



OESTERREICHISCHE NATIONALBANK

E U R O S Y S T E M

WORKSHOPS

Proceedings of OeNB Workshops

*The Transformation of the
European Financial System
Where Do We Go?
Where Should We Go?*

June 20, 2003

No. 1

Taking Uncertainty Seriously: Complementarity as a Moving Target

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In the following I will discuss a few conceptual issues related to the notion of complementarity between economic institutions. My brief notes are not meant to debunk the concept. Quite to the contrary, they are a plea for more sophistication in its use. My central claim is that current usage of the concept makes too demanding assumptions on the rationality of the actors designing and enacting economic institutions. Moreover, it suggests too static a view of institutions. In both respects, it seems necessary to rethink and make explicit the micro-foundations of the concept of complementarity, grounding it in both a realistic theory of rational action on the one hand and a dynamic theory of social institutions on the other.

After a short definitional exercise necessary to set the stage, I will first explore a number of real-world implications of the notion of complementarity from both a practical and a theoretical perspective. While these are often treated as empirical impurities that can be neglected for theoretical convenience, one does so only at the peril of abstracting from essential properties of social systems as well as from the experience of actors inside them. My main point (I.) is that the extent to which one institution complements another is fundamentally uncertain. In fact complementarity must be established, or “worked out”, in both a cognitive and a practical sense, over time and experientially by actors with limited foresight and no more than patchy knowledge of the causal textures in which they move. Following this I will argue (II.) that the institutions supposed to be made complementary by institutional design are themselves by their very nature only vaguely defined and, in addition, far from static. Those acting within them are therefore forced to absorb a great deal of uncertainty, which in turn both *constrains and allows* them continuously to redefine the institutions within which they act, in the process of enacting them. Next I wish to make the point (III.) that environmental demands on the performance of social and economic systems are not static either and in fact change in often unpredictable ways, which adds to the uncertainty of actors as to when there is and is not institutional complementarity. I will close (IV.) with brief remarks on what a redefined concept of complementarity might look like.

I begin with definitions of my two core concepts, *complementarity* and

institution. In an effort that is still under way, Robert Boyer and I are trying to produce a glossary of key terms in the debate on institutional complementarity in economic systems and on the “variety of capitalism”. Our definition of complementarity is straightforward:

Complementarity is a relationship between at least two elements. Element E' is complementary to element E if its presence enhances the performance of E... More generally, complementarity of E' for E requires that E' assumes certain properties that match the properties of E, in the sense that the simultaneous presence of such properties in E and E' increases the performance of E... Complementarity may be mutual, i.e., E may be complementary to E' where E' is at the same time complementary to E... Complementarity may also involve more than two elements interacting in a “virtuous circle” of mutual enhancement.

Note, however, that whether or not complementarity obtains is dependent upon a system's *performance*, which in turn hinges, not just on the structure and behavior of the system itself, but also on the demands made upon it by its environment.

Complementarity must be distinguished from both *compatibility* and *coherence*. Two elements are compatible if they *do not interfere* with each other's performance or stability. Complementarity presupposes compatibility, but not all that is compatible is necessarily complementary – although elements that are incompatible undermine each other and are therefore by definition not complementary. Coherence, in turn, means structural similarity, homology, or isomorphism. A set of institutions is coherent if its elements have important properties in common. This may be a result of diffusion, of social norms, of a common social repertoire of “ways of doing things”, or the like. Coherence may make for smoother relations between the units of a system, for example like in nineteenth century Germany where public and private (industrial) bureaucracies were similarly structured and inspired by the same ethos.¹ But coherence as such, while it should normally ensure compatibility, cannot guarantee complementarity. Where the common tradition in a society is one of clientelism, nepotism, corruption, lawlessness and low trust, organizations and institutions may be isomorphic but their interaction will be far from mutually supportive.

Institutions are even trickier to define. For the present purpose I would like to

¹ Another example is Japanese labor and capital markets that, as Ronald Dore has pointed out, are both characterized by low liquidity due to lasting commitment of resources.

emphasize the following properties, again quoting from the Boyer and Streeck glossary:

Institutions consist of normatively founded and collectively enforced rights and obligations... Institutions may be ... regarded as regimes for specific sets of actors and activities, for which they represent both constraints and opportunities. As actors almost always have a degree of choice as to whether or not to make use of a given institution or comply with its rules, institutions can only condition but cannot determine action. Moreover, as the rules that make up an institution must be applied to a wide variety of – changing – circumstances, they are not once and for all unambiguously clear and in fact require permanent interpretation and reinterpretation. This is one of the reasons why institutions continuously undergo change.

Our notion of institutions, that is to say, rejects an “oversocialized” view of human actors and human action, allowing actors a basic capacity to distance themselves from institutionalized normative demands. It also draws attention to the fundamental tension between normative and factual realities, with respect to action itself and to the settings in which it takes place. As a consequence institutions appear as essentially *dynamic*, their dynamism being rooted in their *necessarily imperfect enactment*: due, among other things, to the inevitable inconclusiveness of rules and norms as such; to ongoing efforts of rational actors to try out and establish new interpretations of pertinent norms that better fit their interests; and to the need to apply institutionalized rules to a wide variety of specific circumstances that their makers could not possibly have anticipated.

I.

How can public policy concerned with the design of a national institution, for example a country’s financial system, make the complementarity of that institution with other national institutions its objective? Note that this question takes the view, and thereby presupposes the existence, of an institutional designer powerful enough, purposively and effectively, to shape social arrangements. It also assumes this designer to be interested in improving collective performance, not just in maximizing his own benefits. Both assumptions underlie much of the vast public policy literature and are almost never questioned by it.

In the present context, it suffices to say that the concept of institution that I am proposing does allow in principle for purposive intervention as it

distinguishes between “regime makers” and “regime takers”. Moreover, for the sake of argument, I will treat as unproblematic the assumption that regime makers are public-spirited and interested in “problem-solving”, although in reality this is far from assured. Rather than the possibility or the benevolence of effective institutional design, I want to discuss its capacity to know with reasonable certainty whether and to what extent institutions will complement each other. I believe that this capacity is low and, when it comes to assessing the effects of interactions between institutions, neither theory nor practical experience can provide regime makers with more than crude rules of thumb (“rough heuristics”). The reasons for this, I argue, lie in the cognitive limitations of human actors as well as in essential characteristics of social systems.; In fact, I believe the two are very closely related.²

To simplify, I will limit myself to a list of elementary observations on the problem of institutional complementarity as it confronts political decision-makers and other actors in political economy.

(1) From the perspective of institutional decision-makers acting in the real world, complementarity presents itself as *a matter of degree*. The question is to which being one of the *extent* to which a given institution is or is not complementary to another. This reflects the fact that the changes institution-builders can possibly hope to make are normally only incremental changes. Throwing out a non-complementary institution and replacing it with a complementary one is almost always beyond the powers of even the most powerful institutional designer. Thus, in the real world, the choice is likely to be not between a bank-based and a market-based financial system, where one of which fits a given institutional environment, while the other doesn't. Real institutional design choices will be about a *gradual improvement* in the functional fit between an institution and its context, as when market elements are introduced in a bank-based financial system to increase its responsiveness to international capital flows.

(2) If institutional complementarity is a matter of degree, the implication is that it is not a matter of life and death and that economic systems can survive with different degrees of it. Put otherwise, within the limited range of choices

² Basic for the sort of theory this invokes are, of course, authors like Hayek and Simon. If one takes them as seriously as one must, one finds it hard to construe observed complementarity between institutions as a result of rational-intentional action, be it by public policy-makers or by firms interested in enhancing their own performance. In particular it becomes difficult to offer, as does much of the current “varieties of capitalism” literature, a rational choice-type teleological theory of action as a micro-foundation for an economic-functional theory of society.

available to institution-builders, political-economic systems are rather robust with respect to alternative institutional designs, and systems that opt for or mistakenly end up with less rather than more complementarity do not have to fear immediate collapse. The offshoot is that there is no clear and simple criterion for complementarity. While all-or-nothing complementarity would be easy to determine, degrees of complementarity are not. Real-world institutional design decisions are therefore subject to fundamental cognitive limitations and must be made without the computational algorithms that would be required for maximization of utilities.

(3) In a global economy it may suggest itself to judge the complementarity of national institutions by their economic performance in comparison with that of competing countries. Indeed as long as institutional arrangements “work” in the everyday comparison organized by competitive international markets, questions of institutional design do not normally arise. However, the logic governing institutional adjustment to international competition is not one of maximizing but of “satisficing”, one that relies on relative rather than absolute performance. Thus, institutions that are in fact quite suboptimal may be adopted or defended, simply because all other institutions in the competition are even less optimal, for all sorts of contingent reasons. Lacking an absolute standard of optimal performance, what is desirable, is, and only can be, defined by practical aspirations reflecting, not a system’s optimal possibilities, but its experience in its relations with a limited number of real-world competitors.

(4) What is more, not only do we have to replace optimal with satisfactory performance as the economic criterion for institutional design, but unsatisfactory performance of a national political economy, however measured, cannot easily be attributed to institutional deficiencies, not to mention frictions between specific institutions caused by a lack of complementarity. Since the number of comparable political economies competing in the real world is inevitably smaller than the number of variables that might potentially affect their relative performance, causal textures remain uncertain and ambiguous, not only in practice but also in theory. This opens up ample space for cognitive disagreement, political contestation, ideological fixations, and the robust survival of all sorts of causal myths on the relationship between institutional arrangements and the economy. Further contributing to this is the long time lag between an institutional design decision and its effects on performance becoming first observable, which in extreme cases may take decades (consider, for example, the introduction of more market-driven elements in the training system of a nonliberal market economy). Moreover, the idiosyncratic character of each system – its status as a complex “historical individual” overdetermined by a practically endless number of causal factors – makes the most appropriate comparison for a given institutional design the alternative designs that were not

chosen when it was adopted. But, of course, the results of comparing an existing structure to a set of counterfactuals can only be highly uncertain and contestable.

(5) Time affects complementarity in yet another way. In the real world decisions, including those on institutional design, must be made under the pressure of deadlines that are usually shorter than necessary what would be needed for a full exploration of their possible efficiency effects. As a result other objectives than efficiency may take precedence. In particular imperatives of power seem to be easier to satisfy than imperatives of efficiency as the effects of power-oriented actions are more concentrated and more easily measured than the efficiency effects of alternative institutional designs. Whether or not, I have maintained my power is easier to observe, and its utility is more obvious, than whether I have contributed to a more efficient allocation of resources.

(6) Moreover, if complementarity between institutions is desirable, rather than incurring the costs of adapting one's own institution to presumed complementarity requirements, one may want to wait for those controlling the other institutions to make the first move. Playing a game of chicken is encouraged by uncertainty about the causal texture of the real world. Indeed given the high complexity of historical social systems, their fundamentally unpredictable future and their long response time, actors may rightly find it rational to limit themselves to pursuing sectoral or organizational subgoals, leaving it to the future to work out how "their" institutions may complement others. Gambling and waiting for as yet unknown ways to be found to reconcile a preferred institutional design with an environment with which it may seem incompatible at present, may actually be a quite rational strategy for actors confronting high uncertainty.

(7) Social action, including that of the purposeful, problem-solving sort, always has multiple effects. While some of them may be functional in terms of what an actor wants to achieve, others will be dysfunctional in one way or other. Indeed in social life, as we learn from Robert Merton, every function tends to come with a dysfunction, which makes for endemic tensions and contradictions in social systems. Theories that explain institutional continuity by a search for "increasing returns" assume that systems will grow increasingly identical with themselves as rational actors invest in ever higher complementarity between institutional domains. But this may be an illusion, in part because actors often do not know what would in fact be complementary, but also because complementarity with one institution may be incompatible with complementarity with another. For example, employment protection and peaceful industrial relations may be necessary complements to the product strategies of firms competing on high product quality and dependent on worker cooperation in productivity improvement. If employment problems arise, using the social security system for early retirement of redundant workers would then suggest itself as a functional response. The more widely that response is

adopted, however, the more destructive it may become of other objectives such as the consolidation of public finance that may be equally essential for the system to function.

(8) Indeed it appears that actors in the real world often do not care much about institutional complementarity, or entertain the apparently wildest and in any case most divergent views on what is complementary and what is not. Thus, as Martin Höpner has shown, the postwar German Left has relentlessly opposed the “power of the banks” in corporate governance and demanded capital disentanglement of large firms, although to many observers these very same features of the German financial system appeared to be indispensable complements of the German system of labor relations, in particular of co-determination. Similarly, as Helen Callaghan has pointed out, German business sees no contradiction between its opposition to the European Union takeover directive on the one hand and to workforce participation in the governance of European companies on the other – just as British unions now favor European legislation on workplace participation without at the same time opposing a European-wide “market for control” of large firms. Apparently experienced actors who know that both institutional change and institutional complementarity are matters of degree tend to develop the confidence that if desired changes in institutions should cause problems of suboptimal complementarity, they will find will ways and means to address them in time.

In short, institutional complementarity is hard to predict and provide for *ex ante*. Where it exists, it is mostly generated *ex post*, through corrective intervention and piecemeal mutual adjustment. Rather than planned and designed in one step, complementarity seems the product of continuous, more or less improvised de-bugging of perceived frictions under pragmatic standards of satisfactory – relative – performance. Among other things due to their long response time compared to the time horizon of political careers and individual human lives, social systems are experienced by human actors as quite robust and forgiving, tolerating considerable laxness in dealing with their institutional architecture. Indeed, they seem to allow broad space for decisions that are frivolous and reckless, in the sense that they do not at all care about systemic complementarity and may therefore generate as many problems in the future as they presently solve. Frivolity and recklessness are invited by the fact that institutional complexity and inertia make suboptimal design decisions difficult to identify and attribute. Loose and uncertain causal textures shield actors during their lifetime from accountability for the negative consequences of their decisions. They also allow future actors considerable short term discretion in addressing institutional dysfunctions resulting from past design mistakes. For example, the inert response of institutions to political intervention seems to enable actors to distribute their attention between dilemmatic problems over time, addressing one problem by means that are bound to exacerbate another,

which is dealt with later in ways that undo the solution found for the first.

II.

My second point relates to the character of social institutions as such. In a political economy institutions are sometimes conceived as collective instruments of utility maximization constructed, selected and adapted in complex processes of aggregation of individual preferences. Once established, they become stable social artifacts whose shape and structure can be taken as given – until they are redefined by some sort of purposeful intervention or rapid unintended change, after which they return to their previous stability. For some practical and analytical purposes this simplification may be useful. However, for a realistic understanding of institutional complementarity, and of how institutional arrangements in a political economy work or do not work together, it seems important that institutions, looked at from close up, are always and necessarily less than perfectly defined. As a consequence, they undergo permanent – latent or manifest – revision driven, among other things, by an inherent uncertainty of their precise meaning.

Before I explain why this is so, I should like to point out its significance for our subject. If social institutions are essentially vaguely defined and in flux, they are hard to structure so that they safely and assuredly complement one another. At the same time, assuming institutions to be inherently dynamic and evolving one can imagine numerous small and ongoing adjustments taking place in the interface between related institutions – a process that might gradually reduce friction and increase complementarity. An example of such a process, which has recently attracted great attention, is the *hybridization* of institutional transplants in a new, “foreign” context. Hybridization involves gradual and at first imperceptible changes, not just in the imported institution, but also in its new environment. Thus as a new, more “Anglo-American” capital market regime is implanted in the German political economy, some large German firms are trying to build a constituency for themselves in the new capital market that is willing to honor with lasting a commitment their specific stability and the long-term perspective they are capable of pursuing due, in part, to their labor relations. At the same time, German labor relations, notably the practice of co-determination, are becoming more market-aware and market-conforming. In the process, both the labor and the capital market regimes are “hybridized,” in that they assume traits previously associated with “models of capitalism” other than those of their origin.

Why are social institutions never fixed and, to the contrary, continuously evolving? There are many reasons for this, all of which, however, can be traced

back one way or other to fundamental properties of social action as such. Institutions are socially sanctioned expectations with respect to the behavior of specific categories of actors or, better, the performance of specific social activities. Typically they involve mutually related rights and obligations for social actors that, by distinguishing between appropriate and inappropriate, “right” and “wrong”, “possible” and “impossible” activities, organize their behavior into predictable and reliable routine patterns. Institutions and the regimes they embody are legitimate to the extent that they are guaranteed by third parties. While a third party may be the community as a whole, informally expressing disapproval, in modern societies where institutions tend to be more or less formalized, enforcement is typically delegated to specialized agencies that are institutions themselves, such as regulatory authorities or courts. For analytical purposes, it is possible to distinguish between *regime makers* (or institutional designers), *regime takers* (or actors to which institutionalized rules are to apply), and *third parties* that may be called upon in case of non-compliance. In reality, the distinction between regime makers and regime takers may be fluid, for example in a democratic polity.

Defining institutions in this way has the advantage that it directs attention to important but often overlooked sources of institutional change. They all have to do with the fact that the enactment of a social institution can never be perfect and that there always is a gap between the *ideal pattern* of a norm and the *real pattern* of life under that norm. Among the facets of this complex relationship are:

(1) The meaning of a social norm is never self-evident and always subject to and in need of interpretation. Life in a social, i.e., normatively ordered community consists to a significant extent of ongoing efforts to develop and maintain a shared understanding of what exactly the rule is that one has to apply to a given situation. As ideal patterns are necessarily less complex than real patterns, honest disagreement on over how a norm is to be applied may always arise. Rather than simply a matter of logical deduction, applying a general rule to a specific situation is a creative act that must take into account, not just the rule itself, but also the unique circumstances to which it is to be applied. This holds for highly formalized norms, like written law, no less than for informal ones. Lawyers know the complexities of subsuming the empirical properties of an individual case under a general rule. Recourse to what is called in various legal systems “the will of the legislator” is for good reason just one way among others to discover what a rule really demands in a concrete context. This is because no lawmaker can be assumed to have been aware of the full variety of situations to which his law might in the future have to be applied. In fact, he might find it difficult to remember with hindsight the variety of motives that may have driven his decision. Sociologists have pointed out that typically, clarification of the operative meaning of formal law presupposes a shared culturally based tacit

understanding between the actors involved that may, however, either not really exist or change over time, in which case the norm *in effect* changes with it. Indeed, often what a norm “really means” can be established only by the rulings of a legitimate authority charged with adjudicating between different interpretations. Such rulings, too, can and are likely to change with time and circumstances, which may be entirely functional as it may provide a regime with the sort of on the ground flexibility that it may require for its reproduction.

(2) A related issue is the cognitive limits of rule makers. Even the honest application in good will of a rule to unforeseen conditions may cause unanticipated results that may necessitate its corrective rewriting. (On the other hand, that rules are never exhaustively and unambiguously defined facilitates their creative application in uncertain circumstances, keeping them valid in spite of the necessarily incomplete information of their designers.) In fact regimes capable of survival in a complex environment are likely to have built-in feedback loops that inform rule makers how their rules are working out in practice. Supported by intelligence of this sort, rule makers may then revise the rules, setting in motion another sequence of practical exploration of their real meaning, observation of their real consequences, and further revision in the light of the latter.

(3) Questioning the true meaning of institutionalized rules happens of course not only in good will. While sometimes rule takers are socialized to follow a rule for its own sake, sometimes they are not. To the extent that rules impose uncomfortable and costly obligations, rational actors may look for ways to circumvent them. Finding loopholes in a law is a specialty of lawyers, especially tax lawyers. Their continuous probing of the boundary between the legal and the illegal is part of the interpretative struggle that begins as soon as a rule is laid down: it is one of a variety of mechanisms by which the meaning of a rule is both clarified and modified (“worked out”) in practice. Favorable discoveries made by adventurous interpretative entrepreneurs may spread fast among the subjects of a regime, forcing rule makers to revise the law in order to restore it. Sometimes the only way this can happen is by more special rules being added to cover unforeseen cases. As this may make the regime increasingly complex, it may further extend the opportunities for inventive opportunists to evade or subvert it to their advantage.

(4) Finally, there are narrow limits to the extent to which agencies of social control can prevent and correct intentional and subversive deviation from social rules. A case in point is the phenomenon of black labor, or more generally of the underground economy. Some labor regimes are more likely than others to give rise to anomic behavior in this sense. In fact, illegal economic activities seem to be most frequent in highly regulated economies. Mass deviant behavior in breach of a social or legal regime can often be ended only by changing the regime and making the behavior legal. Sometimes, however, rule makers are

willing to live with considerable anomie since the stability of a norm may, as famously pointed out by Durkheim, require that it be broken. For example, black labor may furnish a modicum of flexibility to an economy that would otherwise be too rigidly regulated to perform well (what Berger and Piore have long ago described as economic dualism). Uncontrollable or, for that matter, unofficially tolerated deviant behavior may also enhance the complementarity between two institutions that were not designed to fit together.

What all this amounts to is that makers of rules and regimes have less than perfect control over the way in which their creations work in reality. What an institution is, is defined by a continuous complex interaction between rule makers and rule takers during which ever new interpretations are discovered, invented, suggested, rejected or, for the time being, adopted. This implies that whether or not there is complementarity in a political-economic regime is not just determined at the regime level alone or once and for all. Instead, it is subject to spontaneous evolution driven by any institution's inevitably imperfect enactment on the ground, in a direction that is often unpredictable to those supposedly in control. Indeed, the more sophisticated the makers of a regime are, the more they recognize that a good part of institutional and political life consists of unanticipated consequences of institutional design decisions, requiring that these are continuously adjusted and revised if they are to be made stick. This is widely different from a view of economic institutions, not infrequently implied by scholarship, as a rigid hardware of social life, relegating actors and action to firmly circumscribed residual spaces left for rational calculation and the spontaneous voluntarism of social action. Instead, a realistic image of social institutions would emphasize their fluidity and their being continuously created and recreated by a great number of actors with divergent interests, varying normative commitments, different power and limited cognition – in a process that no single actor fully controls, whose outcomes are far from standardized across different sites of enactment, and whose results are contingent and unpredictable and can often be fully understood only with hindsight.

III.

Whether or not and to what extent a given economic institution is complementary with another institution in its environment depends on their joint performance. Performance, however, is measured, not in absolute, but only in relative terms. As long as other systems perform less well, or fail successfully to attack a system's market niche, institutional configurations may therefore appear complementary, so that, if faced with more vigorous competition, would be regarded as nothing like that. This is another way of saying that real economic

systems in the real world frequently, and probably normally, command a measure of slack that covers up internal conditions that are less than optimal in functional terms.

Moreover, in a world of small Ns, with more variables than cases, observed performance is notoriously difficult to attribute causally to a single factor, or combination of factors. A good example is Germany in the 1980s when it was widely regarded as a successful industrial society highly competitive with respect to a specific range of products. Was its success due to what to many seemed a strong complementarity between its engineering culture, its typical organization of work, and its vocational training system? Or was it rather the complementarity between the German corporate governance regime and the peculiar German institution of workforce codetermination? Or the combination, also specifically German for a long time, of an independent central bank with coordinated sector-wide wage bargaining? Adjudicating between these different possibilities is not easy and may be impossible, although much could depend on knowing the right answer. For example, good German performance in the heydays of the “German model” might mistakenly be attributed to mutually supportive interaction between codetermination and bank-based financial markets, while in reality it may have been the result of a fortuitous interplay between German-style engineering and the German apprenticeship system compensating for what in reality might have been costly frictions between bank-based finance and codetermination. In this case, incidentally, Social-democratic and trade union opposition to “the power of the banks” would have been much less paradoxical than it seems.

To complicate things even more, success in economic system competition has not just endogenous but also exogenous sources, the latter being at least as important as the former. In Machiavelli’s terms, it is not just the virtue (*virtù*) of a social system that matters for its performance but also its good luck (*fortuna*). Whether or not an institution can be said to complement another institution depends on the environment they together face. The latter, however, is beyond the control of institutional designers – although it is true that within limits social systems may have the ability to shape or, more modestly, to select their environment, for example by picking a market for themselves in which their specific capabilities give them a competitive advantage. Environments are not, however, unendingly malleable or in unlimited supply. Nor are they stable over time. An environment that makes the relationship between two institutions one of complementarity – by rewarding the system for the particular results of the two institutions’ interaction – may change and thereby render the latter useless. Thus, international capital markets may starve a bank-based financial system of funds which in a closed national capital market worked well together with a long-term employment labor market regime. *Vice versa*, environmental change may turn an institutional configuration that in the past impeded performance into

an asset for national economic competitiveness. Complementarity, that is to say, in the relationship between institutions is conditional on external circumstances which, from the perspective of the social system, may be non-negotiable.

Again, this can be illustrated by an example. It has been argued that the specifically German configuration of institutions, and perhaps also the Japanese one, performs well, and in this sense is characterized by a high degree of complementarity, in a world in which technological change proceeds incrementally and markets reward gradual increases in the quality of existing products more than radical innovation. It has also been argued that historically, technology has developed in cycles, with short periods of radical innovation being followed by longer periods of gradual improvement until the cycle started again with the next technological breakthrough. In this vein, the present decline in German (and Japanese) economic performance has been attributed to the micro-electronic revolution ushering in a new wave of technological change and, as a result, placing the more organized and less liberal economies of Germany and Japan at a disadvantage. While their institutions may still be coherent, they are no longer complementary as they no longer enhance each other's performance. Indeed, high coherence without complementarity may stand in the way of adjustment as it may make individual institutions difficult to reform.

Assuming that technological change indeed moves in Kondratieff-like cycles, one might advise German and Japanese policy-makers not to engage in hasty institutional experiments with uncertain event. Instead, they might do better to wait out the relatively short period in which their indigenous institutions cannot be expected to perform well, until more favorable conditions return that again put a premium on their country's specific abilities. The problem is, however, that nobody can be certain how long the period of transition will last and, indeed, whether a Kondratieffian theory of technological change, even if it was true in the past, will also be true in the future. What if the years of radical innovation – meager years from the perspective of less liberal variants of capitalism – last so long that by the time they finally end, the countries that did not match their conditions of success are economically so emaciated that they have lost the capacity to take advantage of the new opportunities? And what if the stable sort of environment in which nonliberal capitalism prospers does not return at all due to the world having changed? That it may do so can certainly not be ruled out, as the social world remains a historical world with an open future.

Uncertainty about the future, then, is at the same time uncertainty about institutional complementarity, to the extent that complementarity is measured by economic performance, and the latter is conditional on a pay-off matrix offered by the outside world. If we assume that world to be changing, in a direction on which we can make at best educated guesses, then complementarity is not just an uncertain but a moving target, one that we may pursue in bad times by either preserving or rebuilding our institutions, and by refining and upgrading them in

good times, without ever knowing for sure, whether what we are doing will really make them more complementary, and with it more productive.

IV.

This implies, complementarity, this implies, can be no more than one consideration among others for the politics of institution-building. Moreover, social systems seem to be able to operate with significant economic inefficiencies in their institutional make-up, among other things because of long response times along internal causal chains making their elements less tightly coupled than functionalist theories suggest. They also depend for their performance on an unpredictably changing environment that is the ultimate arbiter as to whether or not and to what extent their institutions are complementary. Moreover, most actors most of the time do not by far have enough information to pursue institutional complementarity with any degree of certainty, and therefore tend to pursue other objectives that are less demanding on their cognitive capacities. In what sense, then, can we at all speak of complementarity between economic institutions?

Without being able to offer a full answer, I suggest that we reject the idea that complementarity is a result of environmental selection. There is no perfect market for social systems that would eliminate less efficient institutional arrangements and leave alive only those with optimal performance. I believe that complementarity, in the sense of mutual functional enhancement between two or more social institutions, is the result of experiential learning among actors, both at the controlling and, most importantly, the receiving end of institutional regimes. Both regime makers and regime takers are constrained to improvise with the institutional material they have at hand under constantly changing and inherently uncertain conditions, having to make the best out of a stream of events and structural transformations that they cannot stop or redirect. Improvisation with serendipitously discovered synergies between different social rules and practices gives rise to make-shift structural arrangements that remain temporary and unstable as their exact meaning is elaborated only over time while their economic usefulness is bound to fluctuate with changing external circumstances. "Economizing" does take place, but mainly below the level of grand binary classifications of a small number of core institutions, or institutional sectors. Whether these complement each other depends mostly on the Schumpeterian creativity of local actors for whom national regimes are no more than a starting point in their everyday efforts to make things fit and ends meet. Working out the meaning of the social rules to which they are subject in historically new situations, they modify the regimes that are supposed to govern

their behavior, stabilizing and destabilizing them at the same time: injecting them with flexibility, so they can adjust to dynamic conditions, and gradually rebuilding them until one future day the “model” they have in the past formed will be found to have been fundamentally revised, or even succeeded by a new model, without anyone having noticed.