to define the limits of this Hypercomplex (and Interconnected) Society by analysing its risks and implications; b) to propose a hypothetical “New Humanism” for this civilization, a kind of humanism whose main concern is not technique, but “the Person”; c) to highlight the urgency of a systemic approach to complexity. On the other hand, the current ecosystem of communication is causing radical changes in codes, cultures, and in the hierarchical procedures of production and sharing (disintermediation) – an authentic anthropological metamorphosis – characterized by numerous implications as to paradigm, citizenship and inclusion, all of which heavily influence identity and subjectivity. The risk of such an enormous metamorphosis, implying manifold variables and concauses, has turned out not to be a unique occasion of innovation and social change, but rather a further opportunity in favour of elites and exclusive social groups. Thus, this hypertechnological civilization needs, not only a renewed concern about rules and rights, but above all a systemic approach to complexity, putting into close contact knowledge and skills, too often kept far apart. The interconnected economy requires strategic choices as well as a new ethical attention with regard to the social actors’ problems, to the system of relations and to the importance of knowledge. It follows that a new communication culture is needed, which would be open to sharing and understanding, capable of influencing the social mechanisms in developing and favouring trust and cooperation. On the other hand, communication has more and more necessity to recompose a global context which seems to be fragmented and chaotic. Only when this kind of communication is seen as a social process of knowledge sharing, i.e. of social interaction, will it be an instrument, in all its complexity, for overcoming individualistic egoism as well as for connecting and enhancing the social production of knowledge.

Keywords: paradigm; complexity; ecosystem; cultural evolution; Hypercomplex Society; Post-Humanistic Utopia; New Humanism; ethics.

Bit-Knowledge: Digital Recollection And Memory

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Access to the web without borders, endless possibilities of connection, online knowledge, human relationships defined by the beating of the fingertips on screens are elements of freedom? Or it is a sale of our intimacy to an ephemeral visibility in a world devoid of tangibility? How this is affecting the person's mind and capacity of memory and recollection? We are approaching to the deconstruction of the border between real and virtual? In these two worlds, one natural, one artificial, we dive almost with the same frequency. In this duality, it is developing a necessary debate on the progress of digital devices and digital life, which have radically changed the daily habits, the perception of body and identity, especially with regard to the operations carried out the mind and the knowledge we have and from which we draw to create, produce and evolve: the modification of the act of remembering and the value of memory.

The idea is to understand how the confluence of many of the phenomena of digital technologies progress has been imposed, quietly and passively as new knowledge convergence basin, which from a real production process is becoming more and more virtual and digital; how the memory represents a cornerstone of the person, of his most intimate, but that could suffer the loss of the same when exposed in each virtual space; the importance of memory, designed as a huge throw-in which to cultivate what sets us apart, from which to draw in the path of our existence, defining the system of reason and the way we operate it for study and understand the reality, but that we are replacing with hardware or clouds, to whom we entrust the task of recording what we consider important.

Three environments are the field of inquiry:

- Digital communication: all our pressure on the screen, each sharing, every thought, every image or memory that we store in the digital memories contribute to the growth of the information (big data) of each individual, showing transparently, without filters, fears, desires, fragility: the intimacy;
- Augmented reality: the hybridization process between natural and synthetic, between concreteness of tangible and volatility of digitization. We are immersed in a society where change, progress and knowledge have become synonymous, where our actual view is accompanied by the reflection of this on the black screen that illuminates what exists only in a world of algorithms;
- Development of robotics and artificial intelligence: while the first is intent on creating machines and androids that can be functional to the daily life of the individual, but of which they want to trace, as truthfully as possible, the appearance, becoming more real than the real, the second is gaining more space in between person and machine relationships, showing how a digital avatar has a faster developmental ability compared to the progress of human reason.

This context shows the endless possibilities of interaction and creation of new cultural paradigms and new models of knowledge that advance quickly.

Constructivism And Legal Globalization: Entropy And Negentopathy In Emerging Law

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As opposed to classical constitutionalism based on the rules of recognition stemming from autopoietic rules produced by each given legal system, one feature of the constitutionalism of globalization is the diffuse nature of the sources of legal regulations. Alongside the rules of the traditional system, there are diverse normative elements that are not generated by State legislative bodies. Among these, we can observe: arguments issued by judges from other jurisdictions, rulings made by international bodies like the Inter-American Court of Human Rights, the Inter-American Commission on Human Rights, the European Court, etc., as well as a plethora of constitutional texts of what is known as soft law. This diffuse nature brings into the fore the risk of incoherence of contemporary constitutional systems, which are increasingly globalized, but also less well-defined. Meanwhile, as we have pointed out in other works, if the term 'legal norm' does not denote the statements of a system, regardless of the criteria used to determine its affiliation, but refers instead to the normative constructs generated by legal operators, a normative system's coherence is therefore determined by the relationships between the normative propositions produced within the above-mentioned diffuse context.

A central thesis of this work is that the law of globalization and contemporary constitutionalism in particular conform to the properties of a complex adaptive and self-organizing system from which a new legal order is emerging.

Because of its diffuse quality, a system in an emerging process runs the risk of exhibiting a high level of incoherence that, to use cybernetic terms, corresponds to a high degree of entropy that can lead to the absence of legal certainty and a limited understanding of the system itself.

Main research question

Is it possible to create a theoretical model that could prevent entropy and, where appropriate, "negentropize" the emerging constitutional system during the process of legal globalization?

Research Aim

I propose to analyze this phenomenon from the perspective of complex legal constructivism in order to outline a model that prevents and enables the "negentropization" of the system; that is, for it to contribute to reducing the level of disorder that might arise in constitutional systems due to a lack of coherence.

Hypothesis

Such a model can be created by means of a matrix that represents the degree of coherence in the global system.

Epistemic, methodological and theoretical grounds

The work constitutes a development built on the general theory that forms part of my main line of research, something I call "Complex Legal Constructivism". This theory can be defined as a new epistemic, theoretical and methodological approach, adapted from a combination of cognitive sciences and complex system theory. The objective is to renovate our understanding of the impact of positive law and legal theory on the social construction of reality through agents and institutions.

Social justification

To exercise intersubjective control over legal decisions regarding constitutionality

From Gino Germani To Ulrich Beck To Understand The Crisis Of Young Generation

Mauro Giardiello, University of Roma Tre

The international literature and a number of government reports have documented in various ways that precarious conditions, hardship and inequality characterize globally the reality of youth. Chronic insecurity, the gradual loss of rights, the increase in youth unemployment and underemployment outline the formation of a new category: the no-citizens. From this point of view, according to Standing, the affirmation of the neo-liberal paradigm with its package of reforms has led to a new phase of spin-off of the economy from the social world by making the social justice subjected to the market price.

The changes outlined have produced radical changes in young people causing the crisis of the linear transition model, unable to read the trajectories of young people characterized by discontinuity and fragmentation. This situation has generated a debate on the need to reconceptualize the interpretative models about youth by focusing on one hand on the actualization of Mannheim's generation concept and on the other on the critical analysis of the individualization category developed by Beck.

Although the latter is considered one of the theories that has described more adequately the change in the youth reality, outlining the transition from a normal to a biography of choice and / or at risk, according to many scholars it presents some weakness and ambiguity in the comprehension of the constraints of the social structure.

If there is no denying that the concept of individualization is configured as a clue to investigate the social factors that shape the new patterns of inequality in contemporary society, it is also evident the emergence of some misunderstanding stemming both from the difficulty of the theory both in the definition of the conceptual apparatus and explanatory models to identify new processes of inequality.

The present work is part of this debate in order to rethink the relationship between change and risk, between biography and social structure and how they involve the young generations. On this basis we intend to recover the concept of marginality proposed by Gino Germani in the individualization theory of Beck. It is a largely theoretical work aimed to show not only the relevance of Germani's thought but also how it can enrich the heuristic capabilities of the individualization theory to describe and explain the new conditions of precariousness and vulnerability of young people at a global level.

Within these considerations, the present study intends to review the use of the category of young people at risk or of biography at risk, and propose the use of the concept of youth marginality in the context of the individualization theory. This avoids the analytical slipping, and sometimes normative too, on the individual responsibility and to recognize as the marginality is the product of a complex etiologic circular process that involves structure and subject.

Mechanism Design Theory: A Proposal Of Application To The Incomplete Contracts

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The interdisciplinarity in the Law research field has been increasingly valued, due to the fact that enriches the scientific work by providing the researcher a broad view of content you want to address. In this context, the Economic Analysis of Law, as a theoretical study tool, provides elements able to predict the effects of legal sanctions on human behavior, once it provides a behavioral theory to predict how people respond to incentives. At first, the concepts used by jurists were extracted from the neoclassical economics. But the development of studies in this field made evident the need to improve the instruments, making it essential the consideration of complexity to a correct formulation of hypothesis. The agents act according to its self-interest, which is however, rationality limited. Additionally, incentives are capable of shaping the behavior of individuals in order to interact so as to efficiently allocate the resources. When concluding an agreement, the parties tend to look at the initial state, aiming to be sure as much as possible about the full compliance. However, this idea of contractual completeness is not consistent with reality, given the impossibility of predict, by the parties, all the possible events. Moreover, in certain cases, it is the parties themselves that consent to leave some gaps, for the ulterior fulfillment that may be linked to a future or uncertain fact. Thus, transaction costs incident on contracts, in theory, complete, could derail its conclusion, considering the cost to provide the maximum possible eventualities, whether the ex post risk linked to the fulfillment of the covenant to the future indeed, what makes contracts, as a rule, incomplete. The problem is when the parties are faced with the fulfillment of contractual gaps. How to proceed in this case? To whom delegate any decision? How to ensure the efficient allocation of resources involved? These are the questions to be developed in this work. So at first it is essential to contextualize the issue under the New Institutional Economics, as well as some considerations about the theory of transaction costs. It starts with the idea that when concluding a contract the parties seek legal certainty, trying to anticipate all possible hypothesis. However, this prediction ex ante is not feasible, given the complexity of business relationships. Settled this premise, it is found that the filling of these contract gaps is taken brought to the attention of the Judiciary Power, which due to the lack of predictability of its decisions, has ultimately leaving the contracting parties in a state of legal uncertainty. The proposal of this work is to apply the mechanism design theory to incomplete contracts, enabling a resolution of the contingencies in court by incentives for the parties to take legal strategies to achieve efficient results. If drawn strong incentives, mechanisms translate into self-applied standards, able to reduce transaction costs.

Keywords: Business. Social and economic development. Law Studies.

Cognitive Meta-Autopoiesis And Self Awareness In The Artificial Intelligence

Massimo Magno

“The reality it’s a free choice between multiple deterministic possible ramification”

“Live until resound the beauty”

Why we can contemplate a sunset? Why our brain is different from the A.I.? The difference between a mechanical automatic choice and a choice with awareness is principally the self-awareness of the system considered about the choice that itself has done. A system can react, hypothesis of mechanical answer, or can be self-aware and react in proactive way. A central element within the theory of autopoiesis is the

concept of structural coupling which refers to the relation between systems and their environments. Environmental events can trigger internal processes in an autopoietic system but the concrete processes triggered (and whether any processes are triggered at all) are determined by the structures of the system. A system is said to be structurally coupled to its environment (or other systems in its environment) if its structures are in some way or other “adjusted” to the structures of the environment (or systems in the environment), i.e. if the structures of the system allow for reactions to “important” environmental events. But, what if the coupling could be adaptive and the autopoiesis will be generated by an evolutionary function that determine in autonomous way the “choice”? By Kauffman in the very long period exist a sort of general syntropy that has created step by step by the “next adjacent possible” the life and the universe as we know it.

Normally, for every System A_j exist one poietic application f_j :

$$\forall A_j \exists f_j : P(A_j) \rightarrow \{0,1\}$$

with $\{0, 1\}$ the dichotomic image of the System A_j under the application f_j .

The possibility to create a meta-autopoietic function ask an internal application g_i related to the influence of the environment B and a generic A_i on A_j as

$$\forall A_j \exists g_i : (B, A_i) \rightarrow A_j$$

and the effect of a mutual influence between a subset $C \in B$ and A_i is $\neq 0$, i.e.

$$g_i(f^{-1}(C)) = 1, \forall C \in P(A_j)$$

Mathematical Model Of Autopoiesis In A Structurally Coupled Systems

Massimo Magno

We are dealing n systems A_1, \dots, A_n and for any $i, j = 1, \dots, n$ we have a map

$$f_{ij} : A_i \rightarrow A_j$$

Hence given a point $a \in A_i$ this is “seen” by A_j by sending it to $f_{ij}(a) \in A_j$. It could happen that the function f_{ij} is neither injective or surjective so different points of A_i can be seen as the same point in A_j or some points of A_j is not coming from a point in A_i .

Moreover, for any $i = 1, \dots, n$ we have a map

$$g_i : P(A_i) \rightarrow \{0,1\}$$

where $P(A_i)$ is the power set of A_i . The map g_i takes a subset C of A_i , namely $A \in P(A_i)$, to 0 or 1, i.e. $g_i(C) = 0$ false and $g_i(C) = 1$ true (one can also use a fuzzy logic with more values of trueness, if this makes sense...).

The interaction of A_i to the system A_j is obtained in the following way:

$$g_i(f_{ij}^{-1}(C)) \in \{0,1\}, \forall C \in P(A_j)$$

In other given a subset C of A_j we takes its preimage $f_{ij}^{-1}(C) \in P(A_i)$ and we take its

value 0,1, namely $g_i(f_{ij}^{-1}(C))$

Finally, let B a big set (the external system) and assume that for every $i = 1, \dots, n$ we have a map

$$\sigma_i : A_i \rightarrow B$$

The theory of autopoiesis is the concept of structural coupling which refers to the relation between systems and their environments. Environmental events, sometimes, can trigger internal processes in an autopoietic system but the concrete processes triggered (and whether any processes are triggered at all) are determined by the structures of the system. A system is said to be structurally coupled to its environment (or other systems in its environment) if its structures are in some way or other “adjusted” to the structures of the environment (or systems in the environment), i.e. if the structures of the system allow for reactions to “important” environmental events.

The interaction between A_i and A_j through B , is given by the following map

$P(B) \rightarrow \{0,1\}$ given by:

$$g_j(f^{-1}(\sigma^{-1}(D))), \forall D \in P(B)$$

this interaction between A_i and A_j , by the mean of B , in term of influence, could be not little stimulate the probability to skip from 0 to 1

$$p(g_j(f^{-1}(\sigma^{-1}(D)))) \neq 0 \rightarrow \{0,1\}$$

where $p(a)$ is the probability defined in $[0,1]$.

Space And Time In The Globalization Era: New Patterns In Territorial Development

Michela Luzi

Space and time are complex notions that have always affected individual and social life. It is impossible to give a clear and absolute definition of those concepts, however their social representations have always been powerful means of orientation of social action.

In contemporary societies, moreover, information technologies have even increased the complexity of those notions, whose character of 'liquidity' is the cause of the many phenomena of disembedding that characterize the era of globalization.

This is deeply affecting also the local territories: the end of the traditional division in places/moments of production, relax and consumption; the cultural and economic contamination; the fast paces of change etc.; these are causes of new patterns of territorial development, on which my presentation will focus.

Tax Law And Complexity Theory

Renata Zelinski

This article proposes an analysis of legal science in Brazil, specifically the Tax Law, in the light of the complexity theory, which object is the study of complex systems. It can be said that the law is a Complex Adaptative System or CAS, as it is composed of elements that change from interactions with each other or through the system with its environment. Such elements are named as agents and these independent and aplenty, interact in different ways in order to organize themselves spontaneously and adapt to information from the environment in which they operate; When in interaction, they adapt to each other. Arise, then, emergencies, which are the result of properties generating interactions, absent from the parties that integrate the system. From this premise, it proves to be important to evaluate the change of the reductionist imperative that characterizes the Tax Law as a positive standard, based on a simplifying scientific thought, which rejects the standard set of their social, political, ethical, economic and environmental. One cannot disregard, through the adoption of a reducing method, the effects that the Tax Law causes in Politics, in Economics, in Ethics and in Environmental questions. This time, considering that the Tax Law stands itself in a systemic complex reality and adapts to changes as a Complex Adaptative System, it is imperative to understand its positioning and its consequences on other sciences, in a bias that allows their openness to multidisciplinary.

RESUMO

O presente artigo propõe uma análise da ciência jurídica no Brasil, mais especificamente do Direito Tributário, à luz da teoria da complexidade, cujo objeto é o estudo dos sistemas complexos. Pode-se afirmar que o Direito é um complex adaptative system ou CAS, pois é composto por elementos que se modificam a partir das interações de uns com os outros ou do sistema com seu meio. Tais elementos são

denominados como agentes e estes, independentes e em grande quantidade, interagem de diversas maneiras, de modo a se auto organizar espontaneamente e se adaptar às informações do meio em que se inserem; ao interagirem, adaptam-se uns aos outros. Surgem, então, as emergências, que são resultados das interações geradoras de propriedades, ausentes às partes que integram o sistema. A partir dessa premissa, revela-se importante avaliar a alteração do imperativo reducionista que caracteriza o Direito Tributário como norma positiva, fundada num pensamento científico simplificador, que afasta a norma posta do seu contexto social, político, ético, e econômico e ambiental. Não se pode desconsiderar, por meio da adoção de um método redutor, os efeitos que o Direito Tributário provoca na Política, na Economia, na Ética e na questão Socioambiental. Desta feita, considerando que o Direito Tributário se coloca numa realidade complexa sistêmica, bem como se adapta às mudanças como um complex adaptative system, imperativa é a compreensão da sua postura e das suas consequências diante de outras ciências, sob um viés que permita a sua abertura para a multidisciplinaridade.

The Aim And Function Of Scientific Collections In The Third Millennium

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In the age of the mass and free flow of information, the new technical possibilities made the participants of scientific life giddy as well. And as in the operation of all institutions, and so of the scientific collections – libraries –, it is also true that objective determines the tool, method and procedure.

In the known history of mankind, in intellectual life, in the interest of the continuity and growth of culture, for conservation, education and research, and therefore one of the oldest institutionalized establishments are the libraries. Their basic purpose, objective has not changed over the past millennia, centuries, although periodically they has tried to create more adequate conditions of the possibilities of scientific knowledge adjusting to the current trends and the needs of acquisition. Accordingly, library science has developed itself also and set up the criteria for itself that mostly support and pass the scientific results. It has appointed the essential framework of interpretation in terms of science theory and science taxonomy. However, they has struggled with constant shortage of money and professional in different periods variably but in decreasing rate so they could promote only at the cost of great difficulties and necessary shortcomings their associated disciplines, concerned researchers and readers. At the same time, troubles are also known by the users – together with reasons behind them –, the imperfection and system error of service have become routine.

Institution maintainers have been able to keep up with the multiplied sudden development of information technology and the associated hunger of information with only significant financial investment, so the role of information and the extent of informed being have grown, and last but not least, the persistence of interest has brought more money and held that in libraries. In addition, library profession has been enriched with many qualifications by the joining of IT experts. But the programs/software of informatization and digitization do not have ability to problem-solving, creative and innovative thinking, which is man's own, and which is acquired by man through appropriate training himself. To the more detailed explanation of thought and its motivations, probably, the boundaries of nowadays' cultivated science will be broadened as well. But in the meantime, however, that this step may take place, libraries

should not give up the requirement of scholarship because of informatization and digitization, they must reflect the complexity of existing information structure as completely as possible.

Technical modernizations do not take out or solve the duties of library science rolling before itself for a long time, to which in turn library professionals are needed, who are provided with guaranteed knowledge by higher education that has been able to apply in its context as well. Librarian, who is thinking in system, needs a management that formulates this expectation as a target with the construction of right tools, methods and expanding relationships.

The complexity of Constructivism in Luhmann: a relativistic way to revive Critical Theory

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This lecture aims to study Luhmann's special critical social theory. His topical criticism concerns two aspects of his analysis of media communication, which we assume here as a general hypothesis:

1. media communication systems cannot be called communication in every respect, not in the historical and methodological meaning assigned to this term (sharing, pooling, etc.);
2. the anti-Humanism of Luhmann's theory may be helpful to speak of the power of media fascination. Suggestion is, therefore, the keyword of the latest media. Their abilities are not described in terms like "transfer", "connectivity" and even "understanding", but alteration or "irritation".

This process is what takes place within the social structures placed before media constructs.

At one point, we start from the assumption that in Luhmann's point of view, social systems are able to create "sense". This is impossible for social actors. All systems (from art critics to the system of new journalists) self-build structures of meaning. These systems are, in fact, the only way to produce "so called" socio-cultural meaning. After building these horizons of meaning, they operate further, on the basis of what they have produced. But this production of meaning is renewed only within the boundaries of these systems.

One consequence of this - and it is the second point - is that the media (old and new) have neither the opportunity to progress in an ethical sense, nor to advance the whole of society. The basic problem is that communication is not supported by the absolute chance of creating understanding between systems and among individuals. Nevertheless, it still does. The imprinting systems might offer something meaningful about what is public, but without being able to transmit to them universal validity.

Sense, self-produced, is not transmissible to all external systems. The media system can only lead a certain resonance with the outside, among the audience; this is composed of: expectations; empty breaks and, during use, random readings and probably misunderstandings. Script goal is insight into important relativist aspects underlined by Luhmann. The critical paradigm emphasises the manipulative power of the media: with low reliability; and, above all, the recognisability in expressing opinions and partisan views, or at least partially so.

The thesis of this lecture is that Luhmann's critical points are rather different but functionally equivalent ways to arrive at the critical paradigm, in terms of the total unreliability of the media.

Which, from Social Systems (1990) onwards are: inability to advance in company, or make them stronger; inadequate in order to encourage self-diffusion processes (intra-systemic) of meaning. Finally, these are irrelevant to performing socio-descriptive action, since they work only for self-describing structures. As metaphors of full disclosure, the media is, on the contrary, a device that increases the entropy of interpretations, economically controlled by external structures (the promoters of the media) and even allopoietic.

The Fair Trade As Way To Systemic Inclusion

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The international trade law, in our times, has as main normative basis the World Trade Organization – WTO and the General Agreements on Tariffs and Trade – GATT from 1994, which the principal purpose is mitigate the trade barriers between the signatory countries. Occurs that the economic policies by WTO, where prevails the idea of the markets liberalization and the physiocrat ideal of the “*laissez-faire, laissez passer*”, do not include on the international trade system the development countries.

The World Trade Organization has many legal provisions whose the intention is facilitate the trade to the development countries. As example, may be cited the Article I, where treat about the Most Favourite Nation Clause and the Article XVIII, where explain the “Governmental Assistance to Economic Development”, both of the GATT from 1994. On the other hand, is clear that exist a differentiated treatment to the central countries. The manufacturing products coming from underdevelopment countries, for example, suffer discrimination to enter in development countries. Mongolia and Norway payed 23 million Dollars in tariffs in 2001, but Mongolia exported \$143 million and Norway \$5.2 billion, or 40 times as much. In effect, Mongolians paid 16 cents to sell the US a dollar's worth of sweaters and suits, while the Norwegians paid half a cent for every dollar's worth of gourmet smoke salmon, jet engine parts and North Sea crude .

This occurs because there is an over-inclusion of the richest nations in the international trade system. The poor countries, although have certain benefits provided for in the rules governing international trade, need to continue fighting against the major world powers, which are protected by the courts of the organizations. The case India – Quantitative Restrictions (DS90) is a great example where a big nation (United States) can interfere in the economic policy of a developing country under the WTO auspices.

If international organizations keep interfering in the economic policy of a developing country as a perennial systemic corruption, a breach of operational closure will occur and thus weakening of the functional differentiation of the system. In order to regulate the intra-systemic operation, the poor countries should seek means to socio-economic development. It is this scope that arises the Fair Trade.

The World Fair Trade Organization – WFTO conceptualizes the Fair Trade *as a trading partnership, based on dialogue, transparency and respect, that seeks greater equity in international trade. It contributes to*

sustainable development by offering better trading conditions to, and securing the rights of, marginalized producers and workers.

The Fair Trade is a way to achieve the development and mitigate the systemic corruption because it decreases the intermediaries in the buying and selling process, allowing greater gains (financial and social). Seeking to develop, increases systemic inclusion, preserving the internal operations and stabilizing the expectative abound in today's society.

McLuhan And The Complexity Of Knowledge. University As A “Marketplace”

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This proposal focuses on McLuhan’s interpretation of the educational shifts bolstered in the Sixties by the “fall out” of media, so much relevant for the development of mass University and the analysis of the cognitive complexity connected to the advent of risk society.

In fact, McLuhan’s mediological reflection does not neglect the evolution of the higher education institutions in the age of technological accelerations. Specifically, McLuhan is deeply aware of the particular phase in which universities are no longer elitist functional systems and become a mass educational industry. This is the interpretative perspective of McLuhan’s interest for the processes of innovation in the field of higher education, highlighting the socio-cultural, political and productive shifts peculiar of the economic prosperity age.

The heuristic aim is to deepen the knowledge of McLuhan’s sociology of University. The latter is a significant field of study, especially in regard to the mediological research fostered in *Understanding media* (1964), where his style makes him appear as a dowser of research. As a matter of fact, McLuhan usually fills his works with flashing or ‘prophetical’ insights.

It follows that the image of university as a “marketplace” seems to anticipate the development of universities in the years marked by the proliferation of courses and campuses, of financial aids for students, of supplies of tablets to enrolled students, of the assignment of credits to students who also work, and of e-learning and digital courses.

From this perspective, the interpretation of university reformism founded on McLuhan’s intuitions allows one to link the evolution of educational processes to the change of communicative praxis in the age of the global village of information, marked by the instances of complexity and efficiency.

In the same way, such an interpretative approach allows one to highlight the relationship between “the teaching machine” and the interactional practices introduced by new technologies, which make the symbolic universes of daily life subject to fluctuations that have become permanent. This is even truer to the extent that it is possible to consider the medium as a message and the university as a market, in the light of a constant educational mutability for incoming generations.