

&& Part V: Preliminary to the Study of Institutional Dynamics

&Chapter 14 Is Institutional Dynamics a Historical Process?

- 14.1 The Influence of Institutions' Implications on the Direction of Institutional Change
- 14.2 Institutional Change as Functional Adjustment
- 14.3 Institutional Origin and Institutional Dynamics: Formal and Informal Institutions
- 14.4 Institutional Path-Dependence.
- 14.5 Institutions-as-an-Equilibria

Concluding Remarks

&& Part V: Preliminary to the Study of Institutional Dynamics

The discussion, so far, did not touch upon the issue of institutional origin, change, and development over time. It concentrates on the study of institutions as equilibrium, steady state beliefs, norms, behavior, and organizations. Once a particular institution established itself, they it is regenerated over time. This part is concerned with studying institutional dynamics.

Studying institutional dynamics involves addressing two questions. First, do institutions influence their own rate of change? In other words, do institutions influence the extent to which they continue or not to influence behavior in changing situations and do institutions lead to their own demise? Second, do past institutions influence the direction of institutional change? Or do new institutions reflect environmental conditions? In short, is institutional dynamics a historical process in which past institutions influence the rate and direction of institutional change?

Scholars who answer these questions to the affirmative, namely, those who argue that institutional dynamics is a historical process in which past institutions influence the rate and direction of institutional change anchor their position in ample historical and empirical support.¹ This common view has been expressed, for example, by Douglass North who claimed that “the present and the future are connected to the past by the continuity of a society’s institutions” (1990: vii) and by Paul David (1994: 206) who argued that “institutions are the carriers of history.”

But why is this the case and how can we study it? Institutional dynamics had been examined from various perspectives each of which highlighted various aspects of this complex issue. But none of the existing perspectives adequately address the above two questions. Particularly deficient in addressing this issue is the perspective on institutions which considers them as either equilibria or as reflecting the interests of the agents who established them. This perspective, common in economics and among rational choices institutionalists in political science implies that institutional dynamics is not a historical process: institutional changes have an exogenous origin and past institutions have no influence on new ones. As noted by Weingast (1996: 180) “institutions are the endogenous variable, adjusting as exogenous circumstances change.”

¹Reference to be added.

Other perspectives on institutions concentrated on institutional dynamics. The path dependent literature highlighted mechanisms contributing to institutional persistence in changing environment. But it has difficulties in accounting of the influence of past institutions on the direction of institutional change. Historical institutionalism in political science stressed that institutions reflects underlying historical processes but in doing so has to give up on the analytical power of using equilibrium analysis. Within economics, evolutionary dynamics and habit formation provided a framework to study institutional dynamic as processes. (E.g., Hodgson 1998). Applying such line of analysis, however, crucially depends on very strong assumptions and hence it so far failed to provide a framework suitable to empirically address the question of institutional dynamics.

Can the above framework for institutional analysis be extended to study institutions as a historical process in which past institutions influence the rate and direction of institutional change? This possibility is explored in following chapters. The following chapter, however, is confined to briefly presents the merit and limitation of various existing approaches for the study of the dynamics of economic institutions.

&Chapter 14 Is Institutional Dynamics a Historical Process?

This chapter reviews the insights of various lines of analysis regarding the institutional dynamics. At the same time, the chapter emphasizes that each of these lines of argument was able to account for some, but not all the questions related to institutional dynamics as a historical process. The discussion first presents the argument that past institutions influence the direction of institutional change through their impact on various stock variables such as wealth level and distribution, power, demographic, and capacities. While important, this argument is orthogonal to the one that past institutions in and of themselves influence the rate and direction of institutional change. The second section considers the functional explanations for institutional dynamics which argues that institutions change when the environment change in a manner that undermine their function or when new knowledge is made available. While insightful, all institutional changes in this perspective are a response to exogenous changes.

The third section touches upon the attempt to account for the influence of past institutions on the direction of institutional change based on their origins. Informal institutions that emerge spontaneously change in a different rate than formal ones that are established intentionally. The “stickiness” of informal institutions influence the direction of institutional change. This perspective, however, has a limited ability to account for the rate of institutional change. The fourth section presents arguments regarding why institutions exhibit path-dependent, namely, in particular, why institutions tend to persist in changing environment. This perspective only marginally touches upon the issue of endogenous institutional change or why past institutions influence the direction of institutional change. The fifth section presents the deficiencies of the purely game-theoretic approach to institutions to account for either institutional change or why past institutions influence the direction of institutional change.

14.1 The Influence of Institutions’ *Implications* on the Direction of Institutional Change

Past institutions influence the direction of institutional change through their impact on various stock variables. Institutions have implications in addition to generating behavior in the transactions they govern. Economists have emphasized past institutions’ implications on wealth distribution, demography, information, capabilities, physical and human capital, technology, and knowledge. Political scientists have emphasized implications on, for example, political

connections and interest groups while sociologists have emphasized implications on, for example, personal familiarity and social networks.²

Common to all these implications is that they are on stock variables, namely, variables that transcend the conditions that led to their emergence. Because of this property, such variables are part of the initial condition in the process of institutional change.³ Even if, for example, the institution that had generated them ceases to exist, these stock variables do not instantaneously vanish. They thus can and do constitute part of the initial conditions in processes leading to new institutions. Because this argument is so intuitive, I will only briefly elaborate on it by describing the implications of past institutions on capabilities, knowledge, information, and interest groups and how these implications direct institutional change.

The capabilities of individuals and organizations - as well as their core capacities, tacit knowledge, and communication codes - are fixed in the short run. In the long run, however, people respond to the incentive existing institutions imply and invest in particular capabilities. (E.g., North 1981.) The capabilities implied by past institutions are stock variables and properties of individuals and organizations. Thus, they would prevail, at least for a while, even if the institution that gave rise to them ceased to be self-enforcing and would thereby be part, even in this situation, of the initial conditions in the process of institutional change.

The details of past institutions also cause knowledge to evolve in a particular way. The relationships between past institutions and the particularities of new knowledge are clearer in the case of institutions that govern the creation of new knowledge. The European University, for example, presents the researcher with very different incentives regarding developing new knowledge than does the *madrassah* - the Islamic center of higher education. Once particular knowledge is generated, however, it can endure and provide part of the initial conditions in the process of institutional change.

But institutions that are not focused on the creation of new knowledge also influence its accumulation by generating particular sequences of events. To illustrate such influence, consider again Greif, Milgrom, and Weingast (1994), who examined the relationship between the

² E.g., North 1990; Rothstein 1996; Granovetter 2000.

³ Stock variables as contrasted to flow variables.

expansion of trade and the ability of medieval rulers to commit to respect alien merchants' property rights. That analysis examined the possible equilibrium level of a ruler's commitment to respecting alien merchants' property rights, given various organizations. These organizations determined the extent to which merchants could have committed to take various collective actions. The analysis indicates that organizational changes reflect the knowledge implied by existing institutions. Changes occurred as adaptations to the accumulated experience yield by existing institutions, which revealed the limitations of existing institutions.

This adaptive process is well reflected in the history of the German Hansa that emerged in northern Europe during the late medieval period. Initially, coordination of actions among German merchants following abuse of their rights was provided by a local organization encompassing only the merchants who were present in the trade center where the abuse had occurred. The growth of trade that this institution enabled, however, exposed its limitations: it could not support trade expansion beyond a relatively low level and hence abuses did occur. These abuses motivated the merchants to transfer the function of coordinating their responses to an inter-city organizations, the German Hansa that was more effective in doing so. The knowledge generated by a past institution had provided the foundations for the creation of a new one.

Similarly, there are many examples illustrating how and why past institutions influence the generation of information in a society, and why this information, in turn, influence the direction of institutional change. For example, Hoffman et. al. (1998) have documented how the role of French notaries, as part of an institution for contract enforcement in France prior to the French Revolution, provided them with abundant information about individuals' creditworthiness. This information enabled them later on to also become a part of an institution governing credit transactions in which they acted as intermediaries.⁴ Past institutions thus influence the nature and level of various stock variables in the economy, thereby exerting influence on the direction of institutional change.

The literature that considers institutions as rules also emphasized that rules can lead to

⁴ For an analysis of the endogenous creation of information and how it influences institutional change in modern economies, see Dinc 1999.

the emergence of interest groups that would have an interest in maintaining the rules that gave them rise. (Olson 1982.) North (1990: 73) has elaborated on the nature and implications of such processes while referring to such interest groups as ‘organizations.’ Organizations are “purposive entities designed by their creators to maximize wealth, income, or other objectives defined by the opportunities afforded by the institutional structure of the society. In the course of perusing those objectives, organizations incrementally alter the institutional structure.”

14.2 Institutional Change as Functional Adjustment

It is common to explain institutions - defined as either rules, pattern of behavior, contracts, or organizations - based on their function. For North (1990), institutions reduce uncertainty in human interactions. Much more common, however are the assertions that institutions can be explained based on their efficiency or distributional consequences. For Ellickson (1991), for example, social norms within a group evolves in a manner that maximizes the wealth of the group. Rules of behavior and conventions are mechanisms to coordinate behavior in a manner that is socially beneficial, while rules are also designed to endow particular policy outcomes with durability.⁵ Economic organizations such as credit bureau or firms enabled economic activities that otherwise would not be possible. The legal rules within the Common Law emerge for and change to promote efficiency (Posner 1986). Such institutions either emerge spontaneously or designed intentionally but in either case, they promote economic efficiency.

An equivalent line of research argues that institutions emerge to serve another function, namely, to influence distribution. For Olson (1982), as in the Old Institutionalism, institutions reflect the self-serving interests of interest groups in the society. They gather resources to be used to influence the political decision making in their favor. Knight (1992) make a similar argument regarding the distributive function functions of institutions. For him as well institutions as rules aimed at benefitting a particular group. But he does not concentrate on institutions whose origin is in the politics. Instead he argues that diverse, informal institutions such as the division of labor within the family reflect bargaining process in which each party

⁵ See reference in Weingast 1996.

attempt to lead to an outcome most beneficial to him or her.

That the details and even the origin of various institutions reflect their efficiency and distributional implications, the deficiency of functional explanations are well known. For a functional account to be complete, it has to demonstrate the causal links between the function that an institution fulfills and its emergence. But even ignoring this issue, the functional approach implies that institutions are the endogenous variables changing as exogenous situation change. In other words, institutional change follows an exogenous change - institutions do not exert an independent influence on their rate of change. Furthermore, if one asserts that an institution exists to fulfill a function this assertion implies that past institutions do not influence the direction of change. Once an institution no longer fulfills the function it served in the past, it would be replaced by one that does.

14.3 Institutional Origin and Institutional Dynamics: Formal and Informal Institutions

A prominent line of analysis attempts to account for how institutions whose origin can be accounted for by the function they served nevertheless influence the direction of institutional change. This line of analysis differentiates between formal institutions and informal institutions. Formal institutions such as laws and regulations specified and enforced by the state. Informal institutions in this context are considered to be as informal rules of behavior - custom, taboos, traditions - or social structures such as communities and business associations. Their distinguishing characteristic is that they emerge through a spontaneous, unintentional process. They are the result of human actions but not of human design.

Because formal institutions originated from the state, they can be changed by fiat. Informal institutions, however, evolve spontaneously and hence can not. Hence, the argument goes informal institutions that had been crystallized in the past restrict the direction of formal institutional change. Past informal rules are, de facto, part of the initial conditions that restrict the direction of formal institutional change. Past institutions influence the direction of institutional change because informal institutions that were crystallized in the past influence can not be changed by fiat. (E.g., North 1990, 1991; Williamson 2000; Aoki 2001; Mantzavinos 2001.)

The inability to alter informal institutions by fiat, clearly influence to change outcomes

by intentionally altering formal institution. Hence, informal institutions influence the direction of institutional change. Examples are abound. When the Muslim ruler of Sicily decreed an increase in custom paid by the Maghribi traders around the mid eleventh century, they responded by building on their communal organization to collectively ceasing trading in Sicily. Facing the loss of trade, the ruler reduced the custom again. When England declared general conscription for the first time ever during World War I, the law exempted Irish from this duty. The anti-English norms held by the Irish implied that the cost of enforcing conscription and effective military service were too high. (Levi 1997.)

Nevertheless, the dichotomy between formal and informal institutions does not provide a useful framework to study institutional dynamics as a historical process. First and foremost, this dichotomy does not shed any light on the issue of how institutions influence the rate of institutional change. Second, claiming that the stickiness of informal institutions is the main channel through which past institutions influence the direction of institutional change is unsatisfactory for several reasons. First, the taxonomy between informal and formal in and of itself is incomplete. There are many institutions that neither established by the state nor emerged spontaneously. Consider, for example, the rules of the Catholic church still influencing, to one degree or another the behavior of about 1 billion people. Rules declared by Church are intentionally designed. They are a product of a centralized, deliberate, and intentional decision making. Yet, they are not being enforced by the coercive power of the state. In addition to religious rules, the taxonomy ignores rules made by the endless leaders, prophets, councils of the elders, chieftains of tribes, the heads of the village and the many other bodies for collective decision making whose rules were followed for reasons other than fear of coercive power.

The second reason that asserting that the stickiness of informal institutions is the only reason for that past institutions influence on the direction of institutional change is unsatisfactory because it begs the question. Asserting the informal institutions are the source of inflexibility in a society's institution does not explain, as noted for example by Williamson (2000), why informal institutions are sticky. Arguing that informal institutions are slow to change is not understanding why this is the case.

Third, it is not clear whether, as a practical matter, the distinction between formal and informal institutions is meaningful because institutions often contain aspects of both (Greif

1992). Consider, for example, Clay's (1997) analysis of contract enforcement institutions that facilitated trade in Mexican California. The long-distance American traders did not use the Mexican formal legal system. They were organized in a coalition similar to the one that governed agency relationships among the Maghribi traders. A trader who cheated another was subject to exclusion from trade relationships with all the other American merchants.⁶ At the same time, the code of law that determined what action constituted "cheating" was a body of formal law, the Common Law. Informal contract enforcement was coordinated by a formal set of legal rules.

Within the Mexican communities where the American traders bought and sold goods, however, a formal judge nominated by the state was responsible for law and order. But given the low population density in California and the vast extent of the Mexican Empire imply that the judge was not backed by the coercive power of the state. There was no effective police force. The judge thus relied on social pressure within the small communities to enforce his judgement. The effectiveness of formal contract enforcement depended on informal sanctions. Neither of these contract enforcement institutions could provide the contract enforcement required for exchange between members of the Mexican communities and the American traders. Such contract enforcement was achieved by American traders who settled within the Mexican communities. In each community, an American trader married a Mexican women, spoke Spanish at home, and raised his children as Catholic. He had access to the legal enforcement within the community while, at the same time, was a member of the American traders' coalition. This enabled and motivated him to ensure that his community's members will respect their contractual obligations toward the American traders who sold them goods on credit.⁷

Last but not least, the formal/informal taxonomy of institutions places the process through which institutions emerge as the main factor which determines whether a particular institution will have a lasting influence. Informal institutions that emerge spontaneously change

⁶ The details of this punishment were, however, different for reasons explored by Clay 1997.

⁷ For other interesting analyses of institutions which emphasize the inter-related nature of their formal and informal elements, see Moriguchi 1998 regarding labor organization in US and Japan and Yung 2001 regarding public finance in China.

slowly while formal institutions that are established intentionally can be changed rapidly. But there are many examples that this is not the case. Informal rules sometimes emerge and decay surprisingly fast. Consider languages, perhaps the canonical example of informal institution. But the manipulation of languages by states and groups engaged in state formation are abundant: Hebrew and Catalan have been revived for such purposes in the twenty century. Both languages were intentionally resurrected in relatively short time. African nations are still engaged in language planning (Laitin 1998). Chinese Pidgin English emerged within less than three decades after 1664 to facilitate trade between Chinese and the English speaking people. Similarly, a long tradition in the study of the Law claims that informal legal code tend to rapidly change in response to changing conditions while state mandated law is slow to adjust.⁸ Other informal institutions such as social norms and social groups, also exhibit, at time, tremendous fluidity. The centuries old Chinese tradition of tying women's feet vanishes in a remarkably short time. Social groups based on common foreign language vanished in the US, by and large, within a generation following immigration to the US.

14.4 Institutional Path-Dependence.

The literature on institutional path-dependence represents another approach to study how institutions influence their rate of change but it has relatively little to say about how institutions influence their rate of change. Specifically, the focus of this literature is why particular institutions, once established, would not change in changing environment. The persistence of institutions, potentially even inefficient institutions is the focus of this literature. While the merit of this important line of analysis is beyond doubt, it neglects, by and large, to address the issue of limit of institutional persistence, endogenous institutional change, and the influence of past institutions on the direction of institutional change.⁹

The concept of path-dependence in economics has been developed by David (1986) and

⁸ Language: Coulmas 1992: 156. Law: Besnon 1989.

⁹ These aspects of the path-dependence argument have been noticed by many. See for example, Knight 1992.

Arthur (1989).¹⁰ Both reject the a-historical view inherent in the most common interpretations of neo-classical economics that “the present shape of things can best be explained by considering their function and particularly their function in some future state of the world” (David, 1994: 206). In contrast, the past-dependence literature argues that economic outcomes depend on the process through which they emerge. It links “the present state of arrangements with some originating context or set of circumstances and interpolates some sequence of connecting events that allow the hand of the past to exert a continuing influence upon the shape of the present” (p. 206).

The past-dependence literature initially focused on technological changes and argued that initial conditions and chance events are likely to influence selection over alternative technologies. Small historical events can lead even economically inferior technology to be selected and once prevailed it is difficult to change.¹¹ There is a “locked in” on this technology. Under what conditions this would be the case? Brian (1988) elaborates on four conditions:

1. large setup of fixed cost which give advantage to the technology that had been selected over alternative ones.
2. Learning effects, which improve the prevailing technology and hence making it more efficient.
3. Coordination or network externalities effects, which makes selecting the existing technology more attractive to new users relative to alternative technologies.
4. Adaptive expectations where increase use of the existing technology further enhance the beliefs that this technology will be used in the future.

To illustrate the importance of these conditions, suppose that there are two competing technologies A and B which have similar although not necessarily identical efficiency attributes

¹⁰ It has been subject to a heated debate, see the exchange between, for example, David 1986, 1997; and Liebowitz and Margolis 1995.

¹¹ David 1994 has summarized the concept of path-dependence: “a process whose outcomes are path dependent is ‘non-ergodic’: systems processing this property, if they remain structurally unperturbed, are unable to shake off the effects of past events and do not have a limiting, invariant probability distribution that is continuous over the entire state space. In other words, they are drawn into the neighborhoods of one or another of several possible ‘attractors’, selections among the later being made, typically, by the persisting consequences of some aleatory and transient conditions, that prevailed early in the history of the process” (p. 2080).

presently.¹² One of these technologies, say technology B will, however, be more efficient if selected and improved upon through learning effects. Suppose, however, that for some random reason technology A was initially selected due, for example, to oversight, mistake, or the particular interest of those who could influence the initial selection, etc. Sunk cost and learning effect now imply that a switch to technology B is less likely because technology A has now efficiency advantage over technology B (although had B been selected initially, it would have been even more efficient). In addition, coordination effect, network externalities, and adaptive expectations will further induce decision-makers to adopt technology A give it a further advantage over technology B. Due to small initial events, technological development can embarked on a particular path and “lock in” on a particular technology.

We have already seen (chapter 7) one possible source of institutional path-dependent: once particular cultural beliefs had established themselves, they can regenerate themselves because once each individual expect others to follow a particular self-enforcing behavior, it is that person’s best response to follow it as well thereby leading others to act alike.

Lewis (1969: 39, 41-2) elaboration on this phenomena in the special case of coordination games highlights the possibly random origin of the particular expectations that prevail. “It does not matter *why* coordination was achieved at analogous equilibria in the previous cases. Even if it had happened by luck, we could still follow the precedent set... each new action in conformity to the regularity adds to our experience of general conformity. Our experience of general conformity in the past leads us, by force of precedent, to expect a like conformity in the future. And our expectation of future conformity is a reason to go on conforming, since to conform if others do is to achieve a coordination equilibrium and to satisfy one’s own preferences. And so it goes - we’re here because we’re here because we’re here because we’re here. Once the process gets started, we have a metastable, self-perpetuating system of preferences, expectations, and actions capable of persisting indefinitely.”

North (1990, 94-104) has elaborated on the reason that path-dependence is likely to prevail with respect to institutions as well. He defines institutions as rules and argues that the

¹² These conditions are sufficient but not necessary and not all of them have to hold for path-dependence to prevail.

above conditions usually holds with respect to them. There is large “initial [sunk] setup costs when institutions are created de novo as was the U.S. Constitution in 1787” and there are “significant learning effects for organizations [such as firms] that arise in consequence of the opportunity set provided by” the prevailing rules (p. 95). Similarly, “there will be coordination effects directly via contracts with other organization and indirectly by induced investment through the polity in complementary activities. ... Adaptive expectations occur because increased prevalence of contracting based on a specific institution will reduce uncertainties about the permanence of this rule” (p. 95).

Similarly, David (1994) who objects the functionalist view of institutional change, presented two additional arguments regarding why history matters in the evolution of organization. The first rests on Arrow’s (1974: 53-6) observation that for organizations to take advantage of the large amount of information that can acquire, requires them to be able to communicate and process this information. Communication and processing, in turn, is facilitated by shared ‘code’ or language of communication. This code is a sunk investment, often specific to the organization and its members, and it tends to be modify only slowly. The particularities of this code, in turn, determine what information the organization is more efficient in acquiring and transmitting. Hence, once established a code tends to have a permanent influence on the behavior and activities an organization’s members would take.

The second argument “involves the implications of strong complementarity or interrelatedness - and the consequent necessity of achieving consistency or compatibility - among constituent elements of complex human organizations” (p. 209). The basic idea is that once a particular organization that serves a particular function emerge subsequent organizations aimed at serving other function will emerge in a compatible manner. The existing organization influence the cost and benefit of adopting other institutions. I will return to this important issue in the next chapters, it begs the question at hand. If one assumes that institutions evolve over time in a compatible manner, one has assumed that previous organizations matter. The question why is this the case.¹³

¹³ David advances the vague argument that compatibility reflects that organizations and institutions that “fit together with others more logically and so made the principles or ‘culture’ of the institution easier to understand and to transmit to new members” (p. 213).

Another interesting line of argument regarding institutional path-dependence was developed in institutional sociology.¹⁴ Institutions embody shared cultural understandings of the way the world works. These shared cultural understandings (shared script, cognition, or interpretive frames) constrain the new institutions that those who can establish them can conceive.

Both the economic and the sociological perspectives on institutional path dependence provide important insights regarding why institutions, once established, tend to reproduce themselves and direct the details of new institutions. Both perspectives highlight positive feedbacks from existing institutions to forces that contribute to the persistence of existing institutions in changing situations. The economic perspective particularly highlights the importance of coordination effects, learning effects, and sunk investments in rules formation, codes, and organizations.

The idea of path-dependence is important for understanding institutional persistence. The framework provided by path-dependence, however, is ill suited to study other aspects of institutional dynamics. Institutional change has to come from some exogenous shock: path-dependence does not provide any framework for understanding how past institutions influence the rate of institutional change. Furthermore, it defines institutions in such a manner that once institutions do change - due to an exogenous change in the environment - past institutions have no influence on the direction of institutional change. This point is easiest to make with respect to the view of institutions as rules. Institutional path-dependence implies that once particular rules have been established, they are not likely to be changed. But if the situation is such that they are changed, then past rules are of no relevance. By gone is by gone. Similarly, if one considers institutions as equilibrium-beliefs, then the path-dependence perspective implies nothing regarding the influence of beliefs that are no longer an equilibrium on future institutions.

14.5 Institutions-as-an-Equilibria

The equilibrium view of institutions that places beliefs at their center contributes to our

¹⁴ See Zucker 1983, 1991; Meyer and Rowen 1991; DiMaggio and Powell 1991; Dobbin 1994; Scott 1995.

understanding of path-dependence. But considering institutions through the lens provided by game theory, does not seem to be a promising starting point for examining institutional dynamics. Clearly, if an environmental, exogenous change causes an institution to no longer be self-enforcing, it will be intentionally changed or altered through unintentional experimentation and mistakes. But does game theory, in and of itself, facilitates the study of how institutions influence the rate and direction of institutional? The well known answer is that it does not.

To see why this is the case, consider again the “purely” game theoretic view of institutions, namely, the view of institutions as “an equilibrium in the underlying game, and different institutional structures correspond to different equilibria” (Calvert 1995: 59). But if institutions are a set of beliefs that constitute a game-theoretic equilibrium outcome, change has to have an exogenous origin. As long as the expected behavior is a steady state equilibrium, each and every individual is motivated to follow the behavior associated with it. It does not matter if these equilibrium beliefs were intentionally “created” through human actions or they “simply evolve over time,” (North 1990: 4) reflecting an unintentional experimentation and learning process. In either case, however, once particular beliefs established themselves they would not be changed unless some exogenous parameter changed rendering the equilibrium obsolete.

Similarly, examining institutions only through the lens provided by game theory implies a limited ability to study how past institutions influenced the *direction* of institutional change. Indeed, the term “institutional dynamics” is a contradiction-in-terms when game theory is used to study institutions. Equilibrium strategies specify behavior in all (technologically) possible contingencies, reflecting the actions of the players and nature. The game is actually played, therefore according to the equilibrium strategy that each player adopts at the “beginning of time,” or when he enters the game. In classical game theory, players’ present and future behavior are thus manifestations of this predetermined strategy. If we accept this premise, all behavior is forward looking although it may be conditional on events that transpired in the past.

This conclusion reflects the unrealistic assumption made in game-theoretic analysis that individuals have unbounded rationality and are thus able to a priori develop a strategy for every possible contingency. Savage (1954: 16), while working on the foundations of statistics, noted that “carried to its logical extreme, the ‘look before you leap’ principle demands that one

envisage every conceivable policy for the government of his whole life... in its most minute details, in the light of the vast number of unknown states of the world, and decide here and now on one policy. This is utterly ridiculous ... because the task implied in making such a decision is not even remotely resembled by human possibility.” Individuals, as Simon (1961) has noted, are more likely to be intentionally rational, but within limits.

The position taken here toward the tension implied by individuals’ deliberately rational behavior on the one hand, and their limited ability to act rationally, is that they act rationally within the confines imposed by their limited ability and knowledge. In general, while individuals try to follow the proverb “look before you leap,” at times they have to follow, “you can cross the bridge when you come to it.”¹⁵ This position, implicitly or explicitly, is common to various rational-choice approaches of studying contracts, organizations, and institutions. It is, for practical purposes, functionally equivalent to the position that there is a cost to finding, computing, and specifying future contingencies and actions, and the position that decision-makers will sufficiently discount low-probability events or those that are expected to occur very far in the future.¹⁶

But if we assume that unexpected contingencies can transpire, game theory, in and of itself, does not expose how past institutions influence the direction of institutional change. As a matter of fact, game theory assumes that an institution that emerges to accommodate a new situation does not have any relationship to previous institutions. To see why this is the case, consider the following example. The repeated transaction relevant to members of a society can be presented as a game $\Gamma(\alpha)$, where α is a parameter capturing an exogenous feature of the situation. This game, for example, can be the rules-of-the-road game and the related institution would therefore be the cultural beliefs regarding which side of the road individuals will be driving on.

Game theory restricts the set of permissible institutions to be those associated with the feasible equilibria in a game. In this case, the two (pure strategy or EES) equilibria are that the players will drive on either the right or the left. In other words, two institutions are possible:

¹⁵ Savage 1954 inspired the use of these proverbs.

¹⁶ See, for example, Williamson 1985; Hart 1995.

everyone expects the others to drive on the right (left) and hence everyone indeed drives of the right (left). The parameter α in this game can reflect the underlying technology measuring the speed of the vehicles and hence the cost imposed by an accident. Now suppose that this parameter had exogenously and unexpectedly shifted from α to β . The structure of the game has not changed and the same equilibrium set and hence institutions are still permissible.

Common sense implies that members of this society will continue to drive on the right. Indeed, I would bet on it! Game theory in this case, however, does not capture common sense. It restricts the set of permissible institutions - either prior or after the parametric change - to an equilibrium, but it does not impose any restriction the relationship between the institutions before and after the change.

More generally, as discussed in chapter 11, game theory reveals that a generic property of strategic situations is that many equilibrium concepts are plausible, and for a given equilibrium concept, multiple equilibria often exist. In other words, multiple self-enforcing pattern of behavior can commonly establish themselves in the same situation. At the same time, game theory provides a limited guide to which behavior would prevail. It restricts the set of admissible responses in new situations to an equilibrium, but does not require that past behavior have any relationship with behavior in new situations. The equilibrium strategies in the post-change situation are equally likely to be the same as those in the pre-change situation (if they are in the equilibrium set) or any other equilibrium strategies.

Hence, if one accepts the rationality assumption of game theory, the term “institutional dynamics” has no meaning. If one accepts that unexpected situations can transpire, as is reasonable to do, game theory provides a limited guide to how people will behavior in such situations. How do people behavior in new strategic situations? Who do they select how to behave in new situations?

Ever since Schelling (1960) has raised this issue of equilibrium selection in multiple equilibria game, it has been recognized that people use information that is not captured in the formal presentation of a game to coordinate on a particular equilibrium. Such information as the names of various strategies - right, up, or green - may have some commonly understood “focal” properties. Similarly, the distribution or efficiency of a particular equilibrium may provide such focal point as well as some characteristics of the players themselves such as their age. A reason

that game theoretic presentation of strategic interactions abstracts away from such focal points is that “the “focalness” of various strategies depends on the players’ culture and past experience” (Fudenberg and Tirole 1993: 20).¹⁷ History matters.

But because the aim of game theory is to provide a deductive guide for analyzing behavior, it abstracts away from historically specific elements that influence equilibrium selection. It does indicate, however, that history matter. But that history matters in selecting self-enforcing behavior in new situations, does not indicate, in and of itself, if past institutions constitute part of this history and if they do, why and how they influence the direction of institutional change.

Evolutionary and learning game theory does not provide a useful framework to study how institutions influence the rate and direction of institutional change either. At the core of such analyses is the assumption that some random mutations or experimentation occurs each period. (Henceforth, mutations.) Such random mutations may be with respect to any ‘trait’ that individuals can have such behavior, preference, capacities, etc. But for simplicity of presentation I will discuss here the trait of ‘following a particular behavior.’ Mutation or experimentation thus takes the form of having some individuals taking actions that are not taken by others. An equilibrium in such analyses, as we discussed in chapter 4, is a situation in which, in the absence of mutations, no individual individuals can do better than following the existing pattern of behavior. When mutations, particularly by a group of individuals are introduced, however, this may no longer be the case. Mutations can cause past behavior not to be an equilibrium and lead to a new equilibrium behavior. Such transition from one equilibrium to another can occur for several reasons.

Because a group of individuals change their behavior at the same time, they can, for example, have a higher average payoff than those who continue to follow the old pattern of behavior. Those who adopted the new behavior can, for example, have a higher payoff when they interact with each other and no lower payoff when they interact with those who still follow the old pattern of behavior. In this case, they have an evolutionary advantage and through imitation and faster reproduction the followers of the new behavior will overrun those who

¹⁷ For a discussion of related experimental evidence see Hagel and Roth 1995: 10-13, 255 ff.

follow the old behavior. This mechanism is implicit in analysis that, similar to Sugden (1989), adopt the EES equilibrium concept. Other analyses considered explicitly the nature of the exogenous random shocks that generate deviants and explored more rigorously when, why, and how one equilibrium will be replaced by another.¹⁸

While insightful, such evolutionary analyses are of only limited applicability regarding the question of interest here: how do institutions influence their own rate and direction of change. These analyses assume that the processes of experimentation, mutation, or learning are part of the environment exogenous to the population under study. Such processes influence the distribution of individuals following a particular behavior in the population. But if these processes are exogenous they say nothing about whether, why, and how such processes are influenced by existing institutions. Conceptually, changes are due to events that are exogenous to the institutions under study. More generally, the evolutionary models rests on very strong assumptions regarding the agents' action sets and rationality. Agents usually can neither communicate to coordinate their behavior, nor agree or contract on any transfer of resources among them, or create organizations that will change the rules of the game relevant to each of them by providing information, coordination, or enforcement.¹⁹

The question of interest here, however, is the influence of past institutions on the rate and direction of change and not the influence of random, exogenous events or exogenous environment on the rate of institutional change. How do institutions make such experimentation and mutation more or less likely to occur and how existing institutions influence the impact of a given exogenous, random event?

Concluding Remarks

While the contributions of the above lines of research of institutional dynamics is beyond doubt, none of them comprehensively address the issue under consideration. Why is, and how to study, institutional dynamics as a historical process in which past institutions influence the rate

¹⁸ See, for example, Kandori, et. al. 1993; Young 1998; Greif 1996a.

¹⁹ For a criticism in the same spirit but aimed at disputing the optimality of evolutionary processes in human societies, see Stiglitz 1994.

and direction of institutional change?

The challenge is to try to hold the stick in both ends. Given the intuitive appeal, the analytical strength, and the empirical contributions of studying institutions from the perspective provided by equilibrium analysis, it would be unfortunate to scrap it. At the same time, unless it would be enriched by the ability to study institutions as a process, we give up on much which is of interest. The need to bridge the gap between the equilibrium perspective and the process perspective of institutions has particular been recognized in the study of political institutions. (E.g., Thelen 1999.)

Can we do better than thinking of institutional dynamics as reflecting exogenous historical processes? Can we extend the framework developed in part I to study endogenous institutional dynamics - namely, how institutional dynamics is a historical process in which past institutions influence the rate and direction of their change? Can we delineate the way various historical processes manifest themselves in institutions and how the details of these institutions further influence endogenous institutional dynamics?

Achieving this goal requires an explicit definition of institutions which highlights the importance of defining institutions visa-via a transaction and recognizing that an institution is not an entity but is a system composed of various institutional element. This latter point, and an explicit definition of institutions is the topic of the next part.