A Road Map for the Guidebook

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New institutional economics (NIE) is the outcome of an evolutionary process, not a planned refoundation. Consequently, unlike neo-classical economics, it is not an integrated theory based on a set of common hypotheses, but, rather, a combination of bricks coming from different traditions. NIE scholars quote great minds as contrasted as Kenneth Arrow and Herbert Simon, Friedrich von Hayek, and Armen Alchian, or Mancur Olson and Sidney Winter. They borrow concepts from, and contribute to, many literatures and traditions, among which law and economics, organization theory, industrial organization, economic history, development economics, and public economics are not least. NIE is, nevertheless, built around a backbone of some fundamental and original contributions proposed, in particular, by Ronald Coase (1937, 1960, 1988), Douglass North (1990, 2005), and Oliver Williamson (1975, 1985, 1996). Together these contributions are not fully consistent, and many debates opposed the three scholars quoted above. They are, however, complementary in the sense that they fit together to compose not a general theory, but, rather, a frame proposing a new way of analyzing economic phenomena.

To NIE scholars, (economic) agents use resources and play games on the basis of rights of decision. Those rights are defined, allocated, and reallocated by various types of devices, in particular contracts, organizations, and institutions. Analyzing these devices highlights a new level of interactions among agents seeking to influence the way the rules of the games are built and evolve. These games are played either on a very local level (in bilateral interactions), or on a global level (in interactions encompassing all human beings), and on many intermediary levels between the two: communities, industries, countries, regions, and so on. The strength of NIE lies in its proposal to analyze governance and coordination in all sets of social arrangements: a vision in terms of design and enforcement of systems of rights (of decision, of use, of access) which results in the implementation of orders allowing agents to coordinate when using or producing resources.

Another powerful characteristic of NIE is its evolutionary perspective. This is a consequence of human nature and of the complexity of social systems composed of numerous interacting agents whose behavior cannot be fully anticipated (partly because their rationality is bounded, partly because they are innovators). Thus, the games mentioned above are not played by agents benefiting from perfect information and infinite computation capabilities enabling them to optimize and establish, in one shot, the optimal system of rights. The design of institutional systems is not based on optimization computation but on trial and error, on the implementation of solutions that should be recognized as imperfect and temporary (hence the concept of "remediability"). In such a context it is essential to take into account the management of changes, together with the processes of evolution.

This vision has two important methodological consequences. First, NIE is built from an applied perspective. Because scholars believe they should learn from facts and because of the complexity of the problems they are dealing with NIE leads scholars to focus on issues, and their research is strongly oriented toward decision making. Second, it makes NIE "open-minded." NIE is open to the "importation" of any contribution which may be relevant to dealing with the above-mentioned issues. For example, scholars as different as Georges Akerlof, Jean-Jacques Laffont, Jean Tirole, Reinhard Selten, Vernon Smith, and Ariel Rubinstein were involved in conferences held by the International Society for New Institutional Economics (ISNIE). More fundamentally, scholars who trained in different traditions and are recognized as key contributors to other domains have made distinguished contributions to the field. This is the case, for example, for Masahiko Aoki (2001) or Avihash Dixit (2005).[1] Also, NIE relies strongly on multidisciplinarity to benefit from fertilization from political sciences, anthropology, sociology, management sciences, and law in particular.

This openness of NIE results in a certain degree of heterogeneity. The literature pools a wide set of very different contributions which include in-depth case studies (with important benchmarks by Coase and Williamson), historical analysis (North, Greif, Weingast), econometric tests (Joskow, Masten), experiments (Smith, Fehr), and modeling (Kreps, Milgrom, Hart), and so forth. As a result, although rich at first sight, the contributions in NIE taken as a whole may appear inconsistent and lacking in identity (Ménard 2004). This heterogeneity is further strengthened because a growing body of research continues to explore how institutions evolve, how they could be enhanced through better design, and how they affect human behavior and economic performances. However, this eclectism is serving a clearly established

scientific program aimed at identifying stylized facts, highlighting general causal regularities, building theoretical logic, and verifying and confronting theoretical propositions.

This complex nature of NIE explains why we felt a "guidebook" could be useful. It aims to clarify the unity and diversity of the field, to highlight established knowledge and point out future developments. The book seeks to provide the reader with a guide to link up the many developments carried out in the field. And this introductory "road map" aims to highlight the relationship between the chapters.

In his introduction to the book, Paul Joskow provides an historical overview of how NIE emerged in response to the shortcomings of traditional micro- and macro-economic analyses. He insists that NIE brought essential issues, which were neglected or not sufficiently taken into account owing to a lack of analytical tools, to the attention of the economic profession and decision makers. This resulted in some original and major achievements. However, the main success of NIE has occurred because issues originally highlighted by NIE scholars (such as coordination costs, design, and allocation of rights of decision, credibility of rules and commitments, complex multi-layer games among stakeholders, and many more) now lie at the heart of most developments of economics.

This book is divided into six parts. It starts in Part I by analyzing the origins of NIE, based on contributions focussing on coordination means – organizations, contracts, and institutions – and neglected by mainstream economics until the 1980s, which originally only focussed on market mechanisms. Part II focusses on the methodology of institutional analysis. The peculiarities of the performance of case studies, econometric tests, experiments, and modeling are discussed. Parts III–V consider the development of NIE in various fields of applications. Part III deals with issues related to management, in particular strategic reasoning and organizational design. Part IV deals with the organization of industries. Part V studies the complex issue of the design of institutional systems, which is a major policy tool, whether a matter of regulating business activities or promoting development and growth, or dealing with many other policies (education, crime, and so on). Taking stock of progress – whilst recognizing the shortcomings – of current developments in the economics of institutions, Part VI comprises three chapters which highlight some of the research directions to be explored in the future.

Part I: Foundations

NIE started with studies of three categories of coordination devices: organizations; contracts; and institutions. In each case, the main

challenge was to understand the very nature of these phenomena by explaining how they affect the performance of economic activities and how they are designed. In many respects these devices are different – organizations are collective and consciously designed, contracts are bilateral and consciously designed, and institutions are collective and self-organized – which leads to different analyses, refers to different traditions, and relates to different issues. However, they all frame the behavior of economic agents and influence the results of their interactions. Economists have been progressively paying attention to these devices to gain better theoretical foundations for analyzing economic issues and also to benefit from a more consistent theory of coordination in a decentralized economy. They progressively understood that the characteristics and limits of human beings explain why we need institutions and organizations. Organizations permit coordination and cooperation, which allow human beings to exceed the limit of their individual capabilities, in particular their limited cognitive capabilities.

Historically, however, NIE did not start with concerted scientific initiatives. Several waves of applied and analytical developments, driven by specific issues, led to the development of three main bodies of literature, initially relatively separated from each other. One is the economics of the firm and organizations. This started in the 1930s (with major development in the 1950s) owing to the development of large firms and their strong influence on the economics of markets and industries. Another is the economics of contracts initiated in the 1970s (with major development in the 1980s and 1990s). Both lines of thought led to a more consistent framework for studying coordination in a decentralized economy and addressing essential policy issues (Brousseau and Glachant 2002). The final literature is the economics of institutions initiated in the 1990s and inspired by the need to manage development and transition processes.[2] Following this sequence, our book starts by pointing out the contribution of NIE to the economics of firms, contracts, and institutions. Rather than following the path of the history of economic thinking, the four chapters in this section highlight the specificities of the NIE approach when it deals with its core subjects.

Chapter 1 on the theories of the firm, by Pierre Garrouste and Stéphane Saussier, starts by pointing out that most of the fundamental questions (but not all the answers) structuring the economics of the firm were already raised in the contribution by Ronald Coase in 1937. This outstanding scholar delivered perfect insights into the nature of the firm. At the same time, these insights explain why building a theory of the firm is inherently difficult. Everything depends on the fact that organizations and markets are, at the same time, both substitutes and

complements. First, the firm is sometimes an alternative mode of coordination which enables the same activity as markets – that is, enabling transactions among individual agents providing or benefiting from services – as proved by the divestiture of large firms and permanent movement of mergers and acquisition. However, it is sometimes an inherently different mode of coordination, as proved by the need to separate certain collections of resources (physical assets, financial means, and knowledge), from markets in order to generate new activities and build new capabilities, (e.g. the internalization of start-ups, the movement of alliances, and these large innovations are often linked to the emergence of large firms). Second, hierarchical coordination is a way to avoid the drawbacks of independent decision makers driven by their individual interests. This separation from the logic of market and competition creates principal agent-type incentive issues. The employer (she), as residual claimant, needs to extract information from the employee (her agent) and to incite him to act according to her will. Incentive mechanisms are thus created by reintroducing market-like mechanisms within the firms either by transmitting market pressures (e.g. bonuses indexed on sales) or by organizing competition (e.g. rank order tournaments). This double face of the firm highlights a key task for new institutional analysis: to identify interdependencies between alternative modes of coordination as complementary components of economic and social systems.

The NIE approach to contracting highlights such interdependencies (in Chapter 2, by Éric Brousseau). Since early developments in the economics of contracting centered on a fully decentralized economy, scholars focussed on understanding pure bilateral tools for coordination. This resulted in the theory of incentives which analyze self-enforcing coordination mechanisms. It also defines highly sophisticated mechanisms that would be too costly to implement in the real world where decision making is onorous. NIE, and also law and economics, propose an alternative vision based on a more applied approach. Individuals have a bounded rationality and are already embedded in an institutional framework. The latter empowers them to interact with the others whilst limiting their ability to do so. Institutions indeed grant them property rights and collective rules framing the exercise of these rights, and with coordination means (starting from marketplaces facilitating meetings between traders or dispute-resolution devices ensuring enforcement of commitments). Contracting allows agents to redesign and transfer their rights between one another. Those contracts are embedded in the institutional framework – social customs, laws, judiciary, and so forth – simply because the agents' ability to contract and the cost of contracting

depends on it. The institutional environment is therefore the primary factor for agents' contractual choices. The latter are based on trade-offs between the costs and benefits of relying on alternative coordination mechanisms either designed by agents (contracts) or provided by society (institutions). These trade-offs lead to combine mechanisms which complete with each other, leading to the idea that coordination is ensured by multi-level governance – and the consequent need to analyze institutional and contractual coordination together.

However, building an economics of institutions forces a change of vision from that of institutions as the result of rational design. Although the purpose of NIE is to apply rational choice to the understanding of coordination devices, John Nye and Benito Arruñada explain in their stimulating contributions (in chapters 3 and 4, respectively) why it is misleading to consider institutional systems as the result either of efficient coordination decisions aimed at optimizing the collective economic outcome, or as the result of a process of selection allowing more economically efficient social arrangements to surpass alternatives.

Because social systems are made up of heterogeneous individuals interacting through a wide diversity of coordination mechanisms, which change and whose combination evolves with the passing of time, in Chapter 3 John Nye recommends analyzing them as biological systems rather than mechanical devices. This puts the focus on the diversity of the processes of evolution, since efficiency is not synonymous with the ability to survive. As pointed out in biology, but also in history, what is "efficient" at a given point of time may evolve the wrong way, and inefficient but evolving or invading arrangements may surpass "efficient" ones. However, biological analogies have their own limits when it comes to understanding the dynamics of institutions since the interacting units in a social system are capable of reflexive analysis, which leads to innovation. Thus, on the one hand, to economize on cognition capabilities – and on coordination costs – agents may rely on routines and beliefs to coordinate. This is one of the major factors of institutional stability and the slow pace of change. On the other hand, since they are able to analyze the shortcomings of a given equilibrium, and if some specific conditions arise, they are sometimes able to switch to a new equilibrium. This is why endogenous radical and rapid changes may occur in social systems. Consequently, the complex interplay between trends to stability and trends to change calls for in-depth analysis at the frontier of several social sciences: anthropology, sociology, politics, history, and so on.

This is the kind of exercise proposed by Benito Arruñada in Chapter 4. He explores the features of institutions on the basis of very long-term historical analysis, cognitive sciences, and anthropology.

Institutions have to be understood as tools built by humanity to coordinate, despite the inability of human beings to be perfectly rational. They succeeded in domesticating nature thanks to technology. In doing so they dramatically changed the material and social conditions of their lives, and they did it at a pace that totally surpassed the biological pace of evolution, in particular the capability of the brain to evolve. Institutions must therefore be understood as tools built to overcome the cognitive limits of human beings. They constrain behavior to allow individuals to behave – individually and collectively – more rationally than they could do otherwise. They are able to do this because institutions are the products of a long process of trial and error. However, since this process is not perfect, since formal institutions are designed and run by individuals with bounded rationality, and since technological and social changes are constantly accelerating, institutions are never neither fully adapted to coordination needs, nor are they fully efficient.

Part II: Methodology

The economics of institutions deals with complex issues owing to the complexity of social systems. Whilst rooted in economics, it calls for analytical innovations to better grasp the specificities of dynamic social interactions, the games played by agents around rules they might decide to comply with or not, complementarities among different types of coordination devices, and so on. This is why NIE relies on a combination of several methodologies, whose usefulness and specificity are discussed in the second part of the guide.

Being a scientific movement NIE aims to identify and control causal relationships. Because the devices and issues dealt with are numerous, and because there are many differentiating factors among them, one size does not fit all and several methodologies have to be combined.

Of course mathematical modeling is a key tool. It is a way of making progress since modeling allows for the systematic checking of logical consistency and tracking of chains of cause and consequence. However, in its current state of development, the economics of institutions still has to identify the regularities and the causal relationships to be examined to check whether the burgeoning theories fit the facts. Indeed, rational choice analysis led to the development of a wide corpus of recommendations on supposedly "efficient" rules and coordination devices. However, most of these propositions are based on oversimplified assumptions, on biased equilibrium analysis, and on overstatic reasoning. It is thus important to assess whether these unavoidable assumptions are

satisfactory heuristics or not, and, if not, how they should be reshaped. To make progress various methodologies must be combined.

An initial stage is identifying the most relevant regularities to be explained – the "stylized facts" – and carrying out a preliminary test of the complex interrelation of causal relationships. This calls for the collection of wide sets of qualitative and quantitative data. This may be done through the systematic performance of case studies – which are of value in themselves, and which also gain value as they are accumulated by the scientific community. In Chapter 5, Lee Alston illustrates how, and in what conditions, narratives may become insightful from an analytical point of view. It is indeed often forgotten that the revolutionary and fundamental contributions by one of the founding fathers of the discipline, Ronald Coase, are all based on the accumulation of careful observations of how real-world problems actually arise and are dealt with.

A second stage comes when stylized facts are identified. Then, economic modeling, and especially that carried out by game theory, is a good way of exploring their rationalization. Thierry Pénard explains, in Chapter 8, why this type of analysis fits well with the analysis of institutional systems because we are dealing with interacting agents playing rules. Moreover, the flexibility of game theory makes it a useful tool for analyzing issues that are fundamental when dealing with institutions such as credibility or the convergence of equilibria. Path-breaking contributions, such as those by Aoki or Dixit, demonstrate how game theory is a fundamental fuel for developing institutional economics.

Third, to control possible explanations, econometrics is a vital tool since it allows for the control of various alternative explanations and for the impact of multiple factors that interrelate (interdependence tests). Michael Sykuta details, in Chapter 6, the specificities of the constraints of econometrics with regards institutions. First, we process qualitative rather than quantitative data. Second, since the issues raised by institutional scholars are relatively new, most statistical systems are not capable of providing scholars with relevant data. Efforts are therefore oriented not only toward processing existing data, but also towards the development of new data sources. Although widescale systematic data collections would be needed, most current knowledge relies on ad hoc, incomplete, and partial databases, raising concerns of replicability and insufficient controllability of results. Despite these boundaries, great progress has been made and further progress is expected because of the increase in attention paid by decision makers to institutional drivers of economics performances. Indeed, increasing means and efforts are being dedicated to measuring institutions, their outcomes, and to improving methodologies (*see also* the contribution by Stefan Voigt; Chapter 17 in

Part V). However, although plenty of work remains to be done, past research has already provided valuable knowledge.

Fourth, since we are dealing with human behavior, the complexity of which is still poorly taken into account in the core of economic theories, experimental economics is one way of improving our knowledge. It reveals how "agents" behave in socio-economic interaction interactions, with the scientist in a position to control the parameters of the rules of the game to check the effects of some of them. Moreover, laboratories allow the actual decision made by agents, and sometimes their motivations, to be observed. In Chapter 7, Stéphane Robin and Carine Staropoli provide the reader with insights into the possibilities offered.

So, Part II of the book explains how developments in the economics of institutions should be expected after the presentation of new theories. The latter will be drawn from the accumulation of narratives aimed at identifying stylized facts combined with studies inspired by game theory reasoning. They should result in testable propositions that would have to be more systematically tested through econometric efforts – conditioned by the development of relevant databases – and the design of ad hoc experiments.

Part III: Strategy and Management

In Part III of the book the unit of analysis is the firm, where many of the "strategic" decisions are organizational in nature. Firms choose how they organize their internalized activities and how they coordinate with others within alliances, partnerships, and networks.

It is generally assumed that NIE, and especially transaction cost economics (TCE), offer a simplistic analysis whereby simple optimal static solutions meet transaction situations. Transaction attributes would call for a single optimal governance mode. On the contrary, the accumulation of results and recent developments show that this approach first takes stock of the need for dynamic adaptations and therefore focusses on managing change; second, it reveals how governance relies on the complex combination of various means which cannot always be "aligned" and managed efficiently; third, that organizational performances are strongly dependent upon the institutional context in which alternative organizational tools are implemented.

TCE cannot be static. The problem is not to minimize transaction costs in a static perspective because (i) the strategic environment of a firm is mobile and (ii) costs are generated by organizational changes, while (iii) lack of adaptability associated to routinization generates costs (attributable to [i]). This gives rise to three insights developed in Chapter 9, by Jackson Nickerson and Lyda Bigelow, on the state of the

art in organization and strategy. First, organizational design refers to the ability to minimize dynamic misalignments (because of [i]; see Williamson, 1991a, 1991b). Second, one of the advantages of hierarchy as compared to market is its inertia in an unstable context (because of [ii]). Third, organizational vacillation (among alternative designs) may be optimal in a stable environment (because of [iii]).

TCE develops the idea that governance is a complex matter since it results from the combination of various mechanisms. This can be interpreted in two ways.

First, analysis of the discrete governance mechanism reveals that problems as "simple" as incentive issues call for a combination of mechanisms to deal with vertical and horizontal interdependencies (as pointed out by Emmanuel Raynaud in Chapter 11 on the case of governance of distribution channels). The incentives approach is reinforced by the knowledge perspective, which points out the perils and virtues of authority in managing knowledge. Market supplants hierarchies to solve cognitive problems in some cases, but the reverse is true in alternative contexts (Jackson Nickerson and Lyda Bigelow; Chapter 9). As a result, there is no one best way to organize firms, either from a transaction or from a problem-solving perspective. This is why firms have to rely on hybrid modes of governance and on a combination of hierarchy, market, and networked long-term cooperative relationships to manage complex problems raised by innovation, fragmented markets, and transaction chains. Hierarchies and hybrids may be considered complementary tools, either because they enable the management of different types of transactions (as developed in Chapter 10 by Joanne Oxley and Brian Silverman, on inter-firm alliances and management of innovation) or because hybrid governance allows reliance on complementarities between modes of governance in managing a given type of transaction (Emmanuel Raynaud; Chapter 11).

Second, within a firm various levels and problems of coordination have to be managed, from shop floor to shareholder and manager relationships, and including research and development (R&D) management and coordination with suppliers. Interdependencies of governance exist among these levels, together with coordination problems, which might explain why governance solutions fail to meet governance needs at the transaction level perfectly.

Finally, TCE points out that any reasoning on the choice of a governance mode should be contextualized institutionally. First, the institutional environment influences the relative efficiency of alternative organizational arrangements. Indeed, the quality of property rights, the design of laws, mutual trust among agents, and so on, are the