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RATIONAL LEARNING AND BOUNDED LEARNING IN THE DIFFUSION OF POLICY INNOVATIONS

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ABSTRACT

In political science, rational learning and bounded learning are commonly studied as two opposing theories of policy choice. In this paper, I use a rational-learning approach to reach conclusions about bounded learning, showing that the two theories are not necessarily incompatible. By examining a rational-learning model and the decisions of a set of developing countries to open up their trade regimes, I show that countries are particularly influenced by the choices of neighbouring countries and by particularly successful policy experiences. These are two typical contentions of the bounded-learning literature. I argue that bounded learning and rational learning yield the same results as soon as one drops the rational-learning assumption that there are zero costs to gathering new information. I use the discussion on rational learning versus bounded learning as a basis for exploring more general issues concerning the diffusion of policy innovations.

RESUMEN

En ciencia política, el aprendizaje racional y el aprendizaje limitado son comúnmente estudiados como teorías opuestas. En este artículo utilizo el abordaje de aprendizaje racional para llegar a conclusiones acerca del aprendizaje limitado, demostrando que las dos teorías no son necesariamente incompatibles. A través del examen de un modelo de aprendizaje racional y de las decisiones de un conjunto de países en desarrollo de abrir sus regímenes comerciales, demuestro que los países son particularmente influidos por las elecciones de países vecinos y por experiencias de políticas particularmente exitosas. Estos son dos argumentos típicos de la literatura sobre el aprendizaje limitado. Sostengo que el aprendizaje limitado y el aprendizaje racional arrojan los mismos resultados tan pronto como se abandona el supuesto del aprendizaje racional de que la recolección de nueva información tiene costo cero. Utilizo la discusión sobre aprendizaje racional versus aprendizaje limitado como base para explorar temas más generales acerca de la difusión de innovaciones de políticas.

1. INTRODUCTION

The literature on policy diffusion, both theoretical and empirical, is growing rapidly. The theoretical debate revolves around several possible explanations of why policies initially implemented in particular countries spread to other countries rapidly and in a wave-like manner.

The basic theoretical distinction is whether these policy waves happen because countries confronted with similar environmental pressures respond with the same policy choices but independently of one another, or because the policy choices of one country affect the choices of others, in which case it would be correct to describe the process as 'diffusion.'

When the policy choices of one country affect the policy choices of others, that is, when diffusion takes place, the most important challenge is to identify the particular mechanism at work. Conceptual classifications abound (Brune and Garrett, 2000; Levi-Faur, 2003; Weyland, 2004). A particularly parsimonious one is that of Gilardi (2003), who distinguishes between mechanisms of diffusion where problem solving is the primary rationale for action and mechanisms of diffusion driven by symbolic purposes. The first group of mechanisms includes rational learning and bounded learning, and cooperative emulation and competitive emulation. The second group includes normative isomorphism and coercive isomorphism; in this case, socialization, persuasion, or the desire to signal credibility takes the place of pure utilitarianism.

According to Gilardi (2003), the common characteristic of the first group of mechanisms is that the rationale for following the policies of others is goal-oriented or problem-solving. With rational learning and bounded learning, governments seek

information about the results of policies. The difference between the two learning mechanisms is that, whereas rational-learning governments are supposed to have maximum analytical capabilities and minimum discriminatory abilities—that is, governments would look at *all* relevant policy experience, irrespective of its origins, and would rationally update their beliefs about policies in the light of experience—bounded-learning governments likewise engage in information-gathering activity but do not scan all available experience (Weyland, 2004), and instead use analytical short cuts and cognitive heuristics to process the information. For instance, governments would tend to overvalue the experience of countries that are closer in geographical, cultural, and/or historical terms because a similarity of conditions leads them to expect similar policy results. Hence, according to Gilardi (2003), social or cultural mechanisms of emulation entail that information is sought for utilitarian purposes, but *only* from a relevant peer group.

Note that these two mechanisms—bounded learning and rational learning—imply two fundamentally different approaches to decision making in politics, which are very often tested against each other. Do governments revise their beliefs about the outcomes of policies in the light of experience? Or do their initial beliefs act as a filter that precludes and/or distorts the way in which experience is analysed? Do governments use all available information about policies or do they use cognitive short cuts in the processing of information? In a nutshell, what role does rationality play in decision making about policies?

My contribution to this discussion is twofold. First, I show that rational learning and bounded learning are not necessarily incompatible. I use a rational-learning model to

draw conclusions about bounded learning and learning in policy making in general. Using a rational-learning model to explain the decision, first, of a set of developing countries to open their trade regimes, and second, of Latin American countries to do so, I show that rational learning is compatible with two standard contentions of the bounded-learning literature: (*a*) countries seem to be especially sensitive to the policy experience of countries that are geographically proximate—the *availability heuristic*; and (*b*) countries seem to be especially sensitive to the experience of good performers—the *representativeness heuristic*. Hence, rational learning and bounded learning yield similar outcomes when it comes to explaining *regional* patterns of diffusion. This result calls into question, at least in part, the mutual antagonism so often attributed to these forms of information processing. Moreover, this result suggests that the heuristics associated with bounded learning are perfectly compatible with Bayesian rationality as soon as one drops the unrealistic rational-learning assumption that gathering information has zero costs. In other words, dropping that assumption implies that a rational learner learns from relevant information as much as a bounded learner would.

Second, although this empirical test confirms basic postulates of the bounded-learning approach, I use the criticisms that the bounded-learning literature directs towards rational learning to question the postulates of bounded learning itself. Particularly, I question the capacity of the psychological approach to explain the diversity in patterns of diffusion reported in recent contributions to the literature. In my opinion, a persuasive defence of bounded learning as a general model of the diffusion of policy innovations should demonstrate its explanatory power beyond patterns of diffusion affecting only a region in which there is a clear leading policy model. Note, however, that my goal is not

so much to refute bounded learning as a valid approach as to emphasise the need to go on thinking about important conceptual issues in the diffusion of policies.

The paper proceeds as follows. In section 2, I discuss the current state of the debate about rational learning versus bounded learning in policy making in the context of the burgeoning literature on theoretical approaches to policy diffusion. In section 3, I present the learning model and discuss the empirical results of the analysis. Finally, by way of conclusion, I use the discussion concerning bounded learning and rational learning as a basis for discussing some issues in the theoretical analysis of diffusion, which in my view need further thought.

2. LEARNING

Discussions on learning have recently become a growth industry, especially in the fields of public policy analysis and international relations. This elusive concept has been subject to thorough theorization, clearly unmatched by empirical research.

To briefly mention some approaches, learning can be political (Heclo, 1974), policy-oriented (Sabatier and Jenkins-Smith, 1993), social (Hall, 1993), instrumental (May, 1992), and causal or diagnostic (Levy, 1994). All notions entail an improved understanding of cause-and-effect relationships in the light of experience. However, definitions frequently overlap and concepts vary regarding the subject (who learns) and the object of learning (about what). Also, different concepts entail different consequences. For instance, sometimes learning is merely procedural, involving changes in the policy process or in the capacity of policy advocates to advance their ideas—Etheredge's governmental learning (1981) or May's definition of political learning. In other approaches, learning is about policy content, ranging from learning about particular

policy instruments—Rose's (1991) lesson-drawing—to learning about the ultimate goals of policies and the terms of the policy discourse—Hall's social learning. Finally, some definitions of learning entail a change in behaviour—for instance, in Heclo's and Hall's versions of the concept—whereas others define learning as a change in beliefs that may or may not induce behavioural change—as in Levy. This proliferation leads Bennett and Howlett (1992: 280) to conclude that "there is no shortage of theorization. Our review suggests that, if anything, the concept [of learning] has been overtheorized and underapplied."

When it comes to analysing diffusion—that is, the spread of policies or institutions across regions or globally—two concepts of learning compete as explanations. One is bounded learning, which emphasizes the use of cognitive heuristics in the search for and processing of information; the other is rational or Bayesian learning. I begin the discussion with the latter.

In a rational-learning framework (Meseguer, 2002), governments are supposed to have particular prior beliefs about the results of policies based on historical experience and/or their ideas. Governments observe the experience of countries with different policies; they use that information to update their prior beliefs using Bayes' rule; and they switch to policies with the highest expected utility. Intuitively speaking, applying Bayes' rule entails weighing the observed average experience positively by the amount of information available and negatively by the variability of experience.

To give an example, imagine that governments are interested in learning about the impact of trade liberalization on growth. According to this framework, they observe the experience of a particular number of countries that liberalize and the experience of other

countries that do not liberalize. In order to learn from experience, governments take into account how much information they have; that is, the number of countries they are learning from. Obviously, the more information that is available the better. Governments also take into account whether or not the experience of trade liberalization varies significantly and treat that variability as a proxy of the responsibility of policies for observed outcomes. In this case, the less variable the results are, the better. Thus, it is possible to depict a scenario of 'maximum learning' in which policy makers have very vague prior beliefs about the outcomes of policies and observe a consistent experience among a high number of countries that have liberalized trade. In this scenario, using Bayes' rule entails that governments will give more weight to the experience they observe than to what they believed prior to observing experience.

Note the following features of this type of learning. First, it is assumed that governments' initial beliefs are not too strong or, in the Bayesian jargon, that their prior beliefs are vague. Otherwise, prior beliefs would prevail over experience and learning would not take place. If, for instance, governments have a particular expectation regarding growth after trade liberalization and they have no uncertainty concerning that expectation, then governments would have no incentive to learn. In other words, others' experience with trade liberalization would be inconsequential.[1] Second, rational learning assumes that governments look at *all* available information. Third, rational learning assumes that governments process all available information in the same way. Thus, all governments confronted with the same information will converge on the same posterior beliefs, and consequently on the same policy choices, regardless of their prior beliefs. Finally, rational learning takes place at a fast rate at the beginning of the updating

process, but beliefs become stable soon after the process starts. Rational learning involves a pattern in which an early openness to available experience is followed by longer periods of resistance to change.[2]

The dynamics of rational learning make it especially suitable for explaining patterns of policy diffusion that are global rather than regional. Since the rational approach assumes that actors do not discriminate among sources of information, it has problems explaining a rather common feature of the spread of innovations, namely, geographical clustering. However, I do not see this as a major shortcoming of rational learning because policy diffusion that is regionally clustered is but one pattern of policy diffusion. I discuss this point later.

As it is possible to anticipate, the main criticism that the rational-learning approach confronts has to do with the strong analytical capabilities that rational learning ascribes to policy makers. This is in fact the main counterargument of the psychological approach to learning: policy makers' analytical capabilities are limited. They do search for relevant information, but use various cognitive short cuts in the search for and processing of experience.

According to Kurt Weyland (2004), three characteristics of the diffusion of innovations can best be accounted for by three cognitive heuristics. First, the diffusion of innovations tends to be clustered geographically and exhibits quite a strong regional component. Second, the diffusion of innovations frequently exhibits an S-shaped curve; that is, an initial innovation is followed by a rapid increase in the number of countries adopting the innovation due to an overestimation of initial success. However, as more information is gathered and more sobering evidence is produced, the pace of diffusion

tapers off. And finally, the essential nature of diffusion is that of the spread of commonality amid diversity and the fact that countries with very different functional needs and at very different levels of economic, social, and political development adopt similar policies.

The first feature is best explained by the *availability heuristics*, which implies that governments pay more attention to policy experiences in neighbouring countries than to policy experiences happening in distant places. The second feature can be accounted for by the heuristics of *representativeness*, which leads to an excessive emphasis on an initial episode of success. The third feature is accounted for by the heuristics of *anchoring*, which leads policy-makers to limit policy changes by adapting innovations to the particular needs of their individual countries. Hence, anchoring is responsible for the basic feature of diffusion, that is, commonality amid diversity.[3]

For the purpose of this paper, I carefully review Weyland's criticisms (2004) of rational learning, which in his analysis of social policy reform in Latin America he rejects in favour of the cognitive-psychological view. I challenge some of those criticisms and argue that although his contentions are correct they are not all sufficiently justified. Also, they are possibly inapplicable outside the policy domain he surveys (social policy) and outside the region analysed (Latin America). In other words, Weyland makes general claims about the diffusion of innovations based on a study that does not consider other policy domains and other types of diffusion that are not exclusively regional and for which a clear leading policy model does not exist. More importantly, as the empirical analysis in the next section demonstrates, his insistence in presenting rational learning and bounded learning as opposite approaches to policy-making may be misleading.

To start with, Weyland contends that it is doubtful that countries with very different functional needs adopt the same model as a result of a utility-maximizing approach. Diffusion may be triggered by a search for solutions to problems, but different countries are likely to have very different functional needs even if they share similar problems. Hence, the author concludes that commonality in diversity poses a serious puzzle for rational choice theory.

In my view, although there may be some truth in this contention, I do not think it is possible to generalize regardless of the policy domain under scrutiny. Take, for example, macroeconomic stabilization, a domain in which countries' functional needs are rather similar. It is uncontroversial that all countries want high growth, low inflation, low public deficits, low current account deficits, a competitive exchange rate, and so forth. Hence, Weyland's contention regarding deep differences in functional needs may be sensitive to specific policy domains. Different countries are likely to share functional needs concerning stabilization policies even if they have different functional needs concerning structural adjustment or redistributive policies.

Weyland's second objection is that rational learning cannot account for the typical S-shaped pattern of diffusion. That pattern is one in which a policy innovation spreads slowly at the very beginning, then spreads rapidly as initial success is overestimated, but tapers off later on as more sobering evidence accumulates of the results of the innovation. In his opinion, rational-learning theories that emphasize competitiveness—he considers competition as a subset of the rational-learning approach[4]—cannot account for the S-shaped pattern of diffusion. To quote his argument (2002: 7; 2003: 15): "[I]f diffusion were driven by decision makers' belief that a new model was beneficial to their country's

competitiveness or crucial for attracting much-needed foreign capital, then competitive pressures should cause diffusion to accelerate over time, rather than to peter out (…) Accordingly, diffusion would be expected to follow an exponential curve."

But this is a weak argument. It is assumed that at some point in time more sobering evidence will follow all policy innovations; that is, that either the cognitive bias that leads governments to overemphasize initial success vanishes at some point or all policy innovations produce mediocre results in the medium to long term. This contention too is sensitive to the policy domain under scrutiny. In fact, many innovations produce results along a J-curve, that is, immediately after implementation results are bad or a recession is even induced, and only after a while do policies deliver good results. This inter-temporal character of many policies goes against Weyland's contention that the medium to long run always provides arguments for politicians to be more cautious after a surge of early enthusiasm.[5]

Another of Weyland's criticisms is that, since rational learning entails learning from average experience regardless of origin, it cannot account for a typical feature of the diffusion of policies, namely, its geographical clustering (Lee and Strang, 2003; Gleditsch and Ward, 2003). However, I propose that too often policy diffusion and policy clustering are treated as equivalent and are analysed with the same analytical tools. In my view, policy clustering is but one type of policy diffusion, which is intra-regional or region-driven. Yet some cases of policy diffusion are trans-regional or global. Particularly revealing is Simmons and Elkins' analysis (2004) of the liberalization of the current account, the capital account, and the exchange rate regime. Curiously enough, the adoption of these innovations appears to have been clearly clustered in geographical

terms, and yet the global path of diffusion is far from the expected S-shaped curve. Moreover, depending on the mechanism of diffusion at work, geography may not be the determinant of the spread of innovations. For instance, competition may be the main determinant, such that innovations spread across regions of trade or capital competition (Guisinger, 2003; Simmons and Elkins, 2004).[6]

Just as policies may be regionally clustered without producing the expected S-shaped curve of diffusion globally, so the spread of some innovations may exhibit the opposite trend. For instance, Castro and McNamara (2003) claim that the diffusion of central bank independence was not limited to any region but swept across countries as diverse as Albania, Sweden, Kazakhstan, and New Zealand. Indeed, the global shape of the diffusion of this innovation is an almost perfect S-shaped curve. However, when data is disaggregated at the level of the region, the S-shaped curve holds in some regions but not in others. In some regions, notably Africa, only a very few countries drive the adoption process, which is in any case very slow (Guisinger, 2003; Castro and McNamara, 2003).[7] Hence, policies that diffuse globally need not cluster regionally, just as policies that cluster regionally need not diffuse globally. Overall, my point is that policy diffusion that is regionally clustered and exhibits an S-shape seems to be just one pattern in the diffusion of innovations. Weyland's psychological approach faces the challenge of accounting for patterns of diffusion that do not fit this pattern.

Finally, Weyland sees *anchoring* as responsible for the distinctive feature of commonality amid diversity. But there is plenty of evidence of the opposite phenomenon, namely, *divergence within convergence* in policy choice. According to Weyland, at least in redistributive policy areas, governments rarely adopt a carbon copy of a foreign model.

Instead, they adapt it to their own needs while maintaining its core (2004: 19–21). This conditional diffusion is clearly in tension with another assumption of his approach, namely, that all policy makers tend to apply the same cognitive short cuts: that they share the same cognitive biases, overestimate initial boldness and promise in the same way, and pay equal attention to the same successful experiences. But this assumption is not fully justified and, in my opinion, it is not substantively different from the controversial rational-learning assumption that all policy makers confronted with the same information will process it in the same way.[8]

In section 3, I offer an empirical estimation of a rational-learning model with respect to governments' decisions to open their trade regimes. The empirical test is based on a set of developing countries (in Africa, Latin America, and East Asia) in the period 1964–90. The analysis is carried out in two steps. First, I assume that policy makers learn from average experience of liberalization in their own regions and in the world. I call this model the *'average model.'* Second, I focus on Latin America, and I model the learning process as one in which governments learn from the Chilean experience with trade liberalization only (instead of learning from average experience in the region) and from the experience of East Asian countries only (instead of learning from average experience in the world). I call this model the *'miracle model.'*

The results are tantalizing. While the average learning model cannot explain the decision to liberalize the trade regimes in all the countries under scrutiny, the decision to open up trade in Latin America is clearly related to rational learning from both the Chilean and the East Asian experiences with export orientation. However, this *'miracle model'* is not applicable to other regions of the world. When the favourable results of

trade liberalization in both Chile and East Asia are hypothesized to explain policy choices in African countries, rational learning loses all explanatory value.

Thus, when applied to regional choices, the rational-learning model confirms two contentions of the bounded-learning approach. First, policy makers learn from outstanding performers, as the *representativeness heuristics* predict, and second, proximity is relevant; that is, not all outstanding performances are equally relevant, regardless of where they are located. The fact that neither the Chilean nor the East Asian experience seems to have had any relevance for trade policy choices in Africa suggests that *availability* matters.

These results question a central contention of the policy-diffusion literature, namely, that rational learning and bounded learning are two antagonistic mechanisms for explaining waves of reforms. At least when it comes to explaining the spread of innovations at the regional level, the results of the rational-learning model and of the bounded-learning model are compatible, and indeed the former seems to confirm the latter. In fact, as soon as one drops the rational-learning assumption that gathering information has zero costs, the two models converge. In other words, the results suggest that bounded rationality is also Bayesian rationality when information is costly. Thus, the results bridge the gap between rational learning and bounded learning.

3. RATIONAL LEARNING, BOUNDED LEARNING, AND TRADE LIBERALIZATION

3.1. Background

During the last two decades, a growing consensus has emerged about the failure of restrictive trade practices to promote economic growth. Bad economic performance in countries pursuing import substitution contrasted with outstanding growth figures in the East Asian Newly Industrialized Countries (NICs). In turn, the good performance of the East Asian NICs was associated with the adoption of a radically different strategy based on export promotion. The failure of import substitution coupled with the success of export orientation triggered a process of learning in theory and practice. As a result, in the 1980s and 1990s policy converged towards more open trade regimes.

This story is obviously sketchy. However, it is an accurate summary of a well-established argument: governments adopted export orientation because they learned from experience. This is the argument that I test in this section.

An export-oriented development strategy consists of trade and industrial policies that do not discriminate between domestic products and foreign products, in contrast to an import-substitution strategy, which favours production for the domestic market at the expense of the export market. Exporting is discouraged by the increasing cost of domestic inputs relative to the price received by exporters. This may happen through domestic inflation or an appreciation of the exchange rate following the imposition of import barriers. Import substitution has been identified with the strategy pursued by Latin American NICs during the 1950s and 1960s inspired by the analyses of the Economic Commission for Latin America (ECLA). The strategy rested on two arguments. First, infant industries needed to be protected, at least temporarily. Second, Latin American

countries could not generate foreign exchange by specializing in the export of primary commodities that were subject to declining terms of trade. Following the path of import substitution, countries like Brazil and Mexico achieved phenomenal rates of growth prior to the 1960s. After that, chronic balance of payments crises, increasing public deficits, rampant inflation, and rent-seeking practices led to the belief that import substitution had outlived its initial purposes.

This perception was accentuated by the experience of the East Asian Tigers. Singapore, Hong Kong, South Korea, and Taiwan grew at impressive rates while Latin America stagnated. The success of the Tigers was attributed to the adoption of a strategy of export promotion, in turn inspired by the Japanese experience. In policy circles, success was interpreted as clear evidence of the virtues of the market, which contrasted starkly with the failures of state intervention. Export orientation promoted growth, even during periods of crisis. Moreover, growth and equity seemed not to be incompatible. As a result of these contrasting experiences—or rather, of their interpretation—export orientation became the accepted orthodoxy. It is undeniable that the East Asian countries performed remarkably well. But there is controversy about the extent to which this performance can be attributed to an export-oriented policy alone. Case studies show that export orientation was adopted amid particular constellations of historical, social, and political factors, but advocates of export orientation too frequently disregarded these peculiarities. The idea that success could be replicated by adopting the same policy gained popularity.

A closer look at countries' experiences reveals that the East Asian miracle was simplified along several lines. To summarize, there is one version that considers

development strategies as deliberate, distinct, and unambiguous in both their outcomes and the reasons for those outcomes. An alternative account holds that development strategies are not very strategic, overlap with each other and yield mixed outcomes, and that those outcomes cannot be attributed to policy alone. In the first account, export orientation can be replicated and its adoption somewhere else would produce the same positive performance. In the second account, imitation is problematic. Policies are not adopted in a vacuum; multiple factors affect the outcomes of policies. Hence, success is not a matter of copying. Policy choice is not reduced to political will or lack thereof. On the contrary, choices are the result of very particular conjunctures and factors (Haggard, 1990; Gereffi and Wyman, 1990; Wade, 1990; Westphal, 1990; Rodrik, 1992; 1996; Harrison and Revenga, 1995).

What the detailed accounts of alternative development strategies show is that both the choices and the outcomes of the strategies were the consequence of a very specific combination of variables. As a matter of fact, and to follow Kurt Weyland's argument about the deep differences between countries' characteristics and functional needs, the variability in structural conditions among countries could explain divergent policy choices among regions and within regions *before* the 1980s. However, these country-specific factors are much less effective in explaining why policy converged in the 1980s and 1990s.

One possible explanation of convergence is learning. In fact, the literature about development strategies is pervaded by lessons from success and failure. For instance, Bhagwati (1985: 41) states that "many developing countries learned the hard way by following IS [import substitution] policies too long and seeing the fortunate few pursuing

the EP strategy [export promotion] do much better. Perhaps learning by others doing and one's undoing is the most common form of education." This is precisely the argument that I test next.

3. 2. The Average Learning Model

The first challenge one encounters in testing development policy choices is to come up with a decent measure of trade regimes. The difficulties are both conceptual and practical. They are conceptual since there is no agreement on what criteria to use to characterize export orientation and import substitution. In reality, most authors use some kind of proxy based either on aggregate indices[9] or on disaggregated indicators of openness.[10]

At a practical level, the type of data required to identify trade regimes—average tariffs and their dispersion, quantitative restrictions, export subsidies, tax credits, degree of exchange rate overvaluation—is rarely available in a systematic and comparable way.[11] Instead, I relied on several ready-made lists that classify countries' development and commercial strategies.

The *World Bank Development Report 1987* (World Bank, 1987) provides a list of 41 developing countries for the period 1963–85. This period is divided at the first oil crisis (1973). Countries are classified according to their pursuit of strongly outward-oriented, moderately outward-oriented, moderately inward-oriented, and strongly inward-oriented strategies. The 1992 IMF report *Issues and Developments in International Trade Policy* (Kelly and McGuirck, 1992) provides another list of 36 developing countries with their trade regimes classified under the heads Tight Control, Significant Control,

Relatively Open, and Open Trade. As a complementary source of information, I used the 1994 World Bank Discussion Paper *Trade Policy Reform in Developing Countries since 1985* (World Bank, 1994a).[12]

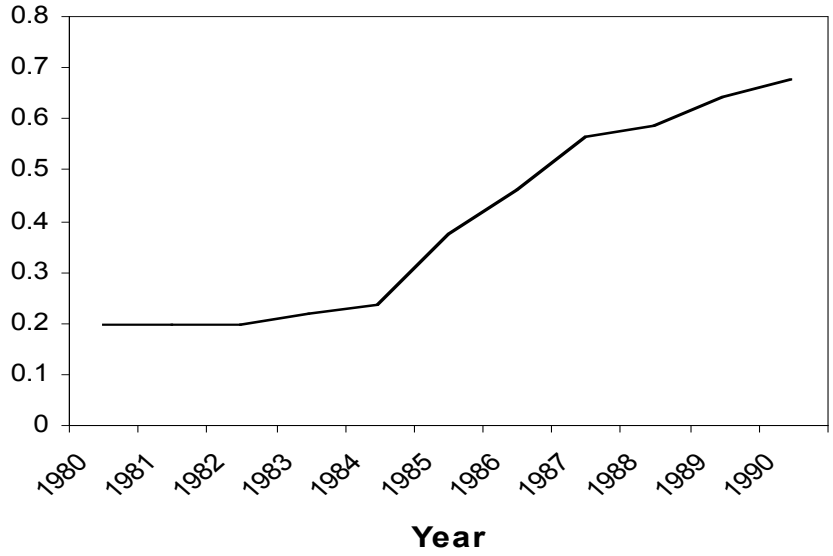
The statistical test I conduct requires a dichotomous indicator of policy. For this reason, I clustered in one value the 'strong' and 'moderate categories' of the World Bank list and the 'control' and 'open' categories of the IMF list. For instance, according to my data, Madagascar implemented a moderately inward-oriented policy from 1963 to 1973. From 1974 to 1986 it adopted a strongly inward-oriented strategy. In my coding, Madagascar appears as having engaged in an import-oriented strategy throughout the period.[13]

The database comprises 51 developing countries, grouped in four regions: Africa, Latin America, East Asia, and South Asia. The years of entry and exit in the database as well as the spells under each strategy are shown in Appendix II. The period under study extends from 1964 to 1990. Of a total of 1,341 country-year observations, 957 are under an import-substitution strategy and 384 under an export-orientation strategy.

During this period, policy clearly converged. Developing countries engaged in trade policy liberalization and, even if not all of them carried the reforms so far as to change their development strategies, many of them succeeded in reducing the bias of the regime. Figure 1 shows the proportion of countries with an open-trade regime. The figure is telling. Towards the beginning of the 1980s, around 20% of the observations corresponded to an open, or relatively open, trade regime. This figure exceeded 60% at the end of the decade.[14]

FIGURE 1

Percent of Trade Liberalizers, 1980–1990



Note: Based on 51 Latin American, African, East Asian, and Southeast Asian countries.
Sources: World Bank (1987; 1994a); Kelly and McGuirck (1992).

In the data, overall rates of economic growth are 1.18% under import substitution and 3.13% under export orientation. Thus, apparently, there is no doubt that performance under export orientation was far better than under import substitution. However, this global picture changes considerably when data are disaggregated at the level of the region and for different time periods.

As Table 1 shows, rates of growth were in general greater under export orientation than under import substitution. However, good performance under export orientation seems to have been an East Asian phenomenon. In this region, even under import substitution, rates of growth were remarkable. Even in the crisis period of 1974–85 results were outstanding. But a comparison of averages with other regions suggests

that this outcome was rather idiosyncratic. A look at performance from 1986 to 1990 reveals that export orientation succeeded only in East Asia. Note that this is the period in which many developing countries engaged in trade liberalization, apparently without the expected effects on growth.

TABLE 1

Growth Rates per Region and Decade

	Export Promotion		Import Substitution	
Region	Growth(%)	N	Growth(%)	N
Africa				
1964–1973	2.67	20	1.76	178
1974–1985	1.14	23	0.53	229
1986–1990	0.60	41	-0.18	52
South Asia				
1964–1973	-	-	-0.29	43
1974–1985	-	-	3.43	60
1986–1990	0.59	4	2.65	17
Latin America				
1964–1973	3.77	40	2.69	140
1974–1985	0.44	41	0.16	175
1986–1990	0.60	59	-1.33	31
East Asia				
1964–1973	6.62	59	2.19	10
1974–1985	4.64	62	3.53	22
1986–1990	6.10	35	-	-
Total (N=1341)		384		957

Based on growth data in Alvarez et. al. (1997)

To test the impact of learning on the choice of development strategies, I assume that governments are rational learners: governments start with some prior beliefs about the expected growth outcomes, X, and the expected variability of results, S, following each policy option (export orientation and import substitution). I have taken these prior beliefs to be the average rate of growth and the variance of results in the sample the year before the entry of a particular country in the database (see Appendix I for details). In each period, governments observe the results in terms of growth accomplished by countries pursuing an export orientation strategy and by those pursuing an import

substitution strategy. So, at time t, governments observe the performance of policy *A = export orientation* and policy *B = import substitution*.

Governments use that information on growth outcomes to update their initial beliefs about the effectiveness of liberalizing their trade regimes. The updating mechanism is Bayes' rule. The updating process proceeds sequentially: the posteriors (beliefs updated in the light of experience) in period *t* are taken to be the prior beliefs in period *t+1*. I also assume that governments decide to liberalize if the posterior beliefs about the effectiveness of opening up to trade outstrip the posterior beliefs about not doing so. I assume that governments do care about the variance of observed results. Politicians can infer the impact of a particular policy on the outcomes by looking at the variance. For policy alternatives *j={A, B}*, the expected utility of government *i* at time *t* has the following shape:

$$EU_{it}^{j}(\mu, s) = \beta_1 \mu_{it}^{j} + \beta_2 s_{it}^{j} + \varepsilon_{it}^{j}; j = \{A, B\} \quad (1)$$

μ_{it} is the posterior belief about average results, s_{it} is the posterior belief about the variability of results (both obtained through Bayesian updating) and ε_{it} is a stochastic component. In words, expected utility (1) is a positive function of posterior average results and, on the assumption that governments dislike uncertainty, a negative function of the posterior beliefs about standard deviation. It is also a function of unobservable components such as reputation, credibility, or political will captured by ε_{it}.

In turn, the posterior value of the mean and the posterior value of the variance for each country *i*, time *t,* and *j={A, B}* under Bayes' rule are

$$\mu_{it} = \frac{\tau_{it-1}}{\tau_{it}}\mu_{it-1} + \frac{n}{\tau_{it}}\overline{x_{it}} = \rho\mu_{it-1} + (1-\rho)\overline{x_{it}}; 0 < \rho < 1 \quad (2)$$

$$s_{it}^2 = \frac{\mathbf{S}_{it}}{\upsilon_{it}} \quad (3)$$

with

$$\tau_{i,t} = \tau_{i,t-1} + n \quad (4)$$

$$\upsilon_{i,t} = \upsilon_{i,t-1} + n \quad (5)$$

$$\mathbf{S}_{i,t} = S_{i,t-1} + S_{i,t} + \frac{\tau_{i,t-1} n(\overline{x_{i,t}} - \mu_{i,t-1})^2}{\tau_{i,t}} \quad (6)$$

n is the sample size, $\mathbf{S_{it}}$ is the posterior sum of squares, υ_{it} is the posterior for the degrees of freedom, and τ_{it} is the posterior for the factor that relates the prior variance of the mean to the sampling variance.

Equation (2) implies that posterior beliefs about average growth are a compromise between prior beliefs and sample information (average observed experience with policies). It is important to note that the bigger the sample size, n, the more weight the sample information receives in forming posteriors with respect to prior beliefs. Hence, so long as information is abundant, there is little concern about prior beliefs affecting the results I show below. On the contrary, if governments have very precise beliefs about the outcomes of policies (if they are very certain about how export orientation will impact on growth), the contribution of observed experience to posterior beliefs will be minor.

Imagine that governments have particular prior beliefs about the expected rate of growth that would result from eliminating quotas and reducing tariffs. Governments also

have access to the growth results of a large number of countries that have already liberalized. As well, imagine that those results are overwhelmingly positive. If that is the case, Bayesian updating predicts that governments' beliefs about the outcomes of embracing export orientation will converge because abundant and consistent observable experience will override politicians' prior beliefs.

To test for possible discrimination among pieces of available information on the basis of geographical proximity, I structured average experience at three levels: first, a country's own experience;[15] second, the experience of the region to which a country belongs (Latin America, Africa, and East Asia);[16] and third, the experience of the world, that is, all experience other than own experience and the region's experience.[17]

Therefore, the empirical test consists first, of producing posterior beliefs for the average results and the variability of results under alternative strategies with the use of Bayes' rule (equations (2) and (3)); second, of comparing those posterior beliefs; and third, of relating the difference in posterior beliefs to observed policy choices using a Dynamic Probit Model. In this model of transitions, current choices, y_{it}, are modelled as a function of a country's prior history of trade policies, y_{it-1}. A matrix of conditional transition probabilities, given some set of independent variables, Z_{it-1}, can be obtained by

$$\Pr(y_{it}=1|y_{it-1}) = F[\mathbf{Z}_{\mathbf{it-1}}\beta + y_{it-1}\,\mathbf{Z}_{\mathbf{it-1}}\alpha] \qquad (7)$$

β indicates the effect of the independent variables on the probability of liberalizing trade at time t given that this liberalization did not occur at t-1 $\Pr(y_{it}=1|y_{it-1}=0)$. The probability that trade liberalization occurs at time t given that it did not occur at

time t-1 $Pr(y_{it}=1|y_{it-1}=1)$ is given by the vector of parameters $\gamma=\alpha+\beta$. Hence γ gives the probability of sustaining an open trade regime. As independent variables, I include the learning variables, that is, the difference in posterior beliefs about average results under alternative status (export orientation and import substitution) and the difference in posterior beliefs about the variability of results also under alternative status, and this for own, region, and world experience.

If we take into account how the utility function has been defined, it is expected that, the greater the posterior beliefs about average growth under export orientation with respect to import substitution, the more likely a switch to export orientation. When results under the same policy vary greatly across time and space, the judgement that policy is not responsible for observed outcomes makes sense. Under the assumption of risk aversion, the greater the variability of results under export orientation relative to import substitution, the less likely a switch to that policy is expected to be.

High variability of results under the same development strategy pervades the data. For instance, in 1986 rates of growth under export orientation ranged from 8.29% in Taiwan and 9.6% in Korea to –4.56% in Bolivia and –6.01% in Mexico. In Latin America, figures such as these coexisted with the better performances of Chile (3.02%) and Uruguay (8.74%).

I argue that a high variability of results under export orientation and risk-averse politicians precluded a quick change to export orientation. Average performance was too noisy to provide reliable information about what to expect from export promotion. Actually, the high variability of results probably showed politicians that “all countries

cannot simultaneously have a positive balance of payments" (Przeworski, 1992: 55) and that, in the end, trade liberalization is a policy with winners and losers.

The results of the estimation of the probability of liberalizing the trade regime are given in the first column of Table 2.[18] The estimation shows that governments were clearly risk-averse in their decision to open up their trade regimes, and this regardless of the geographical level of analysis. Since it became difficult to assign responsibility for observed outcomes to policies, average experience with alternative policies was not relevant to explaining switches to export orientation. However, policy switches occurred.

Without abandoning the rational framework, I model the learning process as one in which policy makers learn only from outstanding performance (as opposed to average performance). Note that focusing on 'winners' helps reduce the noise, hence the uncertainty, that may be conveyed by average results. As I show in the next section, this hypothesis works very well, at least in Latin American countries. When the good performance of Chile substitutes for the average experience in the Latin American region, and the quite homogeneous policy experience of East Asian countries substitutes for heterogeneous experience in the world, the rational-learning model improves its predictive capacity. Note that these results confirm the bounded-learning contention that policy-makers are especially influenced by outstanding results and, in particular, by those outstanding results that are geographically proximate. Neither the good experience of Chile nor the outstanding performance of the East Asian Tigers can explain trade policy choices in African countries, for which these miracles seem not to have been *available* (to follow Weyland's terminology).

3. 3. The Miracle (and Available) Learning Model

In the literature on learning and policy reform, the contention that policy makers learn from geographically proximate experiences is quite well-established, yet it remains untested.

Robinson (1998: 26), for instance, contends that "the early post-war success of Japan seems to have been very influential in determining policy orientation in South Korea and Taiwan, just as these countries' experiences seem to have had subsequent ripple effects in Indonesia, Malaysia and Thailand." However, given the great differences in historical and cultural endowments among regions, these experiences "should have had little impact in Africa and Latin America."

When it comes to Latin America, there are frequent references to the exemplary role played by the Chilean experience with macroeconomic policy in general and certain specific policies in particular (such as pension reform, as discussed in Weyland, 2004). Just to give some examples, Richard Webb, Governor of the Peruvian Central Bank from 1980 to 1985, stated that "this change in perception [in favor of market reforms] … [had] been reinforced by a broad flow of information on the experience, policies and opinion in other countries. The Chilean experience has been particularly influential in Peru" (cited in Williamson, 1994: 373). Enrique Iglesias, president of the Inter-American Development Bank, commenting on the wave of reforms in Latin America, contended that "the ideas developed in the North during the Reagan-Thatcher era were very important in Latin America, but the Chilean experience was far more significant in so far as it provided a viable model." The success of the Chilean experience "was very much noted by other regional leaders." He adds, "Southeast Asia also had some relevance as a

model for Latin America, but it was viewed with some doubts because the Asian region was made up of many diverse countries with different social and cultural environments … whereas Chile presented a far more relevant example to emulate" (cited in Williamson, 1994: 493–494).

However, other practitioners in the Latin American region acknowledge the inspiring role played by the East Asian 'miracle' in the design of their policies. The President of the Venezuelan Central Bank, Miguel A. Rodriguez, stated that "economists and policy makers in Latin America saw the per-capita income growth of the Asian countries over the past twenty years and became more and more convinced that the opening of the economy was the best way to produce a real transformation in Latin American societies …" (cited in Williamson, 1994: 377).

Certainly, closeness in the geographical sense of the word is not a concept that would apply to the East Asian experience with respect to Latin America. However, at least when it came to debating about development strategies, the bulk of the discussion revolved around the contrasting experiences of East Asia and Latin America. If anyone had anything to learn from this pervasive comparison and debate, Latin American policy makers were the obvious candidates. Hence, whereas the East Asian experience was not geographically close for Latin American countries, it was somehow *available* to them through extensive discussion among academics and practitioners.

The results of the application of the rational-learning model when applied to these 'miraculous' experiences are given in Table 2.

TABLE 2

Dynamic Probit Model. Determinants of Export Orientation

Dependent V= EO	Average Model (all sample)	Latin America Average Model	Latin America Miracle Model	Africa Miracle Model
Constant	-3.96***	-8.24*	-10.73**	-3.86**
	(-5.59)	(-1.91)	(-2.36)	(-2.53)
Own Experience				
Average Results	0.04	0.22*	0.14	0.11
	(1.04)	(1.84)	(0.97)	(1.52)
Variability of Results	-0.10*	-0.16	0.07	-0.09
	(-1.94)	(-0.81)	(0.40)	(-1.53)
Regional Experience				
Average Results	0.19	-0.37	0.71*	0.18
	(1.45)	(-0.46)	(1.77)	(1.03)
Variability of Results	-0.48***	-1.01	2.53**	0.80**
	(-2.75)	(-1.19)	(2.17)	(2.23)
World Experience				
Average Results	-0.22	0.41	1.79**	0.17
	(-1.62)	(0.55)	(2.49)	(0.48)
Variability of Results	-0.99***	-1.78*	-1.02	-0.10
	(-3.43)	(-1.94)	(-1.28)	(-0.27)
p-value for F	0.000	0.000	0.000	0.000
Observations	1171	468	442	552

Note: *p<.10, **p<.05, ***p<.01; t-test in parentheses.

The second column shows the results of using a rational-learning model to explain the decision to open up trade regimes in Latin America, with the average experience in the region and the average experience in the world (in this case, Africa and East Asia) considered as relevant information. As it is possible to see, only domestic experience under alternative strategies is positively related to the probability of adopting export orientation. However, Latin American policy makers were discouraged by the variability of results in the other regions.[19]

Results change considerably when the Chilean experience by itself substitutes for average experience in the region and when East Asian outcomes substitute for the average in the world (third column). Both the Chilean experience and the East Asian

experience of export orientation relative to import substitution had a positive impact on the probability of barriers to trade in Latin America being lifted. Moreover, policy makers seem to have been willing to run risks and to adopt export orientation in view of the good results of the Chilean model.

Finally, the fourth column in Table 2 offers preliminary evidence that availability (in Weyland's sense) matters. The existence of models evaluated as successes is not enough to induce policy changes. Those models need to be close or, better, available. In Latin America, the Chilean experience provided a neighbouring model from which policy makers could learn. Also, the East Asian Tigers offered a successful policy alternative that contrasted markedly with the poor performance of trade protection in Latin America. These pervasive contrasts, debate, discussion, and comparisons seem to have made the East Asian experience available to Latin American policy makers, despite not being geographically close. However, neither of these two representative experiences—the Chilean and the East Asian—seems to have been inspiring for African policy makers, who very likely saw both of them as irrelevant to their particular circumstances.

Note that the results of the rational-learning model based on learning from outstanding performances only are in accordance with the results expected by bounded-learning theory. It is proved that governments learn rationally but from close, successful performers. Thus—at least for this policy innovation—the mutually antagonistic nature so commonly attributed to the two types of learning is unfounded. Moreover, what these results suggest is that Bayesian learning relies heavily on the assumption that gathering information is a cost-free process. When this assumption is dropped, the two approaches yield the same prediction.

4. FINAL REMARKS

This paper had two goals. On the one hand, I intended to question the alleged antagonism between bounded learning and rational learning by showing that the latter can be used to test the predictions of the former. On the other hand, I use this discussion not so much to conclude that one approach is superior to the other, but to open up a more general discussion about contending explanations of policy diffusion.

First, I argue that bounded learning seems to be a valid approach for explaining a particular type of diffusion process, namely, one in which the scope of diffusion is regional and in which a clear opinion leader exists. This was the case with pension reform in Latin America, which had Chile as the model to learn from, and trade liberalization, a policy in which the Chilean miracle once again played an inspiring role. Interestingly, the application of the rational-learning model to the decision to open up the trade regime confirms two postulates of the bounded-learning account, namely, that policy makers learn from (a) outstanding experiences and (b) close experiences, rather than learning from average experience. What the paper demonstrates empirically is that learning from an outstanding performer that is close can be perfectly rational on Bayesian grounds. Thus, rational learning and bounded learning converge in their predictions. However, whether this result makes bounded learning a superior explanation of the diffusion of innovations is an open question and probably not the most interesting one. In fact, there are so many unsettled theoretical and empirical issues in this field that searching for an overarching theory of policy diffusion may not be the most fruitful way to proceed. Indeed, I find recent contributions interesting not only for the questions they resolve but also for the questions they leave unanswered.

First, the bounded-learning claim that policy makers learn from policy experiences that are available—especially geographically available—is somewhat at a loss to explain why innovations sometimes spread across regions. Is the existence of a local miracle always necessary to spur the adoption of an innovation in a region? Or may a global hegemon play the same role? Are regions to be defined in strictly geographical terms or alternatively are there other factors that may create regions—for instance, economic competition? Why do some policies seem to cluster geographically without this producing a global S-shaped pattern of diffusion? Alternatively, why do some innovations spread globally while particular regions show a persistent resistance to change or an extremely slow path of adoption? In short, what is the relationship/analytical distinction to be made—if any—between policy clustering and policy diffusion?

Second, the bounded-learning contention that innovations spread along an S-shaped curve does not accord with the variability in patterns that some diffusion studies show (Simmons and Elkins, 2004). Also, the psychological interpretation that attributes this pattern to an overestimation of initial success followed by a more sobering evaluation of experience overlooks the fact that many innovations exhibit precisely the opposite dynamics, bearing fruit only sometime in the future. Thus, does this pattern give a valid account of the spread of *all* innovations or is it policy-sensitive? Note also that the pattern of absolute and relative frequencies that bounded learning implies is compatible with another, more straightforward explanation. As the innovation diffuses, the number of potential adopters necessarily falls. Hence, it may be the case that diffusion tapers off simply because some ceiling of adoption is reached.

Finally, the basic feature of diffusion—commonality amid diversity—results from the heuristics of anchoring. According to this explanation, policy-makers limit the adaptations that adjust the foreign model to the specific needs of their own countries. And since all policy makers tend to apply the same cognitive biases, commonality results. However, this account is difficult to reconcile with the fact that there are notable divergences in the speed and scope with which some innovations are adopted and with the fact that diffusion seems to be conditional on a host of factors. Also, the assumption that policy makers share the same biases may be too restrictive, not to say unrealistic, and actually may be depriving bounded learning of its biggest potential, namely, to explain intra-regional variability rather than intra-regional commonality. (Was the Chilean experience equally available to other countries in the region? Was success equally overestimated? Is it tenable to argue that policy-makers anchor innovations in the same way?).

In my opinion, these are open questions that not only concern bounded learning but should probably be addressed in future studies of diffusion, regardless of the approach they embrace.

Appendix I

Prior Beliefs

Suppose growth, X, is a random variable that follows a normal distribution with an unknown value of the mean μ and an unknown value of the variance σ^2. Suppose that their prior joint conjugate distribution is as follows: the conditional distribution of μ given σ^2 is a normal distribution. The marginal distribution of σ^2 is scaled inverse-χ^2. With this specification, the marginal distribution of μ follows a t-Student distribution.

Thus,

$\mu|\sigma^2 \sim N(\mu_0, \sigma_0^2/\tau_0)$

$\sigma^2 \sim Inv\text{-}\chi^2(\nu_0, \sigma_0^2)$

or

$(\mu|\sigma^2, \sigma^2) \sim N\text{-}Inv\text{-}\chi^2(\mu_0, \sigma_0^2/\tau_0; \nu_0, \sigma_0^2)$

Since σ^2 follows an Inv-χ^2, the following formulas apply.

$$E(\sigma^2) = \frac{S_0}{(\upsilon_0 - 2)} \tag{8}$$

$$Var(\sigma^2) = \frac{2S_0^2}{(\upsilon_0 - 2)^2(\upsilon_0 - 4)} \tag{9}$$

Thus, after specifying values for the mean of the variance (observed value in the sample) and the variance of the variance (twice the value of the variance), prior values for S (Sum of Squares) and ν (degrees of freedom) can be obtained solving those equations. Also, since μ marginally follows a t-Student distribution

$$E(\mu) = \mu_0 \tag{10}$$

$$Var(\mu) = \frac{S_0}{\upsilon_0 \tau_0} \tag{11}$$

from which τ_0 can be obtained after specifying the variance of the mean and having obtained S_0 and ν_0.

TABLE 4

Prior Parameters

	Export orientation			Import Substitution		
Year	Mean	DofF	SofS	Mean	DofF	SofS
1964	1,97	25	483	2,24	19	255
1965	3,83	21	323	2,16	28	624
1968	3,42	19	255	1,04	22	360
1971	8,2	30	728	2,21	61	3363

DofF: Degrees of Freedom
SofS: Sum of Squares
Based on observed average and variance of growth results in the world the year before the entry in the database.

Appendix II

TABLE 5

Countries, Year of Entrance and Exit

Region	Year Beginning	Year Ending	Spells with an EO strategy	
Africa				
Burundi	1964	1990	Never	
Cameroon	1964	1990	1964	1973
Ethiopia	1964	1986	Never	
Gambia	1965	1990	1986	1990
Ghana	1964	1990	1986	1990
Côte d'Ivoire	1964	1990	1964	1973
			1984	1990
Kenya	1964	1990	1988	1990
Madagascar	1964	1990	1987	1990
Malawi	1964	1990	Never	
Mali	1964	1990	1990	
Mauritius	1968	1990	1980	1990
Morocco	1964	1990	Never	
Nigeria	1964	1990	Never	
Senegal	1964	1990	1986	1990
South Africa	1964	1990	Never	
Sudan	1971	1990	Never	
Tanzania	1964	1988	Never	
Tunisia	1964	1985	1974	1985

Uganda	1964	1990	1987	1990
Zaire	1964	1989	1983	1989
Zambia	1964	1990	Never	
South Asia				
Bangladesh	1971	1990	Never	
India	1964	1990	Never	
Nepal	1964	1986	Never	
Pakistan	1964	1990	Never	
Sri Lanka	1964	1990	1987	1990
Latin America				
Costa Rica	1964	1990	1964	1973
			1986	1990
Dominica R.	1964	1990	Never	
Salvador	1964	1990	Never	
Guatemala	1964	1990	1964	1973
			1986	1990
Honduras	1964	1990	Never	
Jamaica	1964	1990	1985	1990
Mexico	1964	1990	Never	
Nicaragua	1964	1990	Never	
Trinidad & Tobago	1964	1990	1989	1990
Argentina	1964	1990	1987	1990
Bolivia	1964	1990	1985	1990
Brazil	1964	1990	1963	1990
Chile	1964	1990	1974	1990
Colombia	1964	1990	1964	1973
			1985	1990
Ecuador	1964	1990	1985	1990
Peru	1964	1990	1990	
Uruguay	1964	1990	1974	1990
Venezuela	1964	1990	1989	1990
East Asia				
Indonesia	1964	1990	1964	1973
			1985	1990
South Korea	1964	1990	1964	1990
Malaysia	1964	1990	1964	1990
Philippines	1964	1990	1985	1990
Singapore	1965	1990	1965	1990
Taiwan	1964	1990	1964	1990
Thailand	1964	1990	1964	1990

Endnotes

[1] Assume that governments can express their initial uncertainty (prior beliefs) about outcomes by means of a probability distribution. Priors can be non-informative—flat or diffuse priors—or they can be informative. If priors are non-informative, the likelihood (observed experience) dominates the priors in the formation of posteriors. Non-informative priors make sense when there is 'insufficient reason' to model prior beliefs in a particular way. However, informative priors make sense when there is theoretical and empirical material whereby prior beliefs can be substantiated, something that very frequently happens in comparative research.

[2] In some forecasting models, the shape of the rate of adaptation to new data is altered with an 'intervention.' This allows the incorporation of external information that carries with it a high level of uncertainty—for instance, an external shock. By changing priors to account for that uncertainty, the rate of adaptation experiences a new peak. Modeling that uncertainty makes the decision maker automatically more attentive to new data.

[3] Weyland (2004) discards other explanations of policy diffusion—namely, the role of international powers, symbolic imitation, and rational learning—on the grounds that these mechanisms cannot account for the three characteristics of the diffusion of innovations already discussed—geographical clustering, the S-shape, and commonality amid diversity. Briefly, according to the author, imposition by international powers cannot account for the regional and neighbourhood effects observed in the spread of innovations. As for symbolic imitation, that is, the adoption of certain policies by way of seeking international legitimacy or recognition, it is not compatible with the typical S-shaped pattern of diffusion. This shape posits that governments do not rush to keep up with the new trends but wait for an innovation to have a minimal track record before climbing aboard. Were governments motivated by the desire to 'keep up with the Joneses,' the diffusion of innovations would be faster than what is reflected in the slow initial upswing of the S-shaped curve.

[4] Competition is an explanation of policy diffusion that is commonly considered to differ from rational learning. At most, it shares with rational learning a certain utilitarian approach. However, the inclusion of competition as a subset of the rational-learning account does not accord with most recent contributions to the literature (Simmons and Elkins, 2003; Guisinger, 2003).

[5] Indeed, this is a feature of most innovations, but exceptions exist. See Way's (forthcoming, 2005) for discussion on the diffusion of financial market deregulation.

[6] Of course, competitors may be located in the same geographical region, and this may be why Simmons and Elkins find policy clustering in their data and, at the same time, very little support for the hypothesis that geography per se explains diffusion (2003: 25). Note that Simmons and Elkins' explanation for clustering is strikingly different from the one offered by a psychological approach.

[7] In my view, Africa poses a challenging and highly appropriate theater of research for the advocates of the 'regional clustering' type of diffusion.

[8] This comment is not so much a criticism of the cognitive approach as a suggestion that a theory based on cognitive bias may have the greatest potential to precisely explain divergence at the margin within convergent policy choices rather than to explain diffusion, especially of the global type.

[9] A frequently used measure is the Effective Rate of Protection. This is a measure of the bias of the trade regime based on the ratio of the Effective Exchange Rate of Importables (EERm) to the Effective Exchange Rate of Exportables (EERx).

[10] Level and dispersion of tariffs, the extent of quantitative restrictions on imports and exports, the degree of exchange rate overvaluation, the existence of export subsidies, rebates and compensation schemes.

[11] See Guisinger (2003) for discussion.

[12] A codebook is available on request.

[13] It could be argued that these lists measure different things. Trade policy is part of a particular development strategy, but does not fully characterize it. However, I consider it accurate to place trade policy regimes as the distinctive feature of import substitution and export orientation. Besides, when it comes to placing countries under one or the other head, the two lists were highly consistent, except for Tunisia. Another somewhat surprising case is Brazil, which appears as moderately outward-oriented in the World Bank Report.

[14] The countries that liberalized their trade regimes during the 1980s were Colombia, Ecuador, Costa Rica, Guatemala, Bolivia, Argentina, Mexico, Jamaica, Trinidad & Tobago, Venezuela, Côte d'Ivoire, Kenya, Madagascar, Senegal, Ghana, Mauritius, Uganda, Gambia, Zaire, Philippines, Indonesia, and Sri Lanka. Peru and Mali launched reforms in the early 1990s.

[15] There a several reasons to be cautious about the robustness of the estimations regarding own experience: first, because Bayesian updating entails that when there is no available experience with one of the policy options, the posterior is equal to the prior; and second, because the non-influence of priors on forming posteriors crucially depends on the number of observations, *n*. Thus, whereas there exists abundant experience under alternative policy choices with regional and world experience, this is not the case with own experience. In the case of own experience, the influence of prior beliefs is unlikely to vanish. However, I do not take this fact to be a problem in the context of this paper since the main claims I am making do not relate to own experience.

[16] I excluded South Asia from the analysis because this region has only very limited experience of export orientation. This lack of information sustained the influence of prior beliefs.

[17] For instance, for Brazil, world experience is the average experience of a particular year in Africa and East Asia under alternative strategies.

[18] Results for the probability of sustaining trade liberalization are not reported given that the very few cases of policy reversals made the estimators of continuity unreliable.

[19] These results should be treated with caution in the view of the high correlation coefficient between two of the independent variables.

REFERENCES

Alvarez et. al. 1997. ACGLPV. *World Political and Economic Database.*

Bennett, C. and M. Howlett. 1992. "The Lessons of Learning: Reconciling Theories of Policy Learning and Policy Change." *Policy Sciences* 25: 275–294.

Bhagwati, J. 1985. "Trade Regimes," in Gene Grossman, ed., *Dependence and Interdependence: Essays in Development Economics*, vol II. Oxford: Blackwell Basil.

Brune, N. and G. Garrett. 2000. *The Diffusion of Privatization in the Developing World*. Yale University. Unpublished manuscript.

Castro, E., and K. McNamara. 2003. "The Diffusion of Central Bank Independence." Unpublished manuscript.

Etheredge, L. 1981. "Government Learning: An Overview," in S. L. Long. ed*., The Handbook of Political Behavior*, 2. New York: Pergamon.

Gereffi, G. and D. Wyman. 1990. *Manufacturing Miracles. Paths of Industrialization of Latin America and East Asia.* Princeton, N.J: Princeton University Press.

Gilardi, F. 2003. "Spurious and Symbolic Diffusion of Independent Regulatory Agencies in Western Europe." Unpublished manuscript.

Gleditsch, K. S., and M. D. Ward. 2003. "Diffusion and International Context of Democratization." Unpublished manuscript.

Guisinger, A. 2003. "Trade Protection and Liberalization: Is There a Role for Diffusion?" Unpublished manuscript.

Haggard, S. 1990. *Pathways from the Periphery: The Politics of Growth in the Newly Industrial Countries*. Ithaca, NY: Cornell University Press.

Hall, P. 1993. "Policy Paradigms, Social Learning and the State: The Case of Economic Policy Making in Britain." *Comparative Politics* 25 (3): 275–96.

Harrison, A. and A. Revenga. 1995. "The Effects of Trade Policy Reform. What Do We Really Know?" NBER Working Paper No. 5225. Cambridge, MA: NBER.

Heclo, H. 1974. *Modern Social Politics in Britain and in Sweden*. New Haven: Yale University Press.

Kelly, M. and McGuirck, A. K. 1992. *Issues and Developments in International Trade Policy.* Washington, DC: International Monetary Fund.

Lee, C. K., and D. Strang. 2003. "The International Diffusion of Public Sector Downsizing." Unpublished manuscript.

Levi-Faur, D. 2003. "Herding Towards a New Convention: On Herds, Shepherds and Lost Sheep in the Liberalization of the Telecommunications and Electricity Industries." Unpublished manuscript.

Levy, J. 1994. "Learning and Foreign Policy: Sweeping a Conceptual Minefield." *International Organization* 48 (2): 279–312.

May, P. 1992. "Policy Learning and Failure." *Journal of Public Policy* 12 (4): 331–354.

Meseguer, C. 2002. *Bayesian Learning About Policies*. Madrid: Instituto Juan March de Estudios e Investigaciones.

Meseguer, C. Forthcoming 2004. "What Role for Learning? The Diffusion of Privatization in Industrial and Latin American Countries?" *The Journal of Public Policy.*

Przeworski, A. 1992. "The Neoliberal Fallacy." *Journal of Democracy* 3 (3) (July): 45–59.

Robinson, J. 1998. "Theories of Bad Policy." *Policy Reform* 1: 1–44.

Rodrik, D. 1992. "The Rush to Free Trade in the Developing World." NBER Working Paper No. 3947. Cambridge, MA: NBER.

Rodrik, D. 1996. "Understanding Economic Policy Reform." *Journal of Economic Literature* 34 (March): 9–41.

Rose, R. 1991. "What Is Lesson-Drawing?" *Journal of Public Policy* 2 (1): 3–30.

Sabatier, P. A., and H. C. Jenkins-Smith. 1993. *Policy Change and Learning. An Advocacy Coalition Approach*. Boulder: West View Press.

Simmons, B. and Z. Elkins. 2003. "Globalization and Policy Diffusion: Explaining Three Decades of Liberalization." Unpublished manuscript.

Simmons, B. and Z. Elkins. 2004. "The Globalization of Liberalization: Policy Diffusion in the International Political Economy." *American Political Science Review* 98: 171–189.

Wade, R. 1990. *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton, N.J: Princeton University Press.

Way, C. R. Forthcoming 2005. "Fear Factor: How Political Insecurity Shapes the Diffusion of Financial Market Deregulation." *The Annals of the American Academy of Political and Social Science.*

Westphal, L. 1990. "Industrial Policy in an Export-Propelled Economy: Lessons from South Korea's Experience." *Journal of Economic Perspectives* 4 (3): 41–59.

Weyland, K. 2002. "The Diffusion of Innovations: A Theoretical Analysis." Unpublished manuscript.

Weyland, K. 2003. "Theories of Policy Diffusion: An Assessment." Unpublished manuscript.

Weyland, K., ed. 2004. *Learning From Foreign Models in Latin America Policy Reform.* Washington, DC: Woodrow Wilson Center.

Williamson, J. 1994. *The Political Economy of Policy Reform.* Washington, DC: Institute for International Economics.

World Bank. 1987. *World Development Report 1987.* Washington, DC: World Bank.

World Bank. 1994a. *Trade Policy Reform in Developing Countries since 1985. A Review of the Evidence*. Discussion Paper. Washington, DC: World Bank.

World Bank. 1994b. *Adjustment in Africa. Reform, Results and the Road Ahead*. Washington, DC: World Bank.