

INSTITUTIONS AND ECONOMIC GROWTH: A RELATIONSHIP DERIVED FROM THE SOCIAL BEHAVIOR OF THE INDIVIDUALS, NOT ONLY OF THE FORMAL RULES

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Abstract:

This paper discusses the relationship between institutions and economic growth. In recent debates about the Brazilian economy, it is common to emphasize that the obstacles to the economic growth are due to the absence of rules, which regulate the labor market, the state intervention and the macroeconomic policies. In this sense, the generation of economic growth is necessarily (and sufficiently) linked to the establishment of new rules of behavior, in the formal meaning, as proposed by New Institutional Economic (NIE). We think that this analytical perspective is insufficient when dealing with the complexity of the referred process. The paper will discuss the nature of the economic growth in three visions. For the Old Institutional Economics (OIE), the role of the individuals is a crucial element of social structure which originates the institutions. For the NIE, these relations are linked to the transaction costs, property rights, bounded rationality, opportunism and assets specificity. And for the Neo-Schumpeterians, the notion of routines and innovation are central to the formation of institutions. The first and the latter visions focus on the role of individuals in drawing economic growth trajectories, despite the fact that habits and innovation are respectively the reason of the beginning of this process.

The Brazilian economy is experiencing a great crisis. It is widely recognized that we are living the biggest recession in our history. The term Great Depression, which was never used to refer to the critical situation we lived in 30s, 60s and 80s, is now perfectly adaptable to the present moment. The unemployment rate of the Brazilian statistical data is higher than it was in the 80s; the fall of GNP in the last three years is over 7%, the public deficit has grown due to the recession and there is no perspective of the increase of the investment rate, which is the lower of the last decades.

We are living a great transformation and deep structural changes in our country, which will be discussed in the sequence. Comparing the three last terms - Lula I (2003-2006), Lula II (2007-2010) and Dilma I (2011-2014) -, Temer's current term, since the end of the second term of Dilma II (2015-2016), is following an orthodox proposal of economic policy. The present discourse is

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centered in the idea that recession, unemployment, drastic fiscal policy, welfare and labor reform will restore confidence, which was lost with the general disorganization caused by Lula's Era.

The most dramatic point is that the social advances conquered with great difficulty (reduction of inequality, increase of the minimal wage, Bolsa Família programme, Fome Zero, etc.) have been accused by Lula's Government opposition as the responsible for the economic disorganization and social chaos. We will not discuss this political controversy. But we will try to explain how institutions of the respective regime fail; leading the country to the difficulties we are currently living.

Despite the fact that corruption spread in all structures of the system, contaminating all society and administrative boards of great enterprises, like Petrobras and heavy construction companies, the problem has been attributed to the emergence of populism caused by Lula's Era. Consequently the solution should come from a new economic policy, which has been implemented after the impeachment of the President Dilma.

The new government, which arises with the coup d'état in 2016, elected a set of reforms to lead the country back to the path of economic growth. The name of the govern program was "A Bridge to the Future". The official discourse emphasizes it was necessary to build a "new economic environment", which would ensure stability and consequently economic growth. The construction of this process was based on the creation of new institutions that will guarantee such objectives. Our objection to this point of view is absolute. The term institution is used without the minimal analytical precision. It is seen as a panacea against all social diseases. Definitively, institutions are not believed to be what they are.

That is why we will talk about the relation between institution and economic growth, which is much more complex than the dominant discourse proposes. The research agenda on this relation is absolutely neglected and misunderstood in the Brazilian debate concerning the phenomenon of economic development. Actually, such process is seen as an outcome of macroeconomic policy in the monetary and fiscal sense. It is not wrong but is clearly insufficient. The reason is that this analytical perspective is reductionist concerning the complexity of the

referred process. It should include the various institutions dimensions discussed in the sequence.

The concept of institution in the meaning of a set of rules, norms, habits and its evolution, is taking on a relevant, innovative and challenging analytical dimension. Due to this, a specific insertion in different economics environment is required. In this sense, it is the own notion of institutions that creates these differences. They are resulting of the historical and structural specific root, which performs distinct trajectories of the economic growth, in the respective socioeconomic environment. That is the reason why “institution” and “economic growth” are notions umbilically linked. However what is the relation between them? How are these notions connected? The answer involves the concept, the theoretical stream and the methodological approach related to the various definition of institution. The discussion of these points is the objective of the paper.

So, beside this introduction, in the first part we will discuss briefly the importance of the institutions in the process of economic growth to the institutionalists. In the second part we will talk about three different institutionalist approaches concerning the referred process, by presenting the contribution of Matthews, Zysman and North. In the third part, we will discuss the vision of the Neo-Schumpeterian approach about this process, through the contribution of Richard Nelson, who proposed the notion of “social technology”. Finally, some conclusions will be presented.

1. ECONOMIC GROWTH TO THE INSTITUTIONALISTS

The institutionalist research agenda about economic growth has a great convergence with evolutionism. However it does not imply that the two approaches are the same thing. While the first emphasize the central role of the institutions, the second, in the Neo-Schumpeterian vision, put emphasis on the process of technological change. But, despite the differences, these two approaches are not incompatibles.

Such a statement reemphasizes questions that never should be forgotten. They concern the ideas that economic growth: (a) is a process with its

collapses/ breakdowns and rebuilding/restoration; (b) the features of the transition from the old to the new economic growth process are key points to the analysis; (c) structural changes are fundamental and derived from technological or institutional nature; and (d) despite of the fact that always be succeeded by an increment of the output-capital ratio – or increase of rhythm capital accumulation vis-à-vis the population growth - the referred process has many heterogeneous features from a country to another one. Sometimes these processes are even comparable. And these are the core concern of the institutionalist tradition: the history matters, the forms of the capitalist economic growth are differentiated and multiple, economic growth is continuous and has deep historical roots (North, 2005; Hodgson, 2002; Zysman, 1994).

The inclusion of the notion of economic growth in the institutionalist research agenda has been made in three analytical perspective: (a) the Old Institutional Economics (OIE) of Thorstein Veblen, John Commons and Wesley Mitchell; (b) the New Institutional Economics (NIE) of Ronald Coase, Oliver Williamson and Douglass North; and the contemporary institutionalist linked to the view of Veblen, and critical to NIE, which we call Neo-Institutionalists (or Evolutionary Institutionalists), where we include, among others, Geoffrey Hodgson, Warren Samuels and Malcolm Rutherford. There are many convergences and divergences between these three approaches. We will discuss briefly them.

There isn't in the OIE an analysis concerning the phenomenon of economic growth; however the notion of process and evolutionary perspective appeared as a new methodological perspective to the treatment of economic development. Veblen brought the connection between individuals - his habits, behavior and beliefs - as a central question to elucidate the way how institutions are formed. Departing of this notion, the economy could be perceived as a link between the micro to the macro, or to the part to the whole, or, in Commons vision, as a connection of the individual action to the collective action.

In the innovative vision of the NIE, institutions reduce transaction costs, and, in doing so, they “optimize” the economic environment, decreasing uncertainties and diminishing inefficiencies, so that it conduces the economy,

through the mechanism of path dependence, to a situation if not “optimal”, at least as near as possible of it.

In this sense, Matthews (1986, p. 903) states that: “... *the economics of institutions has become one of the liveliest areas of our discipline. (...) [And a] body of thinking has evolved based on two propositions: (i) institutions do matter, (ii) the determinants of institutions are susceptible to analysis by the tools of economic theory*”. So the question we should explain is what these tools are. The central point to us is that economic growth is a complex process. In this sense, it cannot be explained in terms of ‘efficiency’ or optimality. And finally, uncertainty prevents predictability concerning the future. Three authors will be discussed concerning their points of view about institutions and growth. They all converge with the analytical perspective proposed by Nelson. The relationship between institutions and individuals are central to them.

2. INSTITUTIONS, GROWTH AND "EFFICIENCY": A BRIEF TOUR

The issue of the importance of institutions as a factor of regulation of economic performance deserves some comment. As it will be seen in this article, there is an ongoing tension between two major approaches among institutionalist approach. On one side there are the heirs of the closest tradition of the Old American Institutionalism, faithfully represented by the studies of Veblen, Commons and Mitchell. Today this chain, accepting the proposition suggested by Nelson & Sampat (2001, p.18), would include authors such as Geoffrey Hodgson, Thrainn Eggertsson, Malcolm Rutherford and Richard Langlois. On the other side, there is a group of authors that, with the exception of Commons - which, according to them, suggested the notion of transaction costs - has little affinity with the Old Institutionalism; being, therefore, called NIE theorists. Accepting the same proposition suggested by Nelson & Sampat (2001, p.20), authors such as Demsetz, Alchian, Sudgen, Axelrod et al. would include themselves on this chain. All would accept Coase’s original proposal - later developed by Williamson and North - that focuses on the theory of transaction costs.

For the followers of Veblen’s old American institutionalism - such as Hodgson, for example - there is strong disagreement that the rigid assumptions

of (substantive) rationality in economic theory are capable of providing factual and realistic explanations in the sense that behavior is effectively "effective" in contexts where there is already considerable joint experience. For the theorists affiliated with the NIE, institutions define, model and maintain the aforementioned "rational behavior" in different contexts: individuals do not deduce or think for themselves about what is an adequate action, but act only by doing what is in its context (Nelson & Sampat, 2001).

Although Commons accepts that customs, norms and rules may arise spontaneously, it points to the decisive role of conscious collective action by the government in resolving conflicts between institutions. These decisions derived from Commons' notion when become law or are supported by policy; make these institutions more specific, precise and lasting.

So the difference between a theory that says institutions imply conscious and coordinated planning and a theory that conceives them as a result of an uncoordinated evolutionary process does not necessarily translate into a difference as to whether existing institutions are "efficient" or not. For neoclassical institutionalist tradition, Demsetz work on property rights included the assumption that "the law was effective and that legal changes reflect changes in socially optimal rules" (*op. Cit.*, 2001, p. 240). Likewise, part of the studies about business organization assumes that organizational forms are chosen rationally and are therefore optimal.

Nowadays, one can observe a departure from these positions in the various institutionalist schools, especially within the NIE itself. Douglass North, who in the early studies assumed that institutions evolved in order to achieve higher levels of efficiency (Davis and North, 1971 *cited by* Nelson and Sampat, 2001, p. 25), has advocated in his studies, as in the one of 1990, that societies that has relatively efficient institutions are relatively more fortunate. This item will be better explored in his work of 2005, as it will be analyzed in section 5. In this sense, the idea that it is not necessary for institutions to be efficient triggers a new theoretical strand, in which the current institutions ultimately explain the differences in economic performance between countries, and that they assume different local institutional arrangements. This is the path that begins to be

sketched in Matthews's analysis and that takes a more definite form in Zysman's analysis, as Geoffrey Hodgson (1998) also suggests. Recent studies by North and Nelson reveal this convergence. It follows that "building" an adequate and mutant institutional environment does not necessarily imply making it more efficient: only the construction and evolution of it can, in the future, provide such responses, based on the historical experience acquired.

2.1. Matthews and the Sources of Economic Growth

Matthews (1986), while recognizing a certain convergence in modern institutionalist approaches, argues that there are several differences between them. Starting with the very concept of institution, which according to him gravitates around three axes. The first identifies alternative economic institutions as a result of an alternative "property rights" system¹. The second definition associates institutions with conventions or norms of economic behavior, serving as support for the implementation and enforcement of laws. In this approach there is not such a direct link to the economics of transaction costs. In France, a derivation of this conception was developed constituting the denominated "Economy of the Conventions", whose exponent is Olivier Favereau. And a third derivation focuses on contract types, which can be reflected in different forms of authority. These are the reasons why the definition of "institution" assumes multiple connotations².

¹ This notion is particularly important to the followers of Coase (1960), because to them: "... any system of property rights is capable of leading to Pareto-efficiency provided it is a complete system, a complete system meaning one where all rights to all the benefits from all scarce resources are imputed to someone and are tradable; but that a complete system is never possible, because of transaction costs; and that some incomplete system, i.e. some institutions, are more conducive to Pareto-efficiency than others." (Matthews, 1986, p. 904).

² Complementing this definition Matthews (1986, p. 905) emphasizes that: "*The word 'institution' is sometimes used in a quite different sense to mean an organisation. I shall not be using it in that sense, though a case can be made for regarding an organization as consisting of a set of institutions in the sense I am using. The common feature of the four approaches I have enumerated – property rights, conventions, types of contract, and authority – is the concept of institutions as sets of rights and obligations affecting people in their economic lives. (...) A system of institutions can thus be described more or less equivalently in the legal kind of parlance I have been using, as the set of rights and obligations in force; or in the parlance of sociology and social anthropology, as a role-system or status-system; or in the parlance of economics, as defining: (i) what markets exist, (...) and (ii) how economic relations are regulated in areas where markets do not exist.*"

From this conceptual perspective the phenomenon of economic growth is understood as a manifestation of institutional changes³. That is to say, the link between growth and institutions is carried out by the concept of change, which presupposes innovations:

“The analogy between institutional innovations and technical innovations creates a presumption, no more, that institutional change has made a positive contribution to economic growth. The presumption is that in the course of time people have discovered and adopted institutional arrangements that enabled them to cooperate with one another more efficiently than they did before.”
(Matthews, 1986, p. 908).

As the source of economic growth is institutional change, it takes two distinct forms. The idea of optimal Paretian may be present, as long as it merges with evolutionary elements, such as the notion of continuous process and multiple equilibria, which transforms it radically. Matthews concludes that the process of economic, institutional, and technological change is completely different from a process of successive and adaptive improvements that lead to a single situation of convergence with the Paretian. In reality there are a number of factors that hinder such a perspective as the role of the state, non-voluntary interactions, inertia and complexity.

2.2. Zysman: Institutions and Historical Trajectories of Growth

John Zysman’s approach (1994) emphasizes that growth trajectories are historically created from the development of institutionally invented or rooted national trajectories. That is, institutions matter because they determine different trajectories of economic growth in different national environments. There are various ways of organizing market economies, markets are different and there are various types of capitalism.

This approach seeks to associate institutionalism more directly with the economic theory, establishing links between individual choices, contract types and structure of the problems faced by their respective companies and

³ In this passage the referred author defines economic growth in the same manner made by the neoclassic models. In other words, economic growth is an increasing of the per capita production, where is assumed that “... *Pareto-improvement conduces to economic growth so defined.*” (Matthews, 1986, p. 908).

organizations, originating the "historically rooted national institutions". This concept can be treated as a kind of "historical institutionalism", while noting that it poses problems and proposes solutions considering aspects related to *microeconomic-based institutionalism*. In this sense, different historical and institutional conformations design, in the diverse regional contexts, the national systems of innovation that distinguish the technological trajectories. For this reason, institutionalism and evolutionism are phenomena that cannot be understood in an unrelated way.

The starting point of the *Historically Rooted Trajectories of Growth* is the recurring criticism to the growth concept on new theories of endogenous growth. For Zysman, both Romer's argument and Stiglitz's asymmetric information are based on equilibrium assumptions. Instead, evolutionary thinking is inspired by the particular and therefore multiple, national trajectories, which are independent of the equilibrium *steady state*. For this reason, implicit recognition of growth trajectories opens space for institutions to mediate between these trajectories, allowing differentiated forms of economic development to be delineated.

In this context, it is important to mention that the *strategies*, either in an enterprise or government level, exercising decisive influence on innovation, form a suitable environment for new products and processes. This establishes an important point of the micro-pass to the macro, since it is not the government that defines strategies for the firms to implement, but the opposite, because analytically the jump manifests from the particular to the general. In other words, government's ability to deliver results in specific markets does not inevitably create growth advantages in the longer term, and alternatively its failure to generate or create advantages does not inevitably produce disadvantages.

The said argument allows us to conclude that national histories or movements are part of a process of interaction and competition. Hence it is established that: a) different 'market logics' have long-term effects on the type, standard or model, and on the growth rates in each economy; b) the interactional nature of the national market logic between a country and its main trading partners can influence the growth character of each economy; and (c) the market

logic of the dominant national economies may influence the world economy as a whole (Zysman, 1994, p.255).

These conclusions requalify the debate on alternative forms of growth, placing the market and its national specificities as a primary conditioning factor for this objective. However, such an entity (or, rather, institution) should be understood not as a regulating and rationalizing principle of optimal decisions, but as a product of interactions, strategies, decisions regarding the uncertainties that have a positive or negative impact through the performance of an institutional network that ensures sustainability. For this reason, the notion of market is inseparable from the notion of institution, for the former, rather than a product of the latter, is its own manifestation.

According to the model proposed by Zysman, the growth trajectories - whose institutions are generating sources - are due both to the existence of innovation patterns and to technological development. Through specific routines and policies, the terms of economic development are set up⁴. The option that determines who is the loser or the winner becomes part of the problem of cost allocation in industrial changes, involving, regardless of the industrial development model adopted, three aspects that are always present: technical capacity of the States' action in the economy; the establishment of a cost allocation policy for industrial change; and a political process to allow such greetings.

National institutional structures are the result of the historical process of industrial development and political modernization, which is directly associated with the evolutionary argumentation of the "technological trajectories", which take into account essential factors such as the process of diffusion of information and the generation of new ideas.

⁴ For Zysman (1994, p.257), the development process is inherently disordered and painful, where skilled workers or administrators are devalued by the loss of their jobs and income. The political problem is solving who wins and loses with growth. Endless conflicts over growth's gains and pains can interfere with growth by breaking the very process of market adjustment. Strikes in industry, protests by landowners, and lobbies in favor of rules that preserve market positions or favor new industries are expressions of adjustment policies, efforts to determine who wins and loses with growth.

This is the driving idea of the institutional growth approach, since it is not enough to generate investment to create the basis for a growth process. It is necessary to build an adequate institutional environment capable of transforming it into growth, which obviously implies a number of other factors:

“Technology, like market processes, is not disembodied. It develops in communities; it has local roots. The processes of learning that drive its development are shaped by the community and institutional structure, and consequently the technological trajectories can only be defined in reference to particular societies.” (Zysman, 1994, p. 261).

Therefore, the institutions are not neutral and can provide explanations on specific *trajectories*. Thus, a given political and institutional structure induces the formation of a market logic that guides and directs the growth trajectory. Such a finding, even if limited (because it does not explain how the national context affects the firms' strategies, or explains them in an overly broad context that includes everything in the list), reveals some analytical progress.

From the foregoing, it appears that the institutionalist idea is closer to the unorthodox analytical field than to the neoclassical *mainstream*, since its theoretical principles stemmed from the opposition to the equilibrium, optimality and substantive rationality. Any analytical approach considered institutionalist should include *path dependency*, recognize the irreversibly differentiated character of the economic development process and assume that the economic environment involves disputes, antagonisms, conflicts and uncertainty. In this sense, adversity, adaptation and selection are fundamental elements in the definition of business strategies and the trajectories of economic growth.

2.3. North and the Role of Institutional Change

For Douglass North (1990), the key in the field of economic development is to seek the formulation of a still inexistent "theory of economic dynamics". And this lies fundamentally in the understanding and systematization of the process of change⁵. Thus, the trajectories of institutional changes are essential elements

⁵ In his words: "A *theory of economic dynamics* is also crucial for the field of economic development. There is no mystery why the field of development has failed to develop during the five decades since the end of World War II. Neoclassical theory is simply an inappropriate tool to

in the definition of the different forms of economic growth, which reveals a striking similarity with evolutionary thinking:

“If we look back far enough in history, divergence appears to be very simple to explain. (...) However, after ten thousand years of civilization, despite the immense decline in information costs and despite the implications of neoclassical international trade models that would suggest convergence, there is enormous contrast between economics.” (North, 1990, p. 92).

For North, the long-term economic change is a "cumulative result" of many short-term decisions taken by politicians and businessmen, who directly or indirectly (via externalities) determine economic *performance*. However, the degree to which the results are consistent with intentions will reflect the degree to which business models are effectively "true." This is because the models reflect ideas, ideologies and beliefs that are, at best, only partially refined and improved by *feedback* of information about the current legal consequences of legitimately made policies. In other words, the consequences of specific policies are not only uncertain but unpredictable. For this reason, North concludes that:

“Even the most casual inspection of political and economic choices, both throughout history and today, makes clear the wide gap between intentions and outcomes. However, the increasing-returns characteristics of the institutional matrix and the complementary subjective models of the players suggest that although the specific short-run paths are unforeseeable, the overall direction in the long run is both more predictable and more difficult to reverse.” (North, 1990, p. 104).

In his 2005 book, North reinforces the argumentation of the necessity of understanding the process of economic change as the main source of explanation for the phenomena linked to the growth process⁶. In attempting to

analyze and prescribe policies that will induce development. It is concerned with the operation of markets, not with how markets develop. How can one prescribe policies when one doesn't understand how economies develop?” (North, 1994, p. 359).

⁶ In his own words: *“Understanding the process of economic change would enable us to account for the diverse performance of economies, past and present. We would be able to account for the long history of sustained growth of the United States and western Europe, the spectacular rise and demise of the Soviet Union, for the contrasting performances of rapid economic growth of*

unravel the logic of such a complex process, which necessarily must contemplate analytically important institutional aspects of difficult systematization, North once again confronts such necessity with the fragility of the neoclassical instruments, despite their remarkable advances in the quantitative area. In the structure of this book, it is stressed that the process of economic (and institutional) change must necessarily include the following aspects: the uncertainty in a non-ergodic world; Systems of beliefs, culture and cognitive science; Human consciousness and intentionality. These aspects, together, define what he designates as the framework of human interactions that allow the construction of the institutional structure.

In the corresponding chapter, called *The Scaffolds Humans Erect*, it is observed that institutional change follows five propositions that focus on the importance of competitiveness, knowledge, incentive structure and the forms of agents' perception. North's propositions are:

"1. The continuous interaction between institutions and organizations in the economic setting of scarcity and hence competition is the key to institutional change. 2. Competition forces organizations to continually invest in skills and knowledge to survive. The kinds of skills and knowledge individuals and their organizations acquire will shape evolving perceptions about opportunities and hence choices that will incrementally alter institutions. 3. The institutional framework provides the incentives that dictate the kinds of skills and knowledge perceived to have the maximum pay-off. 4. Perceptions are derived from the mental constructs of the players. 5. The economies of scope, complementarities, and network externalities of an institutional matrix make institutional change overwhelmingly incremental and path dependent." (North, 2005, p. 59).

After discussing each of these items, North points out that: *"[t]his characterization of institutional change is a major building block in our construction of an understanding of the process of economic change."* (op. cit., p. 64). This statement reveals important *insight* on the complex relationship

Taiwan and South Korea and the dismal record of sub-Saharan Africa economies, and the contrasting evolution of Latin America and of North America." (North, 2005, p. vii).

institution and economic growth, which has in the institutional change its most telling trait.

3. NELSON'S EVOLUTIONARY CONTRIBUTION

Nelson (2002) argues that the economists who have been contributing the most to the development of evolutionary growth theory over the last twenty years have been motivated by the perception that the neoclassical theory of economic growth, while noting that technological change plays a central role in economic growth, is totally inadequate in the abstract characterization of such a process. More specifically, it is unable to characterize the process of economic growth triggered by technological change, as was done by him with Winter (Nelson and Winter, 1982). In particular, the neoclassical model disregards the fact that efforts for technological advancement are to a large extent "blind" (Nelson, 2002, p.17).

Such a proposition does not imply denying the purpose, the intelligence, and the body of understanding of the attempts to advance in the way of incorporating the technological advance. It is the case of different inventors and R & D teams that have made advances in different areas, whose achievements are virtually impossible to predict, in order to capture the progress inherent to them. The notion that technological advancement occurs through an evolutionary process has been developed independently by scholars working in a variety of disciplines, such as in sociology (Constant, 1980; Bijker, 1995), in the historians of technology (Rosenberg, 1976; Vincenti, 1990; Pretosli, 1992; Mokyr, 1990) as well as by economists interested in modeling (Nelson and Winter, 1982; Metcalfe, 1998; Saviotti, 1996).

This entails recognizing that the process of technological advancement in an evolutionary process leads to the formulation of a growth theory that has a very different structure from that existing in the neoclassical growth theory, both old and new. However, as Nelson points out (2002, p.18): "*However, for the most part evolutionary growth theory, like neoclassical growth theory, has not as yet taken on board the complex institutional structures that are characteristic of modern economies.*"

On the other hand, sophisticated empirical studies on technological advances understand that the pattern and characteristic of such a process has been influenced by the institutional structure that underpins them and that institutions also strongly condition how new technologies are accepted and absorbed by the economic system. This point is clearly demonstrated in studies such as David Landes (*Unbounded Prometheus*, 1970), Christopher Freeman (*The Economics of Industrial Innovation*, 1982) and more recently by the concepts of the national system (or sector) of innovation (Lundvall, 1992; Nelson, 1993; Mowery and Nelson, 1999)⁷.

However, it must be recognized that the contribution of modern evolutionary economists on technological change, concerned with the role of institutions in economic development, has had few interlocutors. For this reason, the contribution of Nelson's article is considered to serve as a kind of bridge between the two said intellectual traditions and to suggest a path where both can follow together (Nelson, 2002, p.18). Such a conjunction for Nelson and for several authors of institutionalist inspiration is not new, for even before the modern neoclassical theory gained its preponderance, most economic analysis was both evolutionary and institutionalist. Strange as this statement may seem to skeptics about this approach:

“Thus, Adam Smith’s analysis concerned with how “the division of labor is limited by the extent of the market” and, in particular, his famous pinmaking example, certainly fits the mold of what I would call evolutionary theorizing about economic change. Indeed, his analysis is very much one about the co-evolution of physical technologies and the organization of work, with the latter, I would argue, very much a notion about “institutions”. In many other places in “The Wealth of Nations”, Smith is expressly concerned with the broader institutional structure of nations, in a way that certainly is consonant with the perspectives of modern institutional economics. Karl Marx of course was both an evolutionary theorist and an institutional theorist. If you consider the broad scan of his writing, so too was Alfred Marshall. Thus,

⁷ Nelson (2002, p. 18) asserts that: “ (...) the notion of a national or a sectoral innovation system, which clearly is an institutional concept, has played a significant role in theorizing about technological advances (see e.g. Lundvall, 1992; Nelson, 1993; Mowery and Nelson, 1999).”

evolutionary growth theorizing that encompasses institutions in an essential way has a long and honorable tradition in economics.” (Nelson, 2002, p. 18 e 19).

In this respect, the hegemonic rise of neoclassical economic theory has remarkably reduced the intellectual scope implicit in such approaches, making evolutionary and institutionalist economic analysis a foreign body of economic theory. The tendency of dissonance in relation to this hegemony, in the sense of consolidating its own trajectory, began to gain space in the United States mainly with the contribution of Commons, which helped to define the American institutional school. His analysis, however, according to Nelson, was not very evolutionary. Neither Coase, who later gave substance to the New Institutional Economy, assumed such character⁸.

Both the so-called New Institutional Economics and the New Evolutionary Economy have different sources and approaches: the first deals with the set of factors that shape and define human interactions (according to Commons) both within and between organizations; and the latter is fundamentally concerned with the process of technological advancement. However, more recently, development in both fields has revealed wide convergence, as the works of Hodgson (1988, 1993) and Langlois (1989) reveal it. Douglass North's work, as we have seen in the previous section, also presents a great theoretical proximity to the evolutionary perspective, notably by emphasizing the way in which institutions are formed and modified. For Nelson:

“Thus, Douglass North (1990), perhaps today’s best known economic “institutionalist”, gradually has adopted an evolutionary perspective regarding how institutions form and change. And, as I noted earlier, many of the scholars who did the early work on the new evolutionary economics recently have become focused on

⁸ Surprisingly and despite the fact that Schumpeter had been critical to the contribution of the Old Institutionalism, due to the absence of a theoretical bases, Nelson states that: *“Schumpeter (1942), whose work arguably has provided the starting point for modern evolutionary economics, is seldom footnoted by self-professed institutionalists, despite the fact that Schumpeter was very much concerned with economic institutions. And Schumpeter’s institutional orientation was ignored, as well, in the early writings of the evolutionary economists who cited Schumpeter as their inspiration.”* (Nelson, 2002, p. 19).

such subjects as the “national innovation systems”, which is an institutional concept par excellence.” (Nelson, 2002, p. 19).

There are strong similarities between the common form of the *core* assumptions and perceptions among institutional economics - at least those belonging to North's school - and the modern evolutionary economics. Hence there are strong reasons why both approaches join forces: both have a central premise that human action and interactions are resulting and result of habits of action and thought. This implies the rejection of the principle of "maximization" as a "process" of characterization of the way men act. There is also the rejection of Friedmanian notion, according to which, if men are not guided by the maximizing calculation, they behave "as if" - the principle of *the as if* - they did. For the institutionalist fields of research, as evolutionaries:

“...patterns of action need to be understood in behavioral terms, with improvements over time being explained as occurring through process of individual and collective learning. For economic evolutionary theorists, this exactly defines the nature of an evolutionary process.” (op. cit., p. 20).

For these reasons, scholars of these two fields have increased their interest in understanding the determinants of economic *performance*, and how that differentiates nations over time. Modern evolutionary theorists focus centrally on what they call "technologies"⁹. Institutional economists focus predominantly on institutions¹⁰. For Nelson, the marriage between them is quite feasible: *“Below I map out what a marriage might look like”* (op. Cit., p. 20). To do so, it is necessary to incorporate some concepts, such as "routines" as a unifying concept. Then he proposes the concept of "social technology" as inherently linked to institutions. And finally, it incorporates institutions into an evolutionary theory of economic growth.

⁹ Nelson (2002, p. 20) affirms that: *“For evolutionary theorists, a country's level of technological competence is seen as the basic factor constraining it's, with technological advance the central driving force behind economic growth. As noted, increasingly evolutionary economists are coming to see “institutions” as molding the technologies used by a society, and technological change itself. However, institutions have not as yet been incorporated into their formal analysis.”*

¹⁰ To Nelson (2002, p. 20): *“Many would be happy to admit that the influence of countries institutions on its ability to master and advance technology is a central way that institutions affect economic performance. However, institutionalists have yet to include technology and technological change explicitly into their formulation. “*

3.1. Why do Routines Matter?

The concept of routine was proposed by Nelson and Winter (1982) as follows: “... *the carrying out of a routine is “programmatic” in nature, and like a program tends largely to be carried out automatically. Like a computer program, our routine concept admits choice within a limited range of alternatives, but channeled choice.*” (Nelson, 2002, p. 20).

Such a concept was built from a firm, company or other organization that develops economic activity and determines how it acts, under particular circumstances with which it is faced. Its *performance* will be determined by its routines and by the routines from other firms which it interacts, including competitors, suppliers and customers. In any given period of time, many of the routines are largely common to all firms in the same area, but sometimes not: in such cases the routines that will provide the “raw material” (*stuff*), which will determine how firms will act in relation to their competitors. The distribution of routines in an economy at any time, determines the overall economic *performance*¹¹. It is observed the importance given to organizations to the economic *performance* of more global point of view, which explains the relevance of microeconomic aspects in relation to the macro level. Moreover, Nelson recognizes that the concept of routine draws the evolutionary economics of institutionalists, because:

“As noted, most of the writing by evolutionary economists has focused on “physical” technologies as routines. However, the notion of a routine fits very well with the conceptualization of many institutional economists, if the concept is turned to characterize standardized patterns of human transaction and interaction more generally. Indeed, if one defines institutions as widely employed “social” technologies, in the sense I will develop shortly, it is easy

¹¹ In his words: “*Under evolutionary economic theory, economic growth is caused by changes in the distribution of operative routines, associated both with the creation of superior new routines, and the increasingly widespread use of superior routines and the abandonment of inferior ones. The latter can occur through the relative expansion of organizations that do well, or the adoption of better techniques by organizations that had been using less good ones, or both.*” (Nelson, 2002, p. 20).

to take institutions on board as a component of an evolutionary theory of economic growth.' (Nelson, 2002, p. 21).

Among the main characteristics of "productive routines" are: a collection of procedures, which, taken together, result in a predictable and specifiable result; Complex routines can almost always be analytically unfolded in a series of subroutines (for example, to make a cake, one takes into account subroutines such as preparing the dough, mixing it and cooking it; which involves flour, sugar and stove); So virtually all complex routines are linked to others that must be implemented in a way that makes them possible, or incapacitating them to create value.

Another key aspect of productive routines is that while the operation of a particular routine by an individual competitor or organization generally involves certain idiosyncratic elements, its core usually includes elements that are quite similar to each other, and that operate in the same context. As an example, he cites that the ingredients and equipment used by reasonably specialized bakers are basically the same as those used by other specialized confectioners.

There are two reasons that the productive routines are spread by those who are specialized in that "art": the first results of the cumulative contributions of many parts, often operating for several generations (deviating means high risk, and even if the *payoffs* can be considerable, there is a greater chance of failure); the second is that a particular routine tends to be part of a system of routines. This systemic aspect forces a certain generality of ways of doing particular things.

3.2. Social Technology and Institutions

The concept of social technology is proposed in Nelson and Sampat (2001), and built under the assumption that the routines involve two aspects: a recipe that is anonymous with reference to any division of labor and division of labor *plus* a coordination mode. In the first case, it is included what scholars often have in mind when referring to "physical technologies." And in the second, there are "social technologies," which refer to what scholars have in mind when referring to institutions. According to Nelson (2002, page 22), North and Wallis (1994) proposed a similar distinction. Broadly speaking, social technologies can

define and be defined as the rules of the game, or, in an allusion to Williamson's proposition, as a "mode of governance." In terms of transaction costs, this concept provides ways to obtain low transaction costs. Such a concept is broad enough to incorporate the forms of organization of economic activity within particular organizations, such as the form M. In this way, markets define and are defined by "social technologies", incorporating procedures used by choice and collective action.

This formulation naturally induces one to perceive institutions not as "constraints" of behavior, but as alternative ways of obtaining things when human cooperation is necessary. Nelson (2002, p.22) concludes that:

"(...) to view institutions as "constraints" on behavior is analogous to seeing prevailing physical technologies as constraints. A productive social technology (an institution) or a physical technology is like a paved road across a swamp. To say that the location of the prevailing road is a constraint on getting across is basically to miss the point. Without a road, getting across would be impossible, or at least much harder." (p. 22).

3.3. Institutions in an Economic Growth Theory

The question of how institutions conform to a theory of economic growth depends not only on how we define it but on other theoretical aspects, such as understanding how the conception of institution as "social technologies" fits evolutionary theories of economic growth. In this sense, the technological advance resumes its fundamental importance, with special weight within the evolutionary approach:

"(...) the reason is that, while neo-classical theory sees economic actors as facing a spacious choice set, including possible actions that they never have taken before, within they can choose with confidence and competence, evolutionary theory sees economic actors as at any time bound by the limited range of routines they have mastered. Each of these has only a small range of choice. Further, the learning of new routines by actors is a time consuming, costly, and risky thing. Thus while neo-classical growth theory sees considerable economic growth as possible simply by "moving along the production function, in evolutionary

theory there are no easy ways to come to master new things.”
(Nelson, 2002, p. 23).

In other terms, from an evolutionary perspective, economic growth must be understood as a result of the progressive introduction of new technologies, associated with increasingly higher levels of labor productivity, the ability to produce new and better goods and services, which are progressively Capital-intensive. In this formulation, new "institutions" and social technologies appear as changes in the modes of interaction - new modes of work organization, new types of markets, new laws, new forms of collective action - that are called, like new technologies, to bring new economic uses: *“In turn, the institutional structure at any time has a profound effect on, and reflects, the technologies that are in use, and which are being developed.”* (Nelson, 2002, p. 23).

Therefore, the concept of institutions as "social technologies," the language of the routines to describe them, and the theory outlined above about how institutions and institutional change emerge with the advancement of physical technologies in the process of economic growth have become quite powerful notions, approaching the analysis of the form of action of the referred "social technologies".

4. FINAL CONSIDERATIONS

The generality and breadth of the propositions about institutional arrangements for economic growth reinforce the need to better explore the theoretical links that flow from them, which will necessarily materialize in specific recipes and propositions. In other words, the prescriptions of the economic policies adopted in the various world economies invariably include "institutional designs" that consider aspects relatively close to one of the institutional chains mentioned in item 2, namely, the Old Institutionalism, New Institutional Economy and Neo-Institutionalism. The fad from NIE's success, especially since the Nobel Prize for Economics was awarded to Ronald Coase in 1991 and Douglass North in 1993, has led its analysis to assume an increasingly propositional character in terms of institutional fundamentals to raise the conditions of economic growth and stability in the various economies. The same is true, but more timid with the neo-institutionalist contributions, which roughly advocate theoretical proposals that

address the technological advances, innovativeness, the *catching up*, the Keynesian redistributive policies and the institutions socially and historically linked (*embedded*) to their respective regional realities.

In general, it is expected that the more heterodox currents lean to Veblen's Old Institutionalism, and consequently to the modern approaches close to the neo-institutionalism, whereas the more orthodox will be inclined to a "institutional vision" closer to NIE.

However, theoretical advances on institutions and economic growth cannot claim to originate from a single approach. Such an option is far from feasible, if understood by the adoption of an attitude of analytical exclusion. It is believed that, on the contrary, the process of understanding the change and economic growth must be built through the permanent exercise of criticism and reflection, by continuously proposing new concepts and theories. Some progress in this direction seems definitive. For example, Matthews emphasized that the institutional environment, despite the importance of the changes, does not approach or tends to reproduce, in a manner consistent with an optimal Pareto. Zysman explained the link between institutional change, economic growth and the historical character of this determination as result of the microeconomic supremacy on an evolutionary environment, on the other aspects, which would ensure the dynamics of that process. And for North, institutions matter because institutional change takes a more decisive role than technological changes. It also stressed that the countries' economic *performance* is directly linked to standard institutional changes regionally located. Nelson, in this sense, has been seeing the founding of a new agenda for the development of an alternative theory of economic growth involving, necessarily, the opening to the institutional aspects mentioned, along with the notion of routines and what he calls "social technology." The recognition of the importance of these observations should be incorporated into any analysis centered on the proposition of different institutional arrangements.

Finally we must emphasize that these elements are completely out of the discussion about economic growth and development strategies in Brazil. Such omission and neglect will impose a high price in the future when the country

rediscovers that the advance of the referred process is inconceivable without the theoretical inclusion of the institutions.

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