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Dialogue on 'Institutional complementarity and political economy'

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Martin Höpner's paper was written to structure discussions at a workshop of the 'Complementarity Project', which was held in Paris, 26–27 September 2003. The project was organized by Bruno Amable and Robert Boyer (CEPREMAP, Paris), Colin Crouch (EUI, Florence), Martin Höpner and Wolfgang Streeck (Max Planck Institute for the Study of Societies, Köln). The subject of the workshop was the complementarity, real or imagined, of financial markets and industrial relations in present-day 'varieties of capitalism'. Apart from the organizers, participants included Patrick Le Gales, Peter Hall, Gregory Jackson, Bruce Kogut, David Marsden and Pascal Petit. In the following we document short excerpts from five out of nine 'reaction papers' written by participants in advance of the workshop. The selections were made by Wolfgang Streeck.

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Three meanings of complementarity

Colin Crouch

At least three different meanings of complementarity are identified in Höpner's paper, ranked in descending levels of clarity and rigor.

(1) Complementarity where components of a whole mutually compensate for each other's deficiencies in constituting the whole.

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(2) Complementarity in the economist's sense of two goods, a fall in the price of one of which will lead to a rise in the demand for the other.
(3) Complementarity as similarity.

The first meaning is the strictest because it defines two phenomena (in our case institutions) as complementary when they have opposed characteristics, such that a whole comprises the two parts. Höpner cites the computer scientist's sense of complementary binary numerical series. Two hemispheres that form a sphere are another good example. It is well worth looking for such cases in institutional analysis, as they are rich in information and predictive possibilities. But they may be relatively rare, and as Höpner warns more generally, there are temptations to functionalism if we search for 'necessary' complementarities of this type. It is important to note that this use of the term is the opposite of what is implied by the majority of current institutionalist uses of complementarity, which cluster around meaning (1).

Examples of such complementarity would be:

(i) Non-transferable company pension schemes in US corporations, which offset the tendency towards high labour mobility of many other US labour market institutions.
(ii) Highly portable skill qualifications in Germany, which offset the tendency towards low labour mobility of many other German labour market institutions.
(iii) The role of big institutional investors in the US economy, whose individual impact on a firm or whole sector can be so large that they cannot behave as in a pure market, but need to act strategically, often engaging in dialogue with firms' managements. They thereby offset the tendency to spot markets of some other US financial institutions, and make possible a supply of patient capital. (An interesting example of this would be the Californian Public Service Pension Scheme, one of the very largest investors, and often depicted as the purest expression of the US system. The very idea of a public service pension fund is itself a compensating element in the model of US capitalism. If the USA really was characterized primarily by markets, there would be very few public service employees in California, and they would not have a collective pension scheme.)

The second meaning is extremely useful. It is, however, not as rigorous as it seems, and correct use needs to be aware of this and willing to exploit its resulting flexibility. A good example of this kind of complementarity would be the hypothesis that, if the price of flour falls, there will be a rise in demand for tomatoes. This happens because the fall in the price of flour causes a reduction in the price of pizza, leading to a rise in demand for tomatoes—flour and tomatoes (with some other ingredients) being complementary parts to the whole pizza. Although this is very rigorous, it is also contingent and empirical. Unlike cases falling under (1), there is no logical relationship between flour and tomatoes, such that one is defined as the characteristics lacking in the other. They are linked by a purely empirical phenomenon, the pizza. This is the fortuitous consequence of human creativity, certain human tastes, the coincidental existence of large numbers of tomatoes in the region where pizza dough was first developed, and then a large quantity of tradition. This complementarity depends on certain strong *ceteris paribus* clauses. A change of taste (for example, resulting from further growth of the recently fashionable tomato allergy) and growing popularity of *pizze bianche* could destroy the relationship altogether.

Examples of this type of complementarity abound at the level of institutions, for example those discussed by Streeck in German and Japanese historical development. The bundle of characteristics of those economies came together because actors worked creatively to bring them together. Over a long period they then adjusted them to make them fit better. (Sometimes it may even have been a matter of making the best of initially unpromising material. German trade unionists may well regard *Mitbestimmung*, not as a pizza, but one of those highly spiced southern Italian dishes, highly successful, but designed initially to conceal the fact that the meat was often rotten.) A later observer is likely to think that they were either made in heaven or at least strategically planned, but in fact they resulted from a mass of adjustments: *pizza napolitana*; German corporate governance.

If we bear in mind the role of human creativity in forging these complementarities, we shall be aware that entrepreneurial actors may intervene at points of change and produce surprising new combinations that unsettle the *ceteris paribus*. These complementarities are not necessarily rigid. If they are worried about tomato allergy, pizza makers might take advantage of a decline in the price of flour to reduce the price of *pizze bianche*, in order to encourage their consumption. German *Aufsichtsrat* worker representatives take advantage of new forms of corporate governance in order to gain from transparency.

Identification of the role of actors here also encourages us to look for different *types* of links that bind the complementary items. The basic economist's model assumes that the link is the market and, ultimately, consumer preference and taste. But the Coasian firm as an organization may also be at work. Assume that there is a pizza-making monopoly, which firm is also trying to break into the mobile phone business. It therefore uses a fall in the price of flour, not to reduce the price of its pizza, but to cross-subsidize its mobile phones. We therefore observe that a fall in the price of flour leads to a rise in the demand for mobile phones. This is certainly a complementarity in the strict economist's sense, but it exists at a different level from that of the consumer-driven market case of the pizza. Many of the institutional complementarities observed in the literature that can be related back to a public policy take this form. Government (or, more widely defined, the policy elite) is a policy monopolist, and it acts across a range of areas. Certain apparent consistencies between, say, industrial relations and welfare state institutions may take this form. They are real enough and can be significant; often social actors will work on them subsequently in a Streeckian way to make some sense of the link; and they may become very entrenched. But these are not complementarities existing at a profound sociological level; they certainly do not imply relationships of necessity.[1]

It follows from much that has been said above that I consider the use of complementarity to designate institutions that have some kind of similarity as quite misleading. All notion of completion through compensation, crucial to meanings (1) and (2), is missing. This does not mean that cases of institutional similarity are not interesting. They may constitute cases of *Wahlverwandschaften*, which are certainly well worth studying. But, in general, similarity among institutions may be taken as a *lack* of complementarity, such that some of the useful balancing characteristics of truly complementary components are missing. It is very confusing if we give a concept two contradictory meanings.

So much is nomenclature, but a difficult substantive issue is raised here. The logic of strict complementarity (types 1 and 2) is that certain efficiencies are achieved when balancing or contrasting characteristics are found alongside each other. To use less functionalist terms, such an approach stresses the advantages of the mongrel over the pedigree animal: the latter has heavily reinforced characteristics, which means that vulnerabilities are exaggerated, while the mongrel avoids such reinforcement and may, therefore, appear more 'balanced'. At the same time, of course, the pedigree animal, because it does have exaggerated characteristics, does some things particularly well. Both types of animal offer advantages, but they are different types of advantage. (Thoroughbred racehorses will run much faster than a wild horse; but their legs break more easily.) The same may be true of ensembles of institutions. Those based on balanced complementarities may be adept at certain activities; those based on similarities at others.

This is fine, and leads us to interesting research questions about when which type is appropriate (there are different horses for different courses, as the British saying has it). Unfortunately, however, this is contradicted by various research findings, cited extensively in Höpner's paper, which suggest that 'mixed' cases always do worse than

[1] Complementarity as 'reciprocal reinforcement' might be seen as another type discernible in Höpner's account. It refers to situations where the existence of one institution provokes that of another, which in turn strengthens the first, and so on. This is a powerful concept, as it can demonstrate how certain kinds of path dependence might be created. But is it necessarily complementarity? We should bear in mind the idea of 'completion' contained in our concept, and the implications of a certain kind of efficiency; the identified components of the complementarity need to constitute some kind of whole. By itself, reciprocal reinforcement does not imply this at all. Two phenomena might simply reinforce each other without together forming a whole. Complementarities of types 1 and 2 may well include cases of reciprocal reinforcement, and it will be important to note this when it occurs. However, this then becomes a possible attribute of complementarity, not a separate form of it.

'pure' ones (the work by Hall and Gingerich is the most extreme formulation of this hypothesis). There are several potential ways of reconciling these findings with the theoretical arguments in favour of institutions with compensatory features.

It is possible that, by concentrating on broad, basic characteristics of institutions, these studies miss smaller, inconsistent, empirical features that provide the 'compensation'. For example, how many studies of US capital markets look at the role of certain kinds of venture capitalism (the so-called angels) who provide a certain form of patient capital? If these studies did notice these things, they would have to regard them as a source of inefficiency, since they clearly contradict the spot market image of US capitalism. But such a conclusion could well be wrong.

There may be an important difference between just 'mixed' institutions and those that embody truly compensatory features. In principle this is a convincing idea: it cannot be assumed that at any moment just any jumble of institutional characteristics will constitute a complementarity. It is not any jumble of ingredients that makes a pizza. This suggests a hard task for research, identifying complementarities among the general jumble.

Observations of relative performance between structures based on complementarities and those based on similarities may not hold for all times and criteria. The Hall and Gingerich research includes some surprising examples of lack of success. If one focuses on some criteria of economic success other than growth, Austria, the Netherlands and Switzerland would appear as among the world's most successful economies during the 1970–97 period studied. Again, this suggests a big research agenda.

Requirements for a useful concept of complementarity

Wolfgang Streeck

Any useful concept of complementarity must contain an explicit assumption on the relevance of *efficiency constraints* for institution-building. If it was high, institutional complementarity, to the extent that it enhances economic performance, would have to be an important ongoing concern for actors. There are, however, reasons to believe that most economic systems command a great deal of slack; that the time lag between decisions on institutional structures and their economic effects is long; and that an unpredictably changing environment permanently resets the conditions of economic performance, rendering it futile to follow current performance requirements narrowly. To this extent institution-builders may rationally neglect economic complementarity and pursue other targets, such as social stability. By implication this would assume loose rather than tight coupling of system elements, allowing for change in individual institutions without negative feedback caused by efficiency pressures from supposedly complementary institutions.

Five more requirements come to mind.

(1) Complementarity as a meaningful concept must be open to the fact that different institutions tend to be controlled by different elites with different interests, and especially with their own ideas as to which institution must be adjusted to enhance the functioning of the other. Particularism of functional domains and institutional elites must be recognized as an empirical condition that must somehow be overcome for there to be complementarity. This requires that mechanisms be specified by which such particularism may, in practice, be overcome. Put more abstractly, tendencies of social subsystems towards *structural differentiation and functional autonomy* must be taken into account as facts of life that raise fundamental questions of system integration. This holds in particular in a world in which some sectors have become internationalized while others are still nationally constituted, making societies less than ever susceptible to being governed from a hierarchical centre.

(2) A useful concept of complementarity must allow for manifold historical and political *contingencies and constraints* getting in the way of actors pursuing institutional complementarity. Except for extreme cases, institutional adjustment in pursuit of complementarity can, therefore, only be partial. Nor can institutional designers avoid accommodating interests other than economic efficiency and performance. This is likely to result in endemic tensions and inconsistencies in social arrangements that will necessitate constant readjustment.

(3) Very fundamentally, a useful concept of complementarity must entail a credible account of the origin of complementarity in the *absence of a grand design or a master designer*. This means that 'economizing', in the sense of adjusting institutions to make them more productive by making them more complementary, must be conceived largely as taking place 'on the ground' and bottom-up, by discovery, improvisation, or serendipity. Formation of an efficient production regime would then depend on Schumpeterian creativity[2] under Hayekian conditions of distributed intelligence, where institutional designers are just one category of players among

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[2] Consider Höpner's example where he suggests that 'Anglo–American style liberalized employment protection may not fit into an organized economy like Germany's'. It does fit, however, and quite nicely judged by levels of both income and employment, into the organized economy of Denmark, with its high levels of training effort and much higher unionization than Germany. To make the two fit, a special sort of highly organized labour market policy had to be invented that combines very high unemployment benefit with sharp sanctions against workers unwilling to take a job offered to them by the employment office. Another example, for the basically unpredictable creativity of practical action, is the emerging combination of 'shareholder value' capital markets and co-determination in large German firms. Höpner does point out that their compatibility was originally dependent on government-financed

others and where no player has the capacity, except in very rare conditions, to impose a coherent blueprint on a society's institutional architecture. Put another way, what must be avoided is the implication of an all-powerful 'complementarity-maker', be it a state or a business class, making a production regime efficient by provident institutional intervention. It is only on the baseline of a non-functionalist, action-theoretical, historical account of the formation of institutional orders that the possibility of deliberate, voluntaristic institutional design in the service of economic performance may be entertained. While purposive institution-building undoubtedly exists, analytically it must be placed in the context of the ongoing evolution of social systems, among other things by recognizing the inherent limits to the cognition of even the most powerful actors and to their effective control over the behaviour of others.[3]

(4) Functionalist accounts of the *origins* of institutional complementarity must be made compatible with historical-genetic accounts featuring 'real' as opposed to efficiency-theoretical causal relations. For example, Höpner mentions that 'Aoki's model connects lifetime employment, the imperfect labour market and the main bank system', in the sense that it shows how they work beneficially together to make possible effective mutual monitoring in team-based production. There is, however, no point in time when the three elements were jointly designed for the purpose Höpner (following Aoki) attributes to them. The imperfect (external) labour market of Japan came about in the early 20th century when employers, operating under stark labour scarcity, tried to reduce worker turnover and eliminate independent artisans from the organization of factory work by no longer hiring workers from each other and locking their workforces into internal labour markets, especially of large firms. After World War II, enterprise unions were in part formed from below and, in part, imposed on workers by employers, cementing the internalization of labour in the firm. Lifetime employment then became the only major obligation for

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early retirement. But skilled actors that manage against the odds to combine previously incompatible institutions or social practices, may also be capable of inventing functional equivalents for background conditions that have become unsustainable. In Germany, employers and trade unions have responded to the end of government funding of early retirement by funding it by collective agreement (*Altersteilzeit*). It is, I maintain, mostly through such 'fixes' that political–economic institutions and production regimes in reality evolve, even though and precisely because they will not keep long and will require new fixing after a few years.

[3] In a fascinating recent book, *Dictatorship, State Planning, and Social Theory in the German Democratic Republic* (Cambridge University Press, 2003), Peter Caldwell shows how in the late 1960s intellectuals in the Sozialistische Einheitspartei failed in their effort to improve the economic planning process as the Party refused to face the 'challenge of a horizontal world with multiple centers, improbable complexity, and planless self-generation' (p. 184). Scholars studying the 'varieties of capitalism' should avoid making the same mistake.

employers that unions were able to fight for and win, preventing employers from firing workers after they had made it impossible for them to quit. The main bank system, meanwhile, reflected the policies and constraints of national economic developmentalism and was only later discovered to be a resource for firms trying in adverse economic conditions to live up to their 1950s and 1960s post-war settlement with labour.

(5) Finally, and importantly, a useful concept of complementarity must leave space for institutional *change*, including major change, short of a comprehensive redesign of the system as a whole. In other words, it must answer the question how change should be possible in spite of the mutual reinforcement between institutions that is implied in the idea of performance-driven complementarity. In addition to endogenous change, importation and assimilation of 'foreign' institutional arrangements must be systematically provided for. This requires assuming loose enough coupling between system elements, so that change in one element becomes conceivable, which may then create new contingencies and constraints for other elements, posing new puzzles for actors seeking institutional complementarity in the pursuit of economic efficiency.

Complementarity in regulation theory

Robert Boyer

Martin Höpner provides a stimulating analysis of the links between industrial relations and corporate governance and then delivers a prognosis about the future of German institutional architecture. This is an opportunity to point out some striking convergences with regulation theory and to confront the vision of possible trajectories elaborated from these two analytical frameworks.

1. Coevolution, institutional complementarity or hierarchy?

The concept of complementarity was not present in earlier research in which regulation theory stressed the notions of accumulation regime, regulation mode, architecture of institutional forms, exogenous driven and endogenous generated crises. Later, the inner development of this research agenda has shown the usefulness of two concepts, institutional *complementarity* and institutional *hierarchy*. The major emphasis of regulation theory was on structural transformation and the endogenous *co-evolution* of institutional forms. It might be useful to give definitions of these three notions.

The more central concept stresses the fact that a coherent regulation mode is only the *post factum* outcome of a series of innovations and adjustments.

All institutional forms result from social compromises that are then embedded in law, jurisprudence, social norms and conventions. Each of these institutional forms induces some specific behaviour of firms, wage earners, banks and so on. At the level of the economy, there is no automatic mechanism that would ensure their compatibility. Instead, institutional forms continuously adjust and thus co-evolve. Co-evolution is the process of trial and error through which a series of institutional forms that are initially disconnected and formally independent (since they result from institutionalized compromises among diverse agents in different fields) adjust to one another until a viable institutional configuration emerges. The economic adjustments then become part of a mode of regulation and retrospectively appear as coherent. This extends to institutional analysis a concept developed by neo-Schumpeterian theories for the joint evolution of technologies and organizations. However, the mechanisms at work may differ: in the latter case it may be market selection while in the former, political processes play a decisive role.

In retrospect, analysts of a past or present regulation mode may it find useful to invoke the concept of institutional complementarity. More precisely, complementarity of institutional forms describes a configuration in which the viability of an institutional form is strongly or entirely conditioned by the existence of several other institutional forms, such that their conjunction offers greater resilience and better performance compared with alternative configurations. For example, the Fordist wage–labour nexus and a credit-based monetary regime proved complementary, as were the competitive wage–labour nexus and the gold standard regime. 'Comparative Institutional Analysis' stresses the same idea concerning the complementarity of keiretsu, employment stability and the main bank system in Japan (Aoki, 2001). It has also been used to capture some of the features of Silicon Valley as a possible new institutional configuration. The notion of institutional complementarity seemingly translates at the macroeconomic level into the theory of super-modularity (Milgrom and Roberts, 1990), but the underlying mechanisms are quite different: institutional complementarity is observed only *ex post* and does not derive from organizational or technological complementarity.

Observation of the transformations of industrialized countries during the last two decades has shown the value of a third notion, that of *hierarchy* of institutional forms. This describes a configuration in which, for a given era and society, particular institutional forms impose their logic on the institutional architecture as a whole, lending a dominant tone to the mode of regulation. Whereas the notion of institutional complementarity implies symmetry between two or more institutions, institutional hierarchy stresses asymmetry. Two definitions can be given, one static and the other dynamic. Institutional hierarchy by design means that during the conception of one institutional form, the constraints of another, superior institutional form are explicitly or implicitly taken into account. For instance, the monetary regime put forward by a conservative central bank implies flexible labour market adjustments and the absence of structural deficit spending by governments. According to a second interpretation, the transformation of one institutional form guides the development of (several) other institutional forms through the range and intensity of its repercussions. In Fordism, the wage–labour nexus played this role because of the founding compromise from which it originates. In the 1980s, it was replaced by the monetary and financial regime, which tends to dictate developments in other areas.

Both concepts, of complementarity and hierarchy, may give the impression of a completely deterministic system without any uncertainty or slack. Cross-national comparison of regulation modes has shown, however, that the fit between institutions is far from perfect. The concept of hybridization precisely describes the process through which tentatively imported institutions are transformed via their interaction with domestic institutional forms. This means that there are some degrees of freedom within each general institutional form. Hybridization is a major factor explaining the evolution of institutions and the diversity in institutional architectures. Of course, another source of dynamics for regulation theory is the inner development of tensions within a given architecture. The recognition that the fit among institutions is always partial and transitory brings to the fore the mechanisms diagnosed by comparative historical analysis: layering and conversion are powerful mechanisms of evolution (Thelen, 2003). Again this implies a 'softening', or at least a more careful use, of the concepts of complementarity and hierarchy.

2. The German case: so many interpretations!

How do the previous notions help in understanding the contemporary transformation of German institutions? Will the shareholder orientation of the large firms erode German industrial relations, especially co-determination? Let us review briefly a series of possible interpretations, none of which seems totally convincing, exhaustive or mutually exclusive.

The general interpretation of Martin Höpner gravitates around the hypothesis of an hybridization of German labour institutions by the diffusion and redefinition of shareholder values. But this is a rather general analysis that has to be broken down into a series of sub-hypotheses. After all, the Hall and Soskice interpretation of strong complementarity between nearly all the German institutions might not be completely right. Actually, the current diffusion among large companies of shareholder value might mean that the main bank system and patient capital on one side, and co-determination and work councils on the other side, were in the past *compatible but not necessarily complementary*.

A third interpretation would be that the inner functioning of co-determination is redefined under the pressure of the adoption of shareholder value by major German corporations. This would imply that labour market institutions and governance structure are experiencing a conversion, which in the long run might amount to a significant transformation in the institutional architecture. The central argument would be that there is a lot of slack in any institutional order, even within the tightly organized 'social market' economy.

Still another vision may stress the differences between the levels of the firm and of the economy. At the micro level, it may be possible to insert shareholder value into co-determination and work councils, but this may mean growing inequalities as well as less employment, which in the end would necessarily destabilize the extant mode of regulation. In a sense, the poor macroeconomic performance of the German economy since the mid-1990s would be evidence of such a divergence between the micro-corporate regime and the conditions of stability at the macro level.

This raises the issue of heterogeneity among firms within the same institutional context. Perhaps large German corporations may be able to combine shareholder value and co-determination, but this need not necessarily be so for small and medium sized firms. Since these do not have access to financial markets and do not usually benefit from public subsidies and support (for instance *via* early retirement), the demography of German firms may be adversely affected and, consequently, the viability of the whole institutional architecture could be threatened.

Maybe the observation of a surprising compatibility between shareholder value and co-determination derives from the fact that while the two are in fact incompatible, it takes time for institutional change to give rise to a new regulation mode that can be recognized as such by experts and economic actors. Institutional change manifests itself only in the long run. Apparent compatibility would only reflect the built-in inertia of institutional systems.

A variant of a previous interpretation emphasizes the role of early retirement and other public policies in procuring the agreement of workers for restructuring and employment reduction under the pressures of shareholder value. Compatibility between changing corporate governance and unchanged industrial relations would be secured through a permissive social policy. (Later, when the various disequilibria pile up in a large public deficit, the ongoing evolution becomes unsustainable.) This means that complementarity would exist, not between two, but between three institutions (Figure 1), or that incompatibility between two institutions would be resolved by the addition of a third one. By extension, the whole institutional architecture might play this role, but this makes the analysis quite difficult.

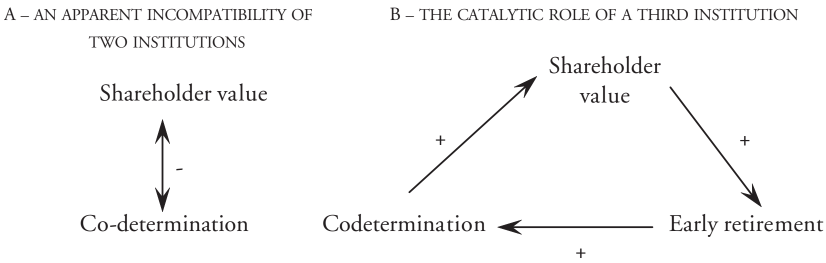

Figure 1 Complementarity among several institutions and not only two. (A) An apparent incompatibility of two institutions. (B) The catalytic role of a third institution.

Yet another interpretation of the same process is the following. In the Golden Age of the 'German model', under the aegis of co-determination and works councils, wage earners had a leading role. Today, while the legal organization of industrial relations has remained unchanged, a shift in the bargaining power of firms has enabled them to impose a shareholder value strategy. Therefore, in terms of outcomes, the system is no more the same, in spite of the large continuity in its governance institutions. Hence the hypothesis of a shift in the hierarchy between corporate governance and industrial relations.

One could also infer that institutions *per se* are unimportant compared to two powerful structural economic transformations: more intense competition in the single European market and as a result of globalization, and the entry of international investment funds in Germany. This is precisely the argument developed by some theorists of finance (Rajan and Zingales, 2003). They believe that in the long run institutions are selected according their efficiency and this is enhanced by the development of international markets and finance.

However, this vision can be challenged in turn. The survey of the Max Planck Institute may point to functional convergence of outcomes through adaptation on the margins of existing domestic institutions. This would contradict the hypothesis of definitive institutional complementarity at the national level as well as of supermodularity at the firm level. A series of marginal innovations following established German principles would deliver the economic performance required by market competition, resulting in convergence of performance in spite of institutional diversity.

So many interpretations seemingly sustained by the same empirical evidence! Can this uncertainty be reduced by further research?

References

Aoki, M. (2001) *Toward a Comparative Institutional Analysis*, Cambridge, Mass, MIT Press.

Milgrom, P. and Roberts, J. (1990) 'The Economics of Modern Manufacturing: Technology, Strategy, and Organization', *American Economic Review*, **80**, 511–28.

Rajan, R. G. and Zingales, L. (2003) *Saving Capitalism from the Capitalists*, New York, Random House.

Thelen, K. (2003) 'How Institutions Evolve: Insights from Comparative Historical Analysis'. In Mahoney, J. and Rueschemeyer, D. (eds) *Comparative Historical Analysis in the Social Sciences*, New York, Cambridge University Press, pp. 208–40.

Complementarity, hierarchy, compatibility, coherence

Bruno Amable

The notion of institutional complementarity is always, implicitly or explicitly, based on a theory of institutions. I will define institutions as political economy equilibriums that correspond to a compromise between conflicting social actors. By fixing the rules of the game, institutions suspend but do not abolish social conflict. Therefore, rather than *directly* linking institutions and institutional change to economic performance, one should analyse institutions with respect to the establishment and evolution of social compromises. Institutional complementarity must then be assessed with respect to the decision processes that lead to a particular compromise. It is grounded in a socio-political equilibrium, rather than being an expression of the various performance measures associated with different institutional configurations. As shown by Amable (2003), the institutional configuration of an economy depends on the political support provided by a dominant socio-political coalition or 'social bloc'. Institutional change is the outcome of strategies aimed at improving the situation of some or all components of the dominant bloc. The bloc itself being heterogeneous, institutions are always the result of compromises between actors who do not generally have perfect vision of all interdependencies and complementarities between institutions. With changes in agents' options and strategies, the social compromise has to be continuously re-established.

The notion of hierarchy of institutions is also related to that of political equilibrium. Political actors seek political support from a dominant social bloc (Palombarini, 2001). They will tend to implement institutional change in a direction that satisfies the existing dominant bloc. This has consequences for institutional change, which happens more easily where the groups forming the dominant bloc have little interest. By comparison, change will be implemented more cautiously in domains where the most powerful socio-political groups have vested interests. Institutions at the top of an institutional hierarchy are those that are most crucial for the socio-political groups that constitute the dominant bloc. Modification of the latter may lead to changes in the institutional hierarchy, and hence in the pattern of institutional complementarities. A changing environment may modify the strategies of the groups that form the dominant bloc, which in turn may lead to a restructuring or breaking-up of the bloc. This will cause more or less radical institutional change (up to a change of 'model'), depending on the extent of the changes in the pattern of alliances between social blocs and political actors.

What can be said about other concepts frequently associated with complementarity? Complementarity is by no means synonymous with institutional isomorphism, i.e. the presence of identical principles in different institutional areas. Institutional isomorphism and institutional complementarity are totally independent notions that may or may not coincide depending on the case considered. Overemphasis on 'common principles' presumably comes from a generalization of the empirical properties of specific national models. The state was supposed to be active in every institutional area in France, hence France was considered 'statist'; free markets and competition are supposed to prevail everywhere in the US, hence the 'logic' of the US model is a free-market logic, and so on.

These particular configurations, however, represent only one version of institutional complementarity. Complementarity may also exist where very different 'logics' operate in different institutional areas. One could, for example, envisage a free-market logic on the labour market coupled with comprehensive and de-commodified social protection. The apparent lack of coherence is no weakness, except perhaps for the social scientist who believes that agents would be so disturbed by a coexistence of a free-market logic on labour markets and a logic of de-commodification in social protection that they would become schizophrenic. The establishment of a compromise does not depend on adoption of common principles or common values by all actors, or even by the actors that form the dominant bloc. In fact, imposing isomorphism could very well destabilize a model by making some of the established compromises more fragile. In fact, one may doubt the viability of a model where the market logic would apply to *all* institutional areas. Excessive emphasis on institutional isomorphism may reduce the complexity of institutional complementarities and make comparative institutional analysis fundamentally one-dimensional.

The notion of *compatibility* of institutions may be defined in the following way. Institutional forms x and y are compatible if their coexistence does not set in motion a process of institutional change, in the sense that some political forces would like to keep x and change y. Therefore, institutions x and y are not compatible if there is no stable (which does not mean eternal!) equilibrium including both x and y, i.e. no stable socio-political compromise. Coherence may be distinguished from compatibility by pointing out that compatibility refers to the relationship between a given number of institutional forms, whereas coherence concerns the whole institutional structure of an economy. Coherence is related to the stability of the political coalition supporting a given 'model'. A model defined by an institutional structure (x, y, z) can be said to be coherent if there is a stable political equilibrium supporting all the compromises behind the institutions. Once again, coherence should be conceived independently from common principles or 'logics'. In most cases, there is no single logic able to reflect the totality of institutional complementarities and the hierarchy inherent in a given economic model.

References

Amable, B. (2003) *The Diversity of Modern Capitalism*, Oxford, Oxford University Press.

Palombarini, S. (2001) *La Rupture du Compromis Social Italien. Un Essai de Macroéconomie Politique*, Paris, Editions du CNRS.

Institutional complementarity: causes and effects

Peter A. Hall

When analyzing institutional complementarities, it is vital to distinguish between two different issues. The first concerns the effects of institutions where the question is: what effects follow from the presence of (one or more) institutions? The second concerns the basis for institutional origins or change where the question is: why do (one or more) institutions come into being, dissolve or change? In conceptual terms, these are separate questions and should initially be treated as such.

With respect to the first question about effects, the concept of complementarity, in the sense in which I find it most useful, posits that one (or more) institution(s) may enhance the effects of another institution (or of several others). This is the issue addressed in Hall and Gingerich (2004): do certain kinds of institutions in the sphere of corporate governance enhance the effects of specific types of labour-market institutions (and *vice versa*)? That is a difficult enough problem to resolve without simultaneously asking what may be implied about institutional change.

It is also an important problem. If the economic impact of a specific set of institutions in the sphere of labour markets (or industrial relations) depends on the type of institutions for corporate governance present in the economy, then most efforts to assess the impact of labour–market arrangements that do not also consider the nature of corporate governance will produce misleading conclusions.[4] Much of

[4] If complementary institutions for corporate governance are not included in the regression analysis, for instance, estimates of the impact of a particular set of labour-market institutions will be mis-specified, unless institutions for corporate governance are distributed randomly across the national cases, and Hall and Gingerich (2004) show they are not.

the literature on labour markets commits this error. Interaction effects of this sort can condition the impact of many kinds of institutions. Hall and Franzese (1998) argue, for instance, that the character of wage coordination conditions the impact of central bank independence. This phenomenon lies at the heart of the theories of the regulation school. Even if we were to ask no other question, this one is worth exploring.

1. Effects on what and for whom?

Of course, this formulation of the problem raises the issue of what effects are entailed by the presence of an institutional complementary. Hall and Gingerich (2004) focus on the impact of institutions on national economic performance. But institutions that have no effect or deleterious effects on national performance might still be described as 'complementary' with respect to their impact on the interests of other actors in the economy. Roe (2000) emphasizes this type of effect. He claims that concentrated shareholdings are complementary to industrial relations systems that entrench the power of employees from the perspective of their impact on shareholders' interests, even though they might not enhance overall economic performance or serve the interests of labour. Thus, when we speak of the effects associated with a complementarity between institutions, we must specify what effects we have in mind and for whom they are beneficial. The choice of what effects to study belongs to the analyst and should turn on the broader issues s/he seeks to illuminate.

It is useful to highlight the distinction between complementarities that enhance aggregate economic performance (levels of growth, employment, productivity, etc.) from those that deliver benefits primarily to a few specific groups. These two categories are not mutually exclusive. On the contrary, complementarities that enhance aggregate performance may exist or endure only because they also serve the interests of particular actors.

Herein lies one of the latent debates in the literature of political economy. The institutions of coordinated market economies, such as those of Germany, including forms of worker protection embodied in works councils or social policy and some features of corporate governance, which are said by Hall and Soskice (2001) and many others such as Crouch and Streeck (1997) to enhance aggregate economic performance, are said by others to damage aggregate performance and simply deliver rents to specific groups of actors (cf. Pagano and Volpin, 2001). My own view is that many of these institutions deliver rents *and* enhance aggregate performance (against some standard that must be specified), but this issue has not yet been explored adequately. The conventional concept of 'rents' obscures the important issues, because it is based on implicit comparison to an alternative scenario characterized by fully competitive markets that is often unrealistic.

However, this debate reveals the underlying importance to this topic of distributive issues. Who benefits from a specific set of complementarities? Although 'insiders' may gain more than others from some arrangements, do all not often gain to some degree? It also reveals the importance of counterfactuals to the problem of assessing the effects of institutional complementarities. When specifying the impact of an institution, we must do so against some standard that imagines an alternative world, and the range of institutional variation in the relevant universe does not always specify realistic alternatives. When assessing the impact of German institutions for wage coordination, do we do so against an alternative that imagines a German economy without trade unions or do we imagine that economy with powerful unions but no institutions for wage coordination?

2. Complementarity and institutional change

I turn now to the second question: how might the analysis of complementarities help us to understand how institutions originate and change? We can avoid unnecessary debate by ruling out approaches to this problem based on crude forms of functionalism. I first encountered political science when the field was debunking the structural-functionalism of Parsons (1951) followed by the functionalism of some variants of neo-Marxism (cf. Elster, 1983). To my mind, the core observation was that of Merton (1949) who pointed out that many different types of institutions often serve as 'functional equivalents' for one another. If this is true, and I believe it is, then the presence of one set of institutions cannot dictate the presence of a specific set of other institutions, even if the two are complementary. Similarly, I am sceptical that the social world throws up anything as coherent as a 'system' with 'imperatives' that some institution must be created to fulfil. Hall and Gingerich (2004) note that complementarities may help to explain the presence of institutions but cannot constitute a full explanation. For that, of course, we must turn to politics, which is often a messy process.

However, this observation does not mean that the effects of institutions and hence of institutional complementarities are entirely irrelevant to institutional development. The questions here are: How relevant are they? When are they relevant? And which institutional effects are consequential?

I take the cautionary points made by Streeck, Crouch and others that institutions are not always designed to be complementary, that complementarities are often 'discovered' after an institution has been established for other reasons, that the development of complementarities frequently entails a process of institutional experimentation, and that, in a world replete with institutions and redundant capacities, complementarities with roughly similar effects can be fashioned out of diverse sets of institutions. But I want to defend the contention that institutional effects of the sort present when two (or more) institutions are complementary to each other, can be important to the politics of institutional creation and change. I am interested in deciding to what extent such effects are important—both in general terms and in concrete instances.

There is a good pedigree for understanding politics in terms that render complementarities relevant to institutional creation, erosion and change. It lies in perspectives that regard political action as driven, in some measure, by the interests of the actors as the latter perceive them. This is a useful perspective. Swenson (2001) persuades me that Swedish employers agreed to universal social benefits because they believed this type of benefit system could serve their interests. Moreover, the value to employers of such benefits turned on the effects of institutional arrangements previously adopted in another sphere of the political economy, namely, the sphere of industrial relations. In short, Swedish employers saw a complementarity between concerted wage negotiation and universal pension benefits, and the crucial political support they gave to the latter was conditioned by a calculation about the effects of this institutional complementarity.

Does this exhaust the range of factors that motivate political action? Of course not. Can actors be motivated by considerations other than economic interest? Of course, they often are. Are they sometimes mistaken about what will serve their interests? Yes. Do political actors have to balance multiple interests (assigning each a weight in a multivariate preference function) when assessing how a proposal will affect their interests? Of course they do (Hall, forthcoming). *Eppur si muove*. Lasswell (1936) was right that politics is usually about 'who gets what, when, where and how', and I believe it a mistake to think that the managers of a firm or the leaders of trade unions do not consider the effects of a policy carefully and often accurately when deciding whether to support it or not.

If this is true, then, complementarities can be consequential for processes of institutional creation and change. The remaining problem is to determine just when that is the case. The problem is complicated by the fact that institutions must not simply be created but also operated. No matter how beautiful a practice or how deeply entrenched it is in law, if actors defect from it, as many German firms now seem to be defecting from some forms of concertation formerly organized by employers associations, then it will erode (cf. Thelen and Kume, 1999). As Streeck points out, governments often seem to play an architectonic role in processes of institutional creation. But, as he well knows, they can be incompetent architects. In short, various kinds of incrementalism are built into the processes whereby institutions come into being, endure or erode, and we need to know more about how these processes of incrementalism operate. However, I would start this inquiry from a consideration of the effects of the institutions, both as we perceive them and as the relevant actors perceived them at the time.

Having done so, one can then ask: what considerations beyond the aggregate welfare effects associated with institutional complementarities enter into the decision process? Once again, one of the key issues concerns the relative role of 'distributive' *versus* 'general' gains. My starting supposition is that the distributive effects of an institution (or of an institutional complementarity) are most crucial to the process whereby it is established. An institution must advance the interests of a sufficient number of actors for the requisite coalition in support of it to be assembled, whether in the political arena if the government initiates the institution, or in another arena such as that of industrial relations, if the institutional practice is built there. What this means is that, even if we want to understand complementary institutions as ones that enhance the aggregate economic performance of the unit at hand, we should acknowledge that it is often not their aggregate effects *per se*, but the distribution of actor-specific effects, that is most crucial to the relevant processes of institutional creation and change.

References

Crouch, C. and Streeck, W. (eds) (1997) *The Political Economy of Modern Capitalism*, London, Sage.

Elster, J. (1983) *Explaining Technical Change*, New York, Cambridge University Press.

Hall, P. A. and Gingerich, D. W. (2004) 'Varieties of Capitalism and Institutional Complementarities in the Macroeconomy: An Empirical Analysis', MPIfG Discussion Paper 2005–5, Cologne, Max Planck Institute for the Study of Societies.

Hall, P. A. (forthcoming) 'Preference Formation as a Political Process: The Case of European Monetary Union'. In Katznelson, I. and Weingast, B. (eds) *Preferences over Time*, New York, Russell Sage Foundation.

Hall, P. A. and Franzese, R. J. (1998) 'Mixed Signals: Central Bank Independence, Coordinated Wage Bargaining, and European Monetary Union', *International Organization*, **52**, 502–36.

Hall, P. A. and Soskice, D. (eds) (2001) *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, Oxford, Oxford University Press.

Lasswell, H. (1936) *Politics: Who Gets What, When, Where, How?*, New York, McGraw Hill.

Merton, R. K. (1949) *Social Theory and Social Structure*, Glencoe, Ill., Free Press.

Parsons, T. (1951) *The Social System*, Glencoe, Ill., Free Press.

Pagano, M. and Volpin, P. (2001) 'The Political Economy of Finance', *Oxford Review of Economic Policy*, **17**, 502–19.

Roe, M. (2000) 'Political Preconditions to Separating Ownership from Corporate Control', *Stanford Law Review*, **539**, 539–606.

Swenson, P. (2001) *Capitalists Against Markets*, New York, Oxford University Press.

Thelen, K. and Kume, I. (1999) 'The Effects of Globalization on Labor Revisited: Lessons from Germany and Japan', *Politics and Society*, **27**, 477–505.

Modeling complementarity: multiple functions and different levels

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Whether we consider corporate governance (CG) and industrial relations (IR) to be complementary or not depends on what outcomes we are interested in. Any notion of complementarity requires specification of a utility function—but Höpner's review shows that the literature, in fact, offers us several competing models (agency costs *versus* transaction costs *versus* causal models, etc.). It will probably prove useful to see these as different dimensions rather than as mutually exclusive. In this case, a schematization of the various functional linkages between CG and IR is needed.

Given two institutional domains such as 'corporate governance' and 'industrial relations', models of complementarity make take several general forms:

(i) CG $\rightarrow$ IR
(ii) CG $\leftarrow$ IR
(iii) CG $\leftrightarrow$ IR
(iv)

$$\begin{tikzcd}
\text{CG} \arrow[dr] & \\
& \text{Firm strategy} \\
\text{IR} \arrow[ur] &
\end{tikzcd}$$

Corporate governance may be seen as an independent variable facilitating or constraining patterns of industrial relations—or *vice versa*. Or both factors can be seen as independent variables whose interaction effects are important for some third institution or performance outcome. More complex versions may consider additional domains, such as welfare state institutions.

Next, how are the various domains actually linked? Let's take two examples from the literature.

Hall and Soskice: Their model stems from the field of industrial economics and is specified as a *transaction cost* model (Hall and Soskice, 2001). Their model interprets the German case as having patient capital and employee voice as complementary institutions contributing to German industrial success. Commitment by investors supports stable long-term employment, investment in worker training, and cooperative industrial relations. These institutional complementarities are closely linked to dynamic (X-) efficiency in lower volume, high quality product markets that require high skills (Streeck, 1992). This view fits model (iv) above. Change in one domain would take effect through firm strategy and performance.

Roe: Mark Roe specifies his model in terms of *agency theory* (1999, p.194). The focus is on how industrial relations impacts corporate governance. Similar to Hall and Soskice, Roe sees concentrated ownership and co-determination as 'complementary' in the sense of being mutually reinforcing, but in a very different way. The argument is that co-determination leads to poor managerial accountability by dividing the supervisory board into factional benches, diluting the board's overall powers and promoting collusion between management and employees (Pistor, 1999). Co-determination increases agency costs to shareholders because 'diffuse owners may be unable to create a blockholding balance of power that stockholders would prefer as a counterweight to the employee block'. In this way co-determination impacts ownership structures, making concentrated ownership the only effective 'solution'. Conversely, co-determination is 'in tension' with dispersed ownership[5] and will result in lower numbers of widely held corporations. Roe's model stipulates a direct causal impact of IR on CG, as shown in (ii), above.

Thus, different authors stress different causal arrows. We could easily add to the list by considering how CG impacts IR (model i) through patterns of investment and degree of control. Model (iv) could be extended to account for indirect impacts, such as where CG impacts firm strategy, and this in turn has an important impact of the development of IR. A second point is that where Hall and Soskice think in terms of the commitment of investment to particular firms or arm's length market investments, Roe is thinking in terms of distributional conflict between social classes. We may add a third dimension of corporate accountability, where investors and employees are linked in monitoring management. Höpner and I have discussed these three distinct types of linkages in our work (Jackson *et al.*, 2005). These considerations show a huge complexity in the number of causal arrows, and the multiple mechanisms linking investment, distribution and control need to be specified.

In sum, we might reasonably assume X as being complementary to Y for doing Z. But real world social actors must deal with *multiple functions* (Z_1, Z_2, Z_n) and trade-offs between them. Making inferences about the overall complementarity of two institutions, let alone their causal relationship, would require a meta-model to sum up all the possible functions. To make matters worse, utility functions are not given 'naturally' but relate to *strategic choices* by actors, and thereby remain empirically contingent (as discussed by Crouch). The fit between institutions is often an 'unintended' result of incremental adaptations, as shown by the reconfiguration of Japanese wartime institutions toward new ends in the post-war period (Aoki, 1997). Moreover, we would have to account for *exogenous conditions*. For example, corporate governance faces problems of both 'over-investment' and 'under-investment', depending on the lifecycle of firms, sectors and economies. This raises serious issues about the scope of economic models and their relationship to empirical research. For now, we can observe: Institutions or 'domains' often

[5] Logically, 'tensions' may exist as the inverse of complementarities, although existing literature has yet to make this explicit and think about how to label these cases.

perform multiple functions and we cannot tell *a priori* which utility function will drive overall performance—e.g. be most relevant to economic performance under a given set of conditions (states of nature).

A closely related issue is that any model must specify the level where complementarity is assumed to operate. Here the distinction between functional domains and specific institutions is crucial. The term *domain* designates some historically given or common sense vision of how functions cluster together, and often implies a specific constellation of collective actors. Corporate governance may be considered as a domain in terms of various functions—fostering investment, allocating risks, securing returns etc. But each domain, in turn, is itself a 'system' that consists of distinct *institutions*—patterns of ownership, corporate law, financial regulations, boardroom practices, etc.

Does complementarity exist at the level of domains (e.g. with respect to the way a function such as firm-specific investment is performed) or of specific 'historically individual' social or legal institutions (e.g. independent directors, co-determination, etc.) within those domains? One institution in the CG domain may be compatible with one element of industrial relations, but less so with others.

My comparison of Germany and Japan may be illustrative here (Jackson, 2003). Both countries are grouped together by the Varieties of Capitalism literature as having long-term committed capital as well as labour. As capital relations become more marketized, this poses different problems for each country because long-term employment is backed by different institutions with different social and political foundations. German works' councils are less resistant to corporate restructuring because they have strong legal rights to representation, strong employment protection, and a strong welfare state to which to externalize the costs of adjustment. Japanese enterprise unions also have strong employment guarantees but are unable to externalize adjustment costs to the state. As a result they face greater dilemmas when confronted with changing organizational boundaries. In short, we see similar functional complementarities but different institutional linkages. To sum up: understanding how corporate governance and industrial relations interact depends on what models are used to specify their relations across different levels of analysis.

The two issues discussed above compound themselves if we attempt to apply the concept of complementarity to institutional change or the evolution of social systems. Indeed, much sloppiness or confusion in the literature comes from moving from complementarity in some dimension of performance, to the causation of institutional outcomes themselves. Each economic model captures just one dimension of economic life and represents just one causal factor. Moreover, institutional forms are relatively robust to the varying economic functions for which actors utilize them.

In my view, these functions are often blurred in economic models. First, institutional forms are often equated with a specific function. Hall and Soskice have some tendency to do this, which is why their typologies concern two 'types' rather than a wider array of social forms. This points to the age-old problems of linking economic and sociological models of action.

Secondly, a strong relationship is assumed between increasing returns from complementary institutions on the one hand and the inherent viability of an institution on the other. Even leading economic theorists such as Aoki (2001) and others have not adequately addressed this distinction in their written work. It is tempting, and probably quite correct, to think that some institution A may only be viable/efficient/able to survive in combination with certain other institutions. This assumption is the basis for all comparative and 'configurational' approaches to economic institutions. For example, the stock market may only be viable (or will be more viable) with strict legal rules for disclosure. But this does not mean that institution A is either a necessary or a sufficient condition for institution B. Necessary or sufficient conditions for an institution to exist are only a very special case of complementarity. Put another way, if we have two complementary institutions A and B, it makes a big difference whether we are saying a change in A will lead to changing performance of B, or to a change in B itself.

References

Aoki, M. (2001) *Towards a Comparative Institutional Analysis*, Cambridge, MA, MIT Press.

Aoki, M. (1997) 'Unintended Fit: Organizational Evolution and Government Design of Institutions in Japan'. In Aoki, M., Kim, H. and Okuno-Fujiwara, M. (eds) *The Role of Government in East Asian Economic Development: Comparative Institutional Analysis*, Oxford, Clarendon Press, pp. 233–53.

Hall, P. A. and Soskice, D. (2001) *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, Oxford, Oxford University Press.

Jackson, G. (2003) 'Corporate Governance in Germany and Japan: Liberalization Pressures and Responses'. In Yamamura, K. and Streeck, W. (eds) *The End of Diversity? Prospects for German and Japanese Capitalism*, Ithaca, NY, Cornell University Press, pp. 261–305.

Jackson, G., Höpner, M. and Kurdelbusch, A. (2005) 'Corporate Governance and Employees in Germany: Changing Linkages, Complementarities and Tensions'. In Gospel, H. and Pendleton, A. (eds) *Corporate Governance and Labour Management in Comparison*, Oxford University Press, pp. 84–121.

Pistor, K. (1999) 'Codetermination: A Sociopolitical Model with Governance Externalities'. In Blair, M. M. and Roe, M. J. (eds) *Employees and Corporate Governance*, Washington, DC, Brookings Institution, pp. 163–93.

Roe, M. J. (1999) 'Codetermination and German Securities Markets'. In Blair, M. M. and Roe, M. J. (eds) *Employees and Corporate Governance*, Washington, DC, Brookings Institution, pp. 194–205.

Streeck, W. (1992) 'Productive Constraints: On the Institutional Conditions of Diversified Quality Production'. In Streeck, W. (ed.) *Social Institutions and Economic Performance*, London, Sage, pp. 1–40.