The Transatlantic Exchange of Ideas and Practices:
National Institutions and Diffusion

by

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The Transatlantic exchange of ideas and practices:
National institutions and diffusion

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Introduction

The re-emergence of the US economy in the world economy at the close of the twentieth century is coupled closely with the resurgence of its high technology industries. The structural adjustments in the older industries of steel, textile, and mining having been made in the 1980s and 1990s, US productivity growth boomed in the new information sectors, especially in computers. This growth has served as an engine for increasing corporate profitability that has, in turn, funded new investments and job creation. In all, the effects of this new economy have followed a classic economic pattern common to all countries.

The stunning productivity growth, low unemployment, and leadership in the new technologies are the features that characterize the new American challenge. Why the US should lead in the developed world economy in these areas is a question that is not at all well explained by the usual aggregates of labor and physical and human capital. It is not surprising, therefore, that the discussion of the sources of American growth has led to a search for the institutions, rather than factors of production, that foster high productivity and technological leadership.

There are several institutional facets peculiar to the United States that are widely believed to have stimulated the growth of the new economy. These facets of flexible labor markets, venture capital, and porous boundaries between universities and research have permitted new industries, largely in technology intensive sectors, to be created in the United States more rapidly than elsewhere. In France, for example, there have been important efforts to increase venture capital and new firm equity listings and to allow scientists and research centers to

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1 See Robert Gordon, [http://faculty-web.at.northwestern.edu/economics/gordon](http://faculty-web.at.northwestern.edu/economics/gordon).
commercialize themselves their scientific findings. The American resurgence is, far more so than in the 1960s, understood to be an institutional challenge.

This attention on the US resurgence strikes a familiar note sounded in the celebrated book of the late 1960s by Jean-Jacques Servan Schreiber (1967). Yet, the comparison is also misleading. He proposed that American economic dominance stemmed from the operating efficiency of large multinational corporations. He cited above all that American strengths derived from efficient practices that the large multinational corporation brought to Europe. The most radical insight of this book -which is still sorely neglected in current discussions on the US resurgence- is that organizing principles, not technologies, drove the success of the American company.

This book had the effect of re-enforcing a trend already long underway in Europe, namely, the move toward the amalgamation of smaller enterprises into large corporations. In fact, in many European countries, the largest firms came to dominate their national industries in larger proportion than the American case. Large firms are, or so was the implication, simply a shorthand way of saying better practices.

In retrospect, this Transatlantic diffusion did not challenge the dominant institutional frameworks that developed in many European States. It was a diffusion that largely left its legacy in the legitimation of the large corporation, on the one hand, and in the adoption and re-working of practices. These practices consisted of accounting, divisionalization, pay incentives, and the rationalization of materials, among many others. The rise of the American consulting firms, and their inculcation in Europe, rode upon this rising sea of operating
practices that swept eastward from the US.² It were these practices, such as swept under the rubric of “Fordism,” that provided firms with the capabilities to compete effectively in world markets. Thus, American practices, if adopted, lead to American capabilities. At least such was the claim.

In the minds of many commentators, these practices were linked to the institution of the large corporation. Only in this regard did American practices become linked to an institutional challenge. In fact, for many contemporaneous with Servan-Schreiber, the post-war period presented the increasing powers of the State and economic planning across all industrial countries. If there were to be an equifinality towards which all countries converge, it would be the powerful Keynesian State that regulated and managed the economy.

This belief in the large firm and State appears anachronistic, and yet this is perhaps the enduring lesson. It is this ambiguity in the efficacy of institutions and practices that is the outstanding feature of the diffusion of economic knowledge. As a consequence, the diffusion of knowledge is always accompanied by a debate among competing ideas.

The new American challenge poses concretely the problem of identifying complex causality and competing explanations. The desire to ape the technological and economic performance of the United States has called for the creation of more entrepreneurship, which in turn is believed to be the outcome of venture capital and mobile labor markets. Largely independent of this particular challenge, European financial markets have increasingly confronted pressures from large American institutional investors to create greater transparency, to

² See Kipping (1999) and McKenna(1999). Boltanski (1982) and Djelic (1998) describe as well the important missions of productivity sent by France, among other countries, to the United States following the conclusion of the Second World War.
restructure large holding companies, and to reduce fiscal impediments to developing equity markets.

This new American challenge is then a composite of two forces. It consists on the one hand of financial market pressures for institutional change that fall under the rubric of globalization. On the other hand, the new American challenge is embodied in the commercial competition driven by new technologies that induces indirectly a call for changes in labor and educational institutions. In both cases, the debate over practices and institutions is reflected in a debate over ideas about the causal relationship between new institutions and performance and the political ramifications. Thus, integral to the ideological debate is the inherent ambiguity over what better practices are and over the politics of change.

At the core of these issues is the question of why better institutions or practices do not simply diffuse across national borders. To address this complexity, a body of literature called “national systems” has developed over the past decade. This literature has migrated from explaining why one country is richer to why many countries are rich and yet are institutionally different. This is an important distinction. The former emphasis implies that there is a best configuration of institutions and practices. The second approach attempts to explain the variety of institutional configurations that support particular innovatory and productive capabilities.

The varieties of national systems approach is able to reconcile -sometimes by a felicity all too flexible- why rich countries show such wide differences in institutions, such as financial markets or the size distribution of firms. However, it also poses another set of issues. Given

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3 See Shonfeld 1965; Hall 1989
different national systems, is diffusion between systems possible? Can practices diffuse without institutional diffusion? More concretely, must France adopt American institutions in order to enjoy higher productivity and technological leadership?

These are frequently posed questions that beg a more fundamental issue: how tightly coupled are institutions and practices? The transfer of best practice literature has generally avoided this question by allowing for “hybridization”, that is, for the recombining of elements of two different systems.\footnote{See Boyer, 1998, for an insightful analysis of hybridization and work systems. Kogut and Zander (1992) discuss the recombination of firm capabilities; Stark (1996) proposes that societies also change by recombination.} In itself, as will become clearer, recombination poses filtering out bad experiments from good ones. Thus, even at the level of practice, there are good and bad configurations. Not all hybridizations are good ones.

Hybridization is distinct from the more penetrating issue regarding the coupling of practice and institutions. The soft underbelly of the national system literature is the problem of institutional change. If such systems are composed of coupled “complements”, then one element cannot be removed without affecting the whole system. Yet if individual practices are anchored in institutional systems, then adopting better practices or new technologies confronts the rigid and yet fragile institutional balance.

Clearly, this static portrayal of national systems and diffusion does not conform to the wide evidence that practices diffuse, even if subject to cultural re-interpretation.\footnote{Brannen, et al., 1998; Westney, 1987; Kogut, 1997; Zeitlin, 2000.} There is a theoretical difficulty in coupling diffusion with complementarities. For elements that are parts of complementary systems, the diffusion of single elements can decay performance
rather than help. The idea of co-evolution of organizations and technology has played the theoretical role of resolving this conflict between diffusion and complements (Dosi and Kogut, 1993). By allowing elements to find each other by experimentation and imitation, co-evolution permits “coupled change” to proceed by identifying some avenues for adaptation while ruling out others.

These ideas have been adumbrated in many literatures and yet not satisfactorily developed in regard to two related sets of issues. The first is that the adoption of new practices can be institutionally neutral and does not require a re-coupling of institutions and practices. In this case, the search for better practice is often a cognitive problem, albeit one rooted in salient work identities and in the local politics of careers and power. The second set of issues concerns the case when the adoption of practices requires institutional change. In this case, the impediment to change is often not only cognitive, but also entails national political struggles. Change is possible, but is achieved through the political strategies of powerful interests.

These are indeed complex issues that are deserving of simplicity in analysis. I propose to simplify this discussion by presenting a Boolean description of the arguments. This description places the ideas of complements within the tradition of experimental designs and comparative institutional analysis. To a surprising extent, the varieties of national system approaches return to an older body of ideas associated with functionalism. What this analysis shows is that ambiguity is inherent in deciphering causal effects. Even in the case of bootstrapping from what is known, many possible evolutions are feasible. Politics and ideology are not so much the consequence as the necessary components to stabilize national institutions into believed coherent systems. Adaptation is possible exactly because these systems are coupled not by technological givens, but by nominal beliefs.
I illustrate this approach by considering the diffusion of practices, institutions, and people. I show that the United States stands out as a particularly unusual national configuration of institutions, because it represents an “open system” that serves as a source for world innovation, while being deficient in some of its own institutions. This analysis raises the issue of whether the American model can, and should, in fact be imitated by other countries. France, in turn, is currently engaged in a deep debate over such practices as stock options. This debate is lodged within the ideology of the importance of adopting foreign practices to improve performance, but in the peculiar form that certain factors, namely managers, clearly benefit. Whether such practices constitute Pareto improvements are very unclear.

**A Boolean Primer on Institutions and Practices**

The literature on the varieties of capitalism varies widely in approach. Some approaches consist of the claim that countries are different in their business systems and offer a list of factors by which to make comparisons. Or sometimes an approach simply claims that institutions matter and countries differ in their political ideologies and economy in how they achieve social consensus.

More ambitious approaches ride upon notions of complementarities and institutional equilibria. In one version of this approach, a country is characterized by a number of actors who are institutionally represented. They achieve a political balance that also permits effective coordination in the workplace. It is this coupling between institutions that permit the political entente among corporatist actors that support the coupling in better practices.

A good example of this latter approach is the work of David Soskice on Germany. Soskice (1990) proposes that the institutions of labor, enterprise hierarchies, banking, and business associations characterize Germany as an ideal type of “corporatist” solution to social cooperation. Each of these institutions are represented by formal institutions or dominant
actors (the Central Bank and governments also play a role.) These institutional actors bargain to create a “high equilibrium” that supports the coordination of work to produce quality export-oriented products.

Thus, the national systems approach poses a theory that explains the composition of institutions and their relation to economic performance. These theories are often fitted to rich country cases and suggest that the observed institutions are complements, that is, the bundling of specific institutions are sufficient for explaining the economic performance.

To validate such claims, some comparative studies try to isolate an effect by quasi-experimental design. For example, Bendix (1956) in his study on the relationship of authority systems to national development chose Russia, the UK, Germany, and the United States as four countries, each which occupied a single cell in his two-dimensional framework. Since he had two causes and four countries, he effectively created a 2 by 2 factorial design.

The construction of experimental design using a small number of cases is a common template used in comparative research. Charles Ragin (1987) offers the most rigorous treatment of this approach that can serve as a canonical model in comparative international business research. Ragin formalizes and extends the comparative method of John Stewart Mills by using a few simple rules of Boolean algebra.

Consider the argument of Masahiko Aoki (1990) that the strength of the Japanese firm relies upon three duality principles that can be summarized as the joint presence of the main banking system, vertical ranks for promotion, and horizontal control among workers and
suppliers. He argues that when these three elements are present, they produce a truth condition of a high performing economy. We can represent this by the following claim:

<table>
<thead>
<tr>
<th>Main Bank</th>
<th>Vertical Rank</th>
<th>Horizontal Control</th>
<th>Truth Condition: Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The ones indicate that these conditions are present. Aoki proposes in other words a 3 factorial design. To consider all the possible cases (that is, combinations), we would need to look at $2^3$ or 8 combinations. Of course, Aoki does not engage in this comparison and is content to propose his theory as “fitting” the Japanese case. Most of the studies conducted in relation to his theory have looked at variations within Japan, especially between firms that belong and do not belong to business groups. Of course, these studies run into a selection bias (they are already chosen to be members or not prior to looking at performance). Nor do they test at all adequately the claim that all three principles must be present in order to achieve high performance. Yet these studies are reasonable first approaches to look at how institutions influence performance within a country.

However, this approach is not adequate for deriving any solutions regarding whether these three duality principles have an effect on performance in other countries. This point is not minor, as there has been a significant amount of policy advice given to countries to adopt foreign institutions as a whole because of their jointness and their proven value in producing high performance outcomes.

The extrapolation of these findings to other countries is stymied by four problems. The first one is easily treated and is an example of spurious causality as delineated by Simon (1957).

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7 We do not have the space here to develop this notion of “jointness” in relation to the recent work in complementarities. For such an analysis, see Kogut, MacDuffie, and Ragin 1999.
This problem is easily treated by Ragin’s comparative Boolean methodology. In particular, we will utilize the following Boolean rule. A cause A can be present (denoted as A) or absent (denoted as “a”). In one case AB are two factors that are both present and are associated with a truth condition of high performance. In a second case, factor A is still present but factor B is not, and yet the outcome is still high performance. By Boolean algebra, given that the truth condition is the same, $AB + Ab = A$. In other words, only cause A is causally related to the outcome of high performance. Indeed, for this comparison, A is \textit{sufficient} to cause high performance. In the absence of other causes, A also appears as a \textit{necessary} factor.

Let us reconsider the Aoki formulation more carefully. Using now our binary symbols of 1 and 0 rather than upper and lower case letters, we can represent Aoki’s claim, as we saw, as mapping the combination of \{1 1 1\} to the condition of high performance. What if we found a second country, say Korea, that had only two of these conditions but still had high performance? Comparing the two cases, we have

\begin{align*}
\text{Japan:} & \quad 1 1 1 \\
\text{Korea:} & \quad 1 0 1
\end{align*}

We can now conclude that only the first and second causes are causal; condition two is not eliminated by Boolean algebra.

The second problem falls under the label of \textit{functional equivalence}, as first analyzed and studied by Merton (1949). To illustrate this problem, consider a case where we compare Korea to a third country, say France, both of which are high performing (if it seems unfair to compare rich France to moderately rich Korea, keep in mind that there are much poorer countries than Korea.) By assumption, these two countries have the following configurations:

\begin{align*}
\text{Korea:} & \quad 1 0 1 \\
\text{France:} & \quad 0 1 0
\end{align*}
We cannot reduce these expressions further. They represent functionally equivalent institutional configurations to achieve high performance.

Now this conclusion might be troubling to our penchant to want matters to be more precise, such as there is one configuration that dominates all others. But as we have learned from the literature on the varieties of capitalism (e.g. Berger and Dore, 1996), there are many ways by which countries can achieve similar performance outcomes despite different institutional configurations.

The problems of spuriousness and functional equivalence are easily dispatched by the application of a Boolean methodology. However, our third and fourth problems are not fully resolvable. The third is the problem of insufficient variety in the empirical data. As noted earlier, Aoki’s three factorial design implies 8 distinct configurations. These are \{0 0 0\} \{1 0 0\} \{1 1 0\} \{0 1 0\} \{0 0 1\} \{1 0 1\} \{0 1 1\} \{1 1 1\}. What if history does not provide all these experiments? Or what if the research design did not generate a fully saturated model by the force of its sampling methodology?

It is easy to see that we can make an error. Consider the case in which we have sampled Japan and Korea as before in the first two rows and then subsequently consider the case of a third rich country called the US:

Japan 1 1 1
Korea 1 0 1
US 0 1 0

Clearly, we can no longer decide to eliminate the second cause. In fact, this second cause appears as sufficient, but not necessary in order to have a rich outcome. We have now two configurations that are suggested by Boolean reduction. This analysis reduced the complexity of the three cases to two configurations.
Of course, we can in some cases generate “what if” cases based on the empirical data. We know by de Morgan’s law that these two statements are equivalent: France and Germany like wine and neither France nor Germany do not like wine. We can use this rule on the empirically-observed configurations to generate unobserved cases.

The last problem is the perennial obstacle of omitted variables. It is always the case in empirical research (and in theorizing) that we have neglected variables that not only do not matter but also interact with the variables we have chosen. In econometrics, there are statistical treatments to eliminate unobserved heterogeneity, but these treatments are themselves guesses about the distribution of the unobserved error; they do not handle issues of complex interactions.

The effect of the problem of complexity is easily represented by Ragin’s Boolean approach. Consider a comparison of Japan and Chad; Chad looks the same as Korea but is poor. We could conclude that the absence of the second factor is causally responsible for poverty by analyzing the following configuration.

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>Chad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Factor 2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Factor 3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

But we already know that Korea has the same configuration as Chad and it is relatively rich. The contradiction indicates that there is a problem due to an omitted variable and an incomplete theory. If we add in a fourth condition, we might have:

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>Korea</th>
<th>Chad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Factor 2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Factor 3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Factor 4</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Now we see that the fourth variable is causally responsible. But we discovered this only because there was a logical contradiction, and because we expanded our theory to look at a variable in which Japan and Korea agree but Chad differs. It almost looks as if we cooked the
books. Theorizing country differences that do not permit testing is indeed an exercise in exotic and imaginary cuisines. Yet theorizing is indisputably required in order to guide the choice of variables and to prevent the list-like presentation of country differences that is often to be found in the literature.

Boolean algebra does not eliminate all inherent complexity in causal relationships. It does provide, however, a methodology by which to sample countries (i.e. saturate the design) and to characterize the factorial combinations as necessary, sufficient, or causally unrelated. This approach has always been implicit in country comparisons, but yet rarely explicit as a template for conducting comparative research.

**Boolean Algebra of Diffusion:**

The national system literature presents countries as independent experiments, sometimes precariously balanced in an equilibrium in which all actors must continue to agree to perform. However, it is also clear that practices and institutions diffuse across borders. How can we understand the study of Eleanor Westney (1987) on the importation of organizational forms into Japan if we contend that organizational effectiveness is contingent upon rigid institutional configurations? Similarly, the work of John Paul MacDuffie (1993), discussed above, indicates that American factories can adopt Japanese practices (in configurations) and achieve high performance productivity in the US despite different institutions?

Diffusion presents thorny issues to national systems. The problem is that there has been a failure in theory at two levels. The first is to separate the effects of genesis from diffusion. It is perhaps true that certain institutional configurations gave rise to particular practices; this is historical causality. But once such practices are known, they may diffuse to other institutional conditions.
The second level is a failure to understand that actors are far more adaptive than implied by these comparisons and that these practices themselves undergo radical re-interpretations. Within the corporatist balance of Germany, practices at the firm or factory level may change, sometimes by diffusion, but in the context of a discursive search among actors to adapt these practices. It is surely more complex to adapt when practices challenge existing categorizations of work encoded in an existing division of labor, such as skill categories that are tied to prestige and to wages. Yet even here, the political balance among corporatist actors at the macroeconomic level need not be tightly coupled with the changes in work practice adaptations at the microlevel of work and industrial organization.

Work on diffusion is still pretty much trapped in fairly crude analyses that once characterized national comparisons, that is, studies look at how a practice diffuses and by what channels. There is a growing literature on the difficulty of adopting certain kinds of knowledge (e.g. Zander, 1991) and a fledgling body on institutional and political resistance to the adoption of these practices (Kogut and Parkinson, 1993; Boyer, 1996; Berger and Dore, 1996). These studies need to be joined, but they are theoretically quite distant.

As a first pass, let us consider the case of the adoption of a practice by a French firm that is institutionally neutral. In this case, the problem is largely cognitive, for the adopting firm needs now only to understand the right causal combination and to adopt the various elements. The French firm is organized as a hierarchy, with banking investors, and internal recruitment of top managers. We can characterize this system then by the following summary:

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Internal Recruiting</th>
<th>Truth Values: Performance and Quality</th>
</tr>
</thead>
</table>

8 See Kogut and Parkinson 1998 for this argument, and also Kogut 1999 for an analysis of the adaptation of US work practices in Weimar Germany.
Consider now an American firm that has a different organizational structure of

\[
\begin{array}{cccc}
1 & 0 & 1 & 0 \\
0 & 0 & 1 & 1 \\
\end{array}
\]

In other words, the American firm produces at the same level of efficiency as the French firm but at better quality. What can the French firm do? It has control, subject to its negotiations with its managers, over the degree of hierarchy and its internal recruitment (indeed, the 1980s revolution in American corporate life resulted in flatter hierarchies and more external recruiting (Useem, 1996)). Given this, the French firm can make three changes.

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Internal Recruiting</th>
<th>Truth Values: Performance and Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>?</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>?</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>?</td>
</tr>
</tbody>
</table>

It becomes transparent right away that there are 12 experiments to run, as each configuration can take on four different combinations of truth values. This is complicated, so we can make our lives easy by assuming that productivity does not decline.

The first two cases represent hybridization, very much in these sense of Boyer (1998), by recombining American and French practices. These two recombinations represent feasible paths from the French system. It is possible, of course, that these hybrids are superior to the American configuration, in which case there might be reverse diffusion. The third case (in bold) is Americanization, with the wholesale adoption of the American configuration. If the

\[\text{\textsuperscript{9}}\text{With two elements to perturb, there are 4 possible configurations; the firm’s current configuration occupies one possibility.}\]
two first cases both lead to high quality and high productivity, then they are functionally equivalent. If neither works, then the firm is constrained to choose the American configuration.

It should be clear that even in this easy case, finding the right solution is not easy. We have restricted the choice to two factors. Of course, there might be more elements. In addition, a firm might be unable to run all these experiments. As a consequence, it might observe other firms that have experimented, or it might hire consultants. Of course, even then, borrowing might be too inclusive and practices might be borrowed that have little to do with performance. They are like the hitch-hiking genes in genetics, bits of practices that have no clear causal outcome.

**Institutional influences:**

Even in the third case, the new configuration may not do well because of interactions with French institutions. This is the problem of omitted variables discussed above. In this case, the initial configuration might have to include the influence of institutions, e.g. the type of external financial market. In effect, we are now combining practices with institutions and are considering two levels of analysis. In this wider consideration, the initial configuration is the following:

<table>
<thead>
<tr>
<th>Hierarchy</th>
<th>Internal Recruit</th>
<th>Bank Finance</th>
<th>Truth Values: Performance and Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Here, a value of 0 for bank finance means that the firm relies upon equity markets. If the external financial institution is a fixed constraint, there are three possibilities:

1. how a firm finances does not matter to performance;
2. finance matters in conjunction with some configurations but not all;
3. how a firm finances is a necessary condition (with equity finance required in order to achieve quality).

The first possibility represents a null hypothesis. The second possibility suggests that French firms can adopt hybrid forms that suit the national conditions. For different countries, there will be different configurations of practices that generate both high productivity and high quality. An obvious point is that there is not a single best set of practices. But the more important point is that what gets diffused, or should be diffused, from a source country (e.g. the US) varies from country to country. In Italy, given its small firm structure, the adoption of American corporate organization might well decrease productivity. At the same time, external recruiting of managers might help performance.

The idea of core practices is, then, possibly wrong, for it presumes that there are necessary practices. As we have seen, diffusion of practices from one country to the next can be compatible with multiple configurations. In other words, there is no set of best practices, once we admit the choice of practices can depend upon the institutional setting.

The last possibility poses the problem of institutional change. For if French firms wish to achieve both quality and productivity, then there will have to be changes in financial markets. Institutional change is different than adopting practices, for it concerns the social and political agreements among diverse actors. In this wider consideration, not only cognition is a problem (that is, do managers and workers recognize the evidence for a better practice) along with the internal politics of the firm, but also the credible commitments made by various parties to institutions.

Institutional change poses, then, particular problems for diffusion of practices. Of course, the example of superior American quality might seem anachronistic- if it was ever valid. But if we switch the truth value to radical innovation, and the financial system under consideration
to be venture capital (or its absence), we have indeed posed precisely the contentions in the popular press that financial markets are critical for the new economy success of the United States. And in fact, France, Germany, and other countries have introduced new stock markets to provide incentives (through initial public offerings) for venture capitalists.

Yet even the simple idea of introducing a stock market for small firms can pose complex institutional interactions. We have not, therefore, entirely treated the problem of institutional change. For the problem is rarely simply altering a single institution, but rather the consideration of a change on the ensemble of interacting institutions.

Again, an illustration might help. If we return to Soskice’s description of Germany, the corporatist economy is a fragile balance between competing interests. German financial institutions interact with central bank powers and with national and sectoral unions that bargain for wages. The logic of adopting new practices might require changes in an institution. However, changing a given institution might itself cause national agreements to decay.

Thus, it is not simply an issue of whether a firm should equity finance, but how this affects the strategic behaviors of other economic actors. However, the external shareholder representatives of American financial institutions still must sit on supervisory boards consisting of 50% worker and managerial delegates. Whether such piecewise institutional changes are possible have yet to be fully observed. Clearly, such proposals are rejoined with an active debate among the institutional actors.

**Learning to like Root Beer:**

10 The Eichel Plan to forgive taxing German companies for restructuring their holding companies has the appearance of creating more American capital market pressure on firms.
This scenario of the crisis of institutions is a common feature to the current debates in many countries regarding the impact of globalization and the new economy. In part, this debate is about power; and in part it is about persuading each other what needs to be adopted and changed. Given the causal complexity, these debates will be decided not on the technical proof of what matters, but by the power of ideas in politicized contexts.

However, the characterization of national systems as complementary institutions that support production and innovation within a political equilibrium begs the underlying question of when practices and institutions are complements. It is obvious that there are sometimes technical complements. An example is the integer problem in production planning: if a steel blast furnace works optimally at 4 million tons capacity and the iron foundary at 3 million tons, then the optimal configuration is 3 blast furnaces and 4 foundaries. Of course, technical complements do not seem to cover many of the practices discussed in the work practice literature. Hence, complements are sometimes seen as sociotechnical (MacDuffie 1993) or cultural such as in payment systems (Ichinowski, Shaw and Prennushi 1997). Game theory thinks of complements in terms of strategies, or in the credible commitments required to render credible a course of action.\footnote{See the outstanding book by Topkis (1999).} Clearly, the term is more flexible than that suggested by the national systems literature or our Boolean algebra.

In this regard, it is important to remember that complements are often issues of tastes in the sense of aesthetics or proper behavior. This consideration may seem to stretch the meaning, but it is critical to understanding the potential for adaptability. In cuisine, we clearly accept that complements are cultural. White wine is not drunk with most cheeses in France but is in

\footnote{See the outstanding book by Topkis (1999).}
California; corned beef and mayonnaise is possible I am told in the US Midwest but not in New York.

Similarly, debates on the virtues of paying stock options are often couched in arguments regarding complements (e.g. to motivate our managers in *decentralized hierarchies* we have to pay them *options* –the italics indicate the complements). Yet the opposition to stock options often argues that they are tasteless or unfair. Accordingly, in this complex space of culture, technologies, and strategies, there are far more possibilities for adaptation within national systems than presumed. For surely the attitudes towards money and other economic transactions have changed over the centuries (see the wonderful study by Zelitzer (1978) regarding life insurance policies in the late 19th century America).

In this regard, Boltanski and Chiapello (1999) are right to stress the importance of the transformations in the artistic and social critiques of capitalism for understanding the adaptive potential of capitalist economies and their variations and national varieties. To a large extent, adopting complementary practices is a matter of making culturally acceptable what had been anathema before. Issues such as cultural preferences and preferences for certain social outcomes (e.g. equity in income distribution) influence what countries tend to view as acceptable or unacceptable complements.

**Empirical cases of diffusion:**

The national systems models provide the starting-point for understanding diffusion within varying institutional contexts but understate the adaptive potential of economic and political actors to re-interpret practices and institutions. The relationship between institutions and practices is fundamental to understanding the diffusion between the United States and Europe. In this exchange of knowledge between the continents, the diffusion of practices and institutions are often but not always linked. When they are linked, the diffusion of practices
not only may be impeded; their adoption may lead to effects quite different than the home country.

**Diffusion of Practices: The Multidivisional Structure**

An excellent illustration for the diffusion of a practice and its relations to institutions is the diffusion of the multidivisional structure. The history of the diffusion of this organizational structure reflects precisely Servan-Schreiber’s observations that the American firm is more productive because it is better organized. The multidivisional structure was invented in the United States just after World War I by Dupont and quickly spread throughout the American economy. The initial diffusion showed a strong sectoral pattern, and imitation effects strongly characterized its diffusion (Kogut and Parkinson, 1998). Teece (1981) showed that its diffusion resulted in increased profitability for early adopters. The Armour and Teece (1978) calculated that early adoption in the oil industry led to over a 2% increase in return on assets, a sizeable profit for the capital-intensive oil companies.

As is well known now, the multidivisional structure was taken to Europe not only by American multinational companies but also by the active agency of consulting companies, especially McKinsey (Channon, 1970; Kipping, 1998; McKenna, 2000). Moreover, there had been some early experimentation with this form in the UK and in France prior to World War II. In the case of Japan, interestingly, the multidivisional form was discovered by indigenous efforts and its diffusion was quite rapid (Suzuki, 1991).

12 This discussion summarizes Kogut and Parkinson, 1992, while incorporating studies subsequent to the publication of this chapter.
Figure 1 shows the diffusion of the multidivisional structure in some European countries and in Japan\(^\text{13}\) (the chart is normalized for differences in sample sizes among the countries; exact numbers should not be taken seriously.) There are two observations to be made from this chart. The first is the more rapid diffusion of the form in the UK and in Japan. One might hypothesize that the differential adoption of the multidivisional structure reflected the larger size and greater diversification of companies in the leading countries. However, a glance at tables 1 and 2 shows that size and diversification do not seem to be related to the country patterns in adoption. Differences in adoption speed do not seem to be related to the factors found to be important in the US (Kogut and Parkinson, 1998).

The second, and more interesting observation, is that by the 1980s, this form had diffused widely in all of these countries. Why had this form diffused so widely? Most studies on the diffusion of Taylorism show remarkable differences across countries and large debates regarding its introduction (see Kogut and Parkinson, 1993). Clearly, an important possibility is that the adoption of the multidivisional structure was largely *institutionally neutral*. It did not challenge the institutional balance in the adopting countries. Often, divisionalization did not even lead to restructuring of assets, merely reflecting changes in the hierarchical relationships and accounting rules inside the firm. Indeed, in countries such as Germany, the liquidation of companies and their reintegration into the firm not only posed tax liability issues but also removed labor from supervision over the absorbed companies. Thus, it is not surprising that German divisionalization often maintained the fiscal and juridical identity of the companies, while assigning them to reporting lines within the divisionalized holding structure.

\(^{13}\) The European data were collected from archives using the studies of Channon, Dyas and Thanheiser. The Japanese data were provided by Professor Suzuki, drawn from his own study; as I cannot check these data to assure comparability, the Japanese data are only indicative.
Of course, the other possibility is that the introduction of the multidivisional form often reflected a “paper” change rather than deep restructuring. There is no question of an element of superficial changes. And there was also an element of cultural preference, as revealed by a British executive who thought the linking of pay to results was “rather tasteless” (cited in Channon, 1973). Yet the historical record of many of these firms shows consistent efforts to reorganize their companies through rather strenuous efforts. In all, the multidivisional structure diffused because it was a practice that was institutionally neutral in these countries. Where it posed problems -such as in Germany- local adaptations sufficed to render it politically harmless.

It is, however, a different issue to ask whether the multidivisional structure was causally responsible for better performance. Whereas the US studies are fairly clear in showing increased profits to adoption, the European studies are ambiguous at best. The most intriguing study is that of Cable and Dirrheim (1984) that showed no effect on profits for German firms that adopted.

Is it possible that German firms spent fortunes on restructuring and consultancy with little effect on improved performance? This conclusion reflects the possibility that divisionalization had little meaning in the institutional context of Germany. With extensive crossholdings among firms and banks, divisionalization surely did not play the same role as in the US in increasing transparency for the shareholder or in increasing shareholders’ representation in corporate decisions. The many studies on divisionalization in the US never identified the source of the increased profitability. Was it improved accounting, better incentives, or better governance? With such blurred causality, it would not be surprising that the adoption of the divisional structure should have ambiguous results that depend upon the national location of the adopting firm.

*Diffusion of Institutions: Private Enterprise*
The diffusion of practices is a permanent feature of the world economy. With the spread of multinational corporations and their domination of world trade and investment, the diffusion of practices travel these international arteries more quickly. Whereas their adoption always confronts problems of re-interpretation and re-combination with existing practices, diffusion is surely better facilitated today by the increased economic integration.

Institutions, however, do not travel by the arteries of multinational corporations. They reflect patterns of behavior that are inscribed in legal code and in political and economic relationships. Outside the power of any one actor to change, institutions are social agreements that guide and coordinate the interdependent acts of economic actors in a country.

The thesis of Douglass North and his co-authors is that institutions change if the costs of maintaining them are too relative to the benefits of change. For example, feudalism collapsed when the plague decimated the labor supply, bidding wages up and encouraging workers to break their feudal bonds (North and Thomas, 1973). Sometimes change happens by micro-steps, in which institutions corrode by the many decisions of individuals. Thus, feudalism did not collapse by revolution in most cases, but by the increased power of labor to negotiate its liberation during a period of labor shortage. Yet in other circumstances, institutional change occurs through the reconstitution of coalitional support for their maintenance. It is not surprising, then, that institutional change is often motivated by ideological challenges to notions of what is best and right.

One of the most important sea changes in the post-war period has been the curbing of the power of the State in national economies. In the first decades after World War II, the State grew in power and authority in all European countries, as well as in the United States. This
growth was due partly to the military tension of the post-war period that called for large
defense budgets, as well as to meet the demands of social benefits.\textsuperscript{14}

The role of the state, however, varied dramatically by country. State ownership of key
enterprises has been an important influence in France, somewhat less in the United Kingdom,
and even less so in Germany and Japan. With little prior history of government ownership,
France experienced two waves of nationalization, just after the war and with the ascendancy
of Mitterand to the presidency. The UK experimented for thirty years with direct ownership
of steel companies as well as public utilities, before reversing the policy in the 1980s. The
German government owned large industrial enterprises inherited from the Nazi period,
principally Volkswagen and Salzgitter, as well as public utilities, such as the Bundespost or
Lufthansa. Influenced by the American model, Japan did not nationalize enterprises after the
war, and has also privatized many of its utilities.

Given these different traditions, it is not surprising that countries differed dramatically in the
participation of the government in the ownership of companies. Shephard (1976) estimates
the shares of public ownership in major economic sectors to show Germany at 9% in 1950;
Japan at 10% in 1960; the US at 15% in 1960; France at 17% in 1954; and the UK at 25% in
1962. Thus, despite different regulatory regimes, the State took substantial positions in all of
these countries.

This role has been greatly curtailed in the past 10 years. Tables 3 and 4 show that
privatization started in the United Kingdom but quickly diffused to other countries. Thus, in
this case, Transatlantic change started in the UK, even if the ideology has a distinctive

\textsuperscript{14} This literature is too immense to consider to cite. For an incisive study that reflects the bias of its
time, see Shonfeld (1969).
Of course, the value of privatizations reflects how much the State had to sell, as well as the type of assets being sold. Yet the picture shows fairly clearly that privatization diffused widely in Europe in the 1980s. It has not been a prominent feature of the US, where deregulation has been the dominant policy to remove the State from economic influence.

The effects of these institutional policies have been quite different across countries. The case of France is instructive, because State ownership has had two consequences. The first is the impact on the career paths of the elites. French government policy has been implemented not only through indicative planning and fiscal incentives but also through close personal ties. In 1990, 45% of the CEOs of the 200 largest French corporations began their careers inside the government, many of them with degrees from the elite schools (Fridenson, 1996). See also the sociometric study of Kadushin (1995) that confirms the importance of top school diplomas on subsequent friendship among financial elites. As a consequence of the privatizations, the career paths of the French elite are less certain now that they have been since the end of World War II.

The second consequence of the nationalizations and privatizations has been to upset the financial ties between French firms. While the Balladur privatization policy of allocating “noyaux dur” shares to French companies insured a core of French ownership, French ownership links has dissolved in the past 10 years. The deux étoiles of Paribas and Suez no longer exist.

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15 Yergin and Stanislav (1998) provide an engaging history of the ideological origins of privatization during the Thatcher administration in the UK.

16 This pattern of movement from government to industry is known as “pantouflage”, in reference to house slippers; one need not put on shoes to make the transition. It is interesting to compare this pattern to the Japanese. Schaede (1995) finds that the Japanese practice for bureaucrats to descend into private firms plays a similar role. More than 50% of the bureaucrats hired by the ministries graduate from the law school of the University of Tokyo. In 1991, of the 177 former government
longer are important in French ownership patterns. In Germany, the dense intercorporate structures has facilitated a German resistance to the in-roads by foreign equity investments (Kogut and Walker, 2000). In France, loss of bank control and penetration of foreign equity capital are the highest of the major European countries.

Thus, changes in the French institution of State ownership disequilibrated a national system. With decreasing State influence, ownership patterns, career paths and educational training lack a critical complement to their institutional logic. The growing importance of equity investment has opened the door to the discussion of new “complementary” practices, e.g. pay for performance, stock options, that have yet to be re-interpreted in the French context or to be proven in their efficacy.

No wonder that the arguments for such practices are deeply political in the tenure of their debate. The changes in institutions have changed the allocation of power among indigenous actors. In doing so, these actors seek to argue that certain “practices” are better, knowing as well that their adoption would also influence the distribution of income and wealth. Institutional change of privatization, followed by American pension fund holdings, has instigated a discussion of new governance procedures and managerial incentives. The causality of any of these practices is far from established in the French context. But they reflect an attempt to change the acceptable “complementarities” in France by coupling believed high performance practices to higher pay for managers. The sorting of ideology and

bureaucrats that were directors in the 100 largest Japanese firms, 40% were either CEO, chairman, or executive director; 5% of all directors were former bureaucrats.

17 It is instructive to note that the evidence for the economic efficiency of privatized companies is mixed. See Coffee (1999) for a terse review.
Global systems: Skilled labor and the American model

The instability caused by institutional change confirms the bias of the national systems approach that these systems are tightly coupled systems. Yet the histories of the importation of foreign practices and institutions show a large plasticity in the ability of countries to adapt. However, sometimes adaptation is difficult and blocked. Then what happens?

One of the most important adjustments made in blocked systems is the exodus of people to other better performing systems or systems that offer these type of individuals better opportunities. The United States is, in this regard, a predatory system. Lacking the corporatist institutions of Europe, the United States underperforms in many areas, especially in the education of sufficient numbers of skilled technicians and engineers. However, as an open system, it provides a career path for the educated world elite and arguably constitutes a system that innovates for the benefit of the world economy. Predatory behavior and innovation are the two sides of the American system.

There are two important elements to this system. The first are the very close ties between universities, research centers, and business, often at a regional level. In a fascinating comparative study of the French and American biotechnology industries, Michelle Gittelman (2000) found that France and the United States did not differ widely in the quality of their basic science. Both French and American start-up companies showed similar innovatory records; these companies performed better in both countries than incumbent pharmaceutical firms. What explains the better American record of getting science into patented innovations

\[\text{See Manière, 1999, for a representative popular statement of the stockholders revolution in France.}\]
was simply that there are very few French start-up companies and many more American ones. The French scientific system created institutions for science (and for large-scale innovations) but not for radical technological innovations.

The United States has suffered from the shortage of skilled labor due, it is widely believed, to the poor quality of education in many geographical areas. The second important element to the open systems of the United States is, then, its immigration policy. This policy works through two mechanisms. The first is the important role played by higher education in attracting the best students from around the world, then providing them with work visas to stay in the US for high-skill jobs. The second mechanism is the special visas allowed for accepting highly skilled labor into the US, either for university or industrial positions. In recent years, this type of visa has been fully subscribed, with educational institutions complaining that they are unable to fill academic posts with the best candidates in the world as a consequence.

Figures 4 and 5 graph the number of skilled labor immigrants into the US for the past few decades. Because of a change in law, the numbers change in the early 1990s, as do the reporting by individual countries. Clearly, we see a rise in Asian migrants, but we also see political considerations, such as the number of Polish and Irish immigrants –both politically sensitive ethnicities in the US.

But the important point of this chart is the long tradition of the US in accepting highly skilled labor into its economy as part of its technological strategy. As Saxenian has shown in her recent studies, expatriate labor head over 25% of new start-ups in the Silicon Valley (Saxenian, 1999). The US national system is global in its premeditated design to attract the
best-educated and able, a design particularly attractive given the high variance of primary and secondary education.

In this regard, the US succeeds not because it imports practices more efficiently than other countries or because its institutions create the high-skill domestic equilibrium that Soskice claims is the German achievement. The US system succeeds because it identifies the knowledge held by individuals to be the asset that it wishes to import from the global economy. The United States is not a national system, it is a global one.

It may well be hard for other countries, given their institutionalized educational and labor markets -not to mention the frequent cultural outbursts against immigrant populations- to replicate this aspect of the US system. There is, clearly, a collective action problem, insofar that the United States can be seen as predatory and free-riding on the human capital investments of other countries. The term “brain drain” appears to be a peculiarly unfair tax on the educational investments of developing countries. Yet it can also be argued that this drain has led to innovations that, though originating in the US, drive the innovative frontier of the world economy through diffusion and higher productivity.

**Conclusions:**

These short histories of the diffusion of practices and institutions across borders point to the importance of understanding the political economy and cultural context of national systems. Given the high ambiguity in causal relations among practices and institutions, the adoption of new ways of doing things is rarely determined by transparent efficiency. Rather, adoption of

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19 Other countries, especially Germany but also Singapore, have adopted similar policies in recent years.
institutions or practices that impinge upon institutions are accompanied by an ideological and cultural reconfiguration among economic and political actors.

There is a cautionary inference from this analysis. It is hard to isolate a causal factor in the success of another country that, if moved by itself, would have the expected consequences. The multidivisional form is the case discussed above that suggests, even when a practice is institutional neutral, it rarely is sufficient by itself to cause the desired change. Causal complexity is almost always a feature of the diffusion of practices.

A current example is the believed importance of finance and venture capital in the technological success of the US. Yet it is likely that functional equivalents for the raising of capital or for the financing of new projects exist in other countries. The current importation of venture capital also presents institutional conflicts that may impede its efficacy. No doubt there are interested parties to the diffusion of venture capital, as well as parties that would prefer to reinforce existing national sources of finance. The politics of resources in the broad constellation of interests in a country act to influence the conditions by which new actors succeed in diffusing a practice.

It is exactly in this microdynamic by which economic actors seek to decouple and recouple institutions that national systems change, but rarely in the direction that any actor expected (Kogut, 1999). Because complements are defined as endogenous features of the political and cultural landscapes of a country, there is no single set of complementary practices. Convergence towards a single global configuration of best institutions and best practices is itself, therefore, not predetermined by exogenous technical factors. The idea of convergence is the outcome of the ideological debate among interested parties who naively, or cunningly, shape the evolution of acceptable institutions and practices in a country.
References


Merton, Robert, 1949, Social Theory and Social Structure: Toward the Codification of Theory and Research, Glencoe, IL: Free Press.


Tables and figures

Table 1
Share of Industrial Output by 100 Largest Firms

<table>
<thead>
<tr>
<th>Country</th>
<th>~ 1915</th>
<th>~ 1950</th>
<th>~ 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>16%</td>
<td>25%</td>
<td>40%</td>
</tr>
<tr>
<td>Germany</td>
<td>22%</td>
<td>45.6%</td>
<td></td>
</tr>
<tr>
<td>(1949)</td>
<td>(1966)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>39%</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>(1950)</td>
<td>(1980)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>16%</td>
<td>21%</td>
<td>41%</td>
</tr>
<tr>
<td>(1909)</td>
<td>(1949)</td>
<td>(1968)</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>22%</td>
<td>30%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Table 2


<table>
<thead>
<tr>
<th></th>
<th>Single Products</th>
<th>Dominant Products</th>
<th>Related Products</th>
<th>Unrelated Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>20%</td>
<td>28%</td>
<td>43%</td>
<td>8%</td>
</tr>
<tr>
<td>Germany</td>
<td>27%</td>
<td>17%</td>
<td>37%</td>
<td>19%</td>
</tr>
<tr>
<td>Japan</td>
<td>19%</td>
<td>32%</td>
<td>49%</td>
<td>0%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>6%</td>
<td>30%</td>
<td>58%</td>
<td>6%</td>
</tr>
<tr>
<td>United States</td>
<td>7.6%</td>
<td>31%</td>
<td>45.2%</td>
<td>16.2%</td>
</tr>
</tbody>
</table>

*Sources:* For France and Germany, Dyas and Thanheiser (1976); for Japan, Suzuki (1991); for U.K., (1973); and for U.S., Rumelt (1974).
Figure 1

Diffusion of the Multivional Structure in Europe and Japan
Figure 2

Number of Privatizations in Europe and United States
Figure 3

Value of Privatizations in Europe and United States
Figure 4

Skilled Worker Entry into U.S.
Figure 5

Skilled European Worker Entry into U.S.