EX PLURIBUS UNUM: 
Integrating the Different Strands of Policy Diffusion Theory*

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1. Introduction

Policy diffusion can be defined as a process in which policy choices are interdependent, that is, in which a choice made by one decision-maker influences the choices made by other decision-makers, and is in turn influenced by them. So defined, diffusion is both an old and a new phenomenon. It is old because interdependencies have always existed. The famous “Galton’s problem”, which points to the importance of interdependencies and the analytical problems following inaccurate assumptions about the independence of cases, was formulated in 1889 when Sir Francis Galton discussed a paper by Edward Tylor, a fellow anthropologist (Ross/Homer 1976: 1-2). Tylor showed a correlation between marriage laws and descent patterns, but Galton retorted that the analysis neglected the possibility of cultural diffusion among tribes. From then on, “Galton’s problem” has been discussed in all textbooks on the comparative method, though the issue has usually been neglected in empirical work.

However, diffusion is also a new phenomenon, or, more precisely, a phenomenon that has become ever more salient in the age of globalization. One of the central characteristics of globalization has been the intensification of commercial and cultural exchanges. As a result, the world is now more closely connected, and countries are more interdependent than ever. It is not surprising, therefore, that diffusion has recently been at the forefront of political science debates, and that a new literature has developed (e.g. Simmons u.a. 2006; Simmons/Elkins 2004; Elkins u.a. 2006; Elkins/Simmons 2005; Levi-Faur 2005; Jordan/Lefevre 2005; Gilardi 2005; Meseguer 2004, 2005, 2006a; Jahn 2006; Meseguer/Gilardi 2005; Brooks 2005; Weyland 2005). While diffusion has long been an important topic in social science, this literature shares some basic characteristics that justify separate treatment. This means that we deliberately exclude from our discussion the related literatures on policy convergence and policy transfer. While we recognize their importance, we think that they are best addressed separately (see Holzinger/Jörgens/Knill in this volume).

This article adopts the “strict” approach to diffusion (“enger Verständnis von Politikdiffusion”; see Holzinger/Jörgens/Knill in this volume). We discuss the theoretical underpinnings of the recent diffusion literature in political science. We argue that they are currently quite shaky. In effect, most authors rely essentially on a heterogeneous list of diffusion mechanisms that, while certainly important, do not share a common theo-

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tical foundation. Some mechanisms, such as competition and learning, assume rational, utility-maximizing actors, while others mechanisms, such as symbolic imitation, rely on constructivist arguments. Furthermore, most empirical studies take into account several mechanisms, but simply add them up. The problem of the literature is, therefore, that explanations are based on the compilation of diffusion mechanisms that have different theoretical bases. While this approach can be fruitful for exploratory research, further advances require a more coherent and sophisticated theoretical framework. In this article, we attempt to take a first step towards one.

Our discussion is organized in three steps. First, we review the different strands in diffusion research that have developed in sociology and political science during the last fifteen years. While diffusion has been a long-standing concern in sociology, in political science, with the exception of the American literature on diffusion in the States, the resurgence of the topic has been more recent. We then discuss the common ground of the "new" diffusion literature, which can be found in its emphasis on diffusion mechanisms. Overall, the literature paints a rich picture of diffusion processes, but we emphasize its limitations in terms of theoretical coherence and sophistication.

Second, we present an expected-utility model of policy change that, despite its simplicity, is able to supply effectively common ground to all the diffusion mechanisms discussed in the literature. The idea that we develop is that each mechanism has a distinct influence on the various parameters of the model. Moreover, the model highlights the need to think about the conditional effects of diffusion mechanisms. This contrasts with current explanations, which assume that the various mechanisms have an independent influence on policy change. In the conclusion we discuss how the model can be improved, notably by taking into account insights from prospect theory.

Third, we discuss the implications of our model. For empirical research, we only do the model highlight the heterogeneity of diffusion processes, but it also offers guidance for integrating it into empirical studies. For theoretical research, the model can be used to develop simulations that can shed light on the macro outcomes (for example, under what conditions does diffusion lead to convergence) of diffusion processes.

2. Diffusion research in sociology and political science: a short overview

The diffusion of social practices has been studied in a monumental sociological and political science literature. Strang and Soule (1998) summarize the main themes. While "classical" diffusion studies were interested in the adoption by individuals of various sorts of innovations, such as new crops or medicines, "contemporary macro diffusion research" has analyzed how behavioral strategies and structures have spread among collectivities such as social movements and organizations (see e.g. Ransu-Moore u. a. 1991; Baum/Oliver 1992; Tolbert/Zuckert 1983; Hannan/Carroll 1992; Headstrom 1994; Headstrom u. a. 2000; Fligstein 1985). In this literature, diffusion is defined as a process rather than as an outcome. The definition employed in the recent political science literature is essentially the same as the one established in sociology. Second, diffusion constitutes one explanation among several rather than "the" explanation. In other words, sociologists are well aware that interdependencies are not the only factor influencing the adoption of a practice: the (psychological, social) characteristics of the adopter are also very important. At the theoretical level, sociologists have defined several types of linkages that constitute channels of diffusion, including strong and weak ties, competition, prestige, spatial proximity, and cultural reference groups. Learning has also been investigated; for example, waves of strikes and airplane hijackings are influenced by successful examples (Holden 1986; Connel/Connel 1995). Methodologically, the sociological literature overwhelmingly relies on event history analysis, sometimes in combination with spatial analysis. The operationalization of diffusion channels or mechanisms is quite sophisticated because it is often based on network analysis tools, which facilitate the measurement of various forms of indirect interdependence in addition to immediate "proximities". Some studies have also examined how the same practices diffuse in different communities, how different practices diffuse in the same communities, and, finally, how causal processes evolve as diffusion unfolds. Most of the recent political science literature does not take this kind of heterogeneity into account. Finally, we may note that Strang and Soule (1998) call for the examination of practices that fail to diffuse; by focusing on widespread practices, the sociological literature has been characterized by selection bias.

To turn now to political science, a classical early study of cross-national diffusion is Collier and Messick's (1975) examination of the timing of social security adoptions. Most surprisingly, this work has failed to generate a real diffusion literature such as has been the case in sociology. The argument rests on a distinction between "prerequisites" and diffusion explanation, where the idea is simply that social security adoptions are influenced by both country-level factors (specifically, the level of modernization) and interdependencies. At the theoretical level, diffusion processes are not specified in great detail. However, the authors distinguish between "hierarchical diffusion", whereby "countries tend to imitate other countries that are at higher levels of modernization" (Collier/Messick 1975: 1308), and "spatial diffusion", whereby proximity (geographic, but also other kinds) cases communication and thus the spread of policies. The quantitative analysis is rudimentary by the current standards, since it consists essentially of a correlation between the year of first social security adoption and modernization at that time (measured by the percentage of the workforce in agriculture), and of an informal (visual) assessment of spatial clustering. However, the analysis is quite rich in that the authors examine separately diffusion patterns among early adopters, the middle group of adopters, and late adopters. They argue that there is no single diffusion pattern across the whole period under examination, and that each phase witnessed a distinct diffusion process. Thus, for example, in the early stage of the diffusion process it is not the most modernized countries that drive the spread of social security, while latecomers are in effect influenced by the prestige (in terms of modernization) of the countries that have already adopted social security programs. Of course, this analysis can be criticized on many grounds, but we should note that the authors advance a more nuanced view of diffusion processes than most of the recent political science literature.

1 Rogers's much-cited book (Rogers 1995) is in fact a review of this literature (Strang/Soule 1998: 267).
Finally, policy diffusion has been extensively studied in the context of US federalism. A classic study here is Berry and Berry’s (1990) analysis of state lottery adoptions. Again we find a distinction between state-level (“internal determinants” in Berry and Berry’s terminology) and diffusion explanations. The latter are not as well developed theoretically, since the only argument is that “previous adoptions by nearby states can (...) provide an important resource for overcoming obstacles to innovation, as such adoptions yield important information about a policy’s effect” (Berry/Berry 1990: 403). In other words, the authors hint here at some form of learning, but the argument is not developed. Methodologically, the authors employ event history techniques, and diffusion effects are measured simply by counting the number of previous adoptions among immediate neighbors. This approach has been adopted in much of the literature, which has not really tried to develop better measures for diffusion effects or more refined theoretical arguments to explain exactly why the behavior of others matters (e.g. Berry u. a. 2003; Volden 2002). A notable exception is the recent work on learning effects (Volden 2006; Grossback u. a. 2004) as well as on complex patterns of diffusion where policies can move vertically up from cities to states or down from states to cities, and horizontally among cities and states (Shipan/Volden 2004, 2005).

To come back to Berry and Berry (1990), despite their relatively simple view of diffusion, their study integrates a nuanced argument in that the influence of neighbors is not assumed to be unconditional, but rather is shown to vary as a function of state-level characteristics. For example, the influence of neighbors is stronger when the state’s fiscal health is poor (because in this case lotteries are a more attractive means to raise revenue).

Theoretically, the recent political science diffusion literature has concentrated extensively on the mechanisms by which policy choices in one country may influence policy choices in others. Following Hedström and Swedberg (1998: 7), “a mechanism can be seen as a systemic set of statements that provide a plausible account of how [two variables] are linked”. Diffusion mechanisms, therefore, are systemic sets of statements specifying how the policy choices of one country are influenced by the policy choices of other countries. In the recent literature a number of mechanisms have been discussed, including learning, competition, common norms, taken-for-grantedness, and symbolic imitation. We now discuss each in turn.

Learning is defined as the acquisition of new relevant information that permits the updating of beliefs about the effects of a new policy (Meseguer 2004, 2005). Two different versions of learning can be identified, one that follows the statistical (Bayesian) rules of inference (“rational” learning) (Meseguer 2003), and one that is based on the “cognitive shortcuts” found by cognitive psychologists, namely, availability, representativeness, and anchoring (“bounded” learning) (Tversky/Kahneman 1974; McDermott 2001). In the rational perspective, it has been shown that, to a certain extent, the enactment of economic reforms such as privatization and the liberalization of the trade regime have been influenced by their success in other countries (Meseguer 2004, 2006a). By contrast, the spread of bilateral investment treaties (BITs) has not been due to their effect in increasing foreign direct investment in other countries (Elkins u. a. 2006). On the other hand, the diffusion of pension reforms in Latin American countries has followed a learning process based on cognitive shortcuts rather than on rational updating of beliefs (Weyland 2005). For example, Chile’s pension privatization was an unprecedented reform that attracted considerable attention, and as such was an example of pension reform that was widely "available". It was in effect also widely copied, and this despite the dubious success of Chilean reforms. Similarly, a number of studies show that countries are influenced by the choices of their “peers” (defined in terms of language, region or religion, for example) (e.g. Simmons/Elkins 2004; Brooks 2005). "Peer" countries can be “available” examples, and the fact that their policies are influential independently from their effects can be taken as evidence of bounded learning.

Competition is a relevant diffusion mechanism when "governments act strategically in order to attract economic activity" (Simmons/Elkins 2004: 173). This often causes prisoner’s dilemmas: “cooperation may lead to [...] policies that make all better off, but there is a constant temptation to adopt [...] policies that improve one’s standing” (Lazer 2001: 476). A classic example is tax competition: all countries may benefit from higher levels of taxation, but some countries may be tempted to cut their rates in order to attract more economic activity. If they do so, other countries are likely to respond. Evidence of competition as a diffusion mechanism has been found for the spread of BITs: countries are more likely to sign BITs if their potential competitors have already done so (Elkins u. a. 2006). Similarly, the adoption of liberal capital account, exchange rate and current account policies has been influenced by the choices of capital and trade competitors (Simmons and Elkins 2004).

Common norms are developed through shared socialization, and lead to a common understanding of appropriate behavior (Finnemore/Sikkink 1998). Therefore, if a set of actors share the same norms, they are likely to identify the same solutions as appropriate for tackling a given problem. As Finnemore (1993) has shown, the establishment of national science policy organizations was due to an emerging norm at the international level stressing the importance of science for modern states and societies. Similarly, the spread of “gender mainstreaming” bureaucracies reflected the growing importance of norms on gender equality, which were activated in transnational NGO networks (True/Mintrom 2001).

Taken-for-grantedness is a status that policies achieve when there is little question that they are the appropriate ones and, therefore, are taken for granted as such. Political rights for women have spread as a result of their being progressively taken for granted as an essential component of citizenship (Ramírez u. a. 1997). Markets have been increasingly seen as the "most desirable mechanism for regulating both domestic and world economies" (Fourcade-Gourinchas/Babb 2002: 533). And, as Finnemore and Sikkink (1998: 895) point out, “few people today discuss whether [...] slavery is useful”. In the sociological literature (e.g. Hannan/Carroll 1992), it is considered that the share of other actors having adopted a practice is a relatively good indicator of taken-for-grantedness. By this standard, most studies find support for the taken-for-grantedness hypothesis (e.g. Gilardi 2005; Meseguer 2006a; Elkins u. a. 2006), even though interpretations vary.

Our list is longer than that of Holzinger, Jürgens and Knill (in this volume) because we discuss separately some mechanisms that they label “transnational communication”.

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Finally, symbolic imitation means that policies can be adopted as instruments of legitimization rather than to fulfill certain functions or solve given problems. For example, it has been argued that the establishment of independent central banks was less linked to attempts to fight inflation than to the need for governments to show their alignment to socially valued policy-making models (Polillo/Guillén 2005; McNamara 2002).

Most studies avoid mono-causal explanations and take several mechanisms into account. In fact, studies typically conclude that a mix of mechanisms accounts for policy diffusion. For example, Simmons and Elkins (2004) find that both competition and bounded learning matter; Henisz, Zelner and Guillén (2005) state that the diffusion of market-oriented reforms was due to coercion, common norms and competition; Elkins, Guzman and Simmons (2006) maintain that both coercion and competition have played a role in the diffusion of BITs; and so on. A first problem with these explanations is that they lack theoretical coherence: they mix different mechanisms, but the mechanisms do not all share a common theoretical background. There are mechanisms that presuppose fully rational actors engaged in complex learning processes or strategically anticipating and reacting to the actions of competitors. But we also have mechanisms such as symbolic imitation that assume that the importance of any function that policies may perform is dwarfed by their symbolic dimension. At the extreme, rationalist mechanisms neglect social structures, while constructivist mechanisms neglect agency (a classic opposition in social science).

Second, these explanations do not yet amount to a theory of diffusion based on a coherent and interconnected set of propositions. It is implicitly assumed that each mechanism is a sufficient condition for increasing the probability of policy adoption, and that the effect of each mechanism adds to that of the others. The existence of feedbacks among the proposed mechanisms of diffusion is not taken into account, nor are the possible interactions between mechanisms and country-specific factors. This perspective therefore largely corresponds to the "general linear reality" denounced by Abbott (1988), that is, a view of the social world that implicitly embraces the highly simplifying assumptions of linear regression. An immediate consequence of this lack of theoretical coherence is that the specification of empirical models is not driven by theory, but only by the attempt to include as many mechanisms as the data allow in a simple, additive fashion (see e.g. Simmons/Elkins 2004; Elkins u. a. 2006). It should be stressed that these works are among the best, since most studies concentrate on a single mechanism (e.g. Gilardi 2003; Meseguer 2006a; Brooks 2005).

To conclude, the literature currently lists diffusion mechanisms but does not encompass their interrelationships or the explanatory weight of each individual factor. A first negative consequence of this state of affairs is that explanations lack theoretical coherence; a second, probably more important, problem is that theoretical models of diffusion are left implicit and amount to adding-up mechanisms, while diffusion processes, like most social phenomena, are certainly more complex. In other words, "vague theory" (Western 1996) leads to a simplified view of diffusion process that neglects the possibility of "conjunctural" and "multiple" causation (Ragin 1987, 2000), that is, the fact that the effects of learning, for example, may depend on country-specific factors, and that different paths may lead to the same outcome (for example, some countries may learn while others imitate).

In response to this state of affairs, we suggest in the next section how the various diffusion mechanisms can be brought under a common umbrella with a simple model of policy change.

3. A theoretical model of policy change and diffusion

This section presents the theoretical framework for the study of policy diffusion put forward by Braun and Gilardi (2006). The model sets out the conditions for policy change, and shows how these conditions are influenced by diffusion mechanisms. For the purposes of exposition, we use the example of welfare state reforms.

It is important to stress that the model itself is a model not of diffusion but rather of policy change. Diffusion enters the model through the idea that diffusion mechanisms are related to some of the parameters that determine policy change. Therefore, the model supplies a unified framework for all diffusion mechanisms.

The basic idea is that a process of policy change is initiated if the expected utility of change is greater than that of the status quo. Expected utility depends on two factors: payoffs and effectiveness. First, policy changes will be more attractive than others and thus yield greater payoffs, either in terms of policy preferences (policy-makers may prefer pension privatization on ideological grounds, like the Thatcher government in Britain) or in terms of electoral rewards (policy-makers may refrain from privatizing pensions out of fear of electoral sanctions, in which case the defense of the status quo offers bigger electoral rewards). Note that the relative importance of electoral and policy rewards may change across countries and over time.

Second, some policies will be more effective than others in doing what they are supposed to do. Due to broad structural trends such as population ageing, the transformation of household structures and post-industrialization, existing welfare state arrangements are becoming less and less viable (Pierson 2001). The basic idea of the model is that these are two factors – payoffs and effectiveness – interact in determining the expected utility of policy alternatives. Policy-makers may attribute high payoffs to existing welfare state arrangements (either because they are in line with their policy preferences, or because they are electorally rewarding, or both), but nevertheless they may prefer reform because of the low effectiveness of the status quo (for example, an excessive burden on public budgets). The exact outcome of the interplay between payoffs and effectiveness depends on the values of the different parameters and thus cannot be derived analytically; what is important is that high payoffs may be counterbalanced by low effectiveness and vice versa, that is, we can see ineffective policies perpetuated if they are considered to be highly popular or are aligned with the (strong) preferences of politicians; alternatively, we can see highly effective policies that are not adopted if they are alien to the (again strong) preferences of politicians or perceived as highly unpopular.

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3 An exception is Holzinger and Knill (2004).
4 An exception is Swank (2004).
Two additional parameters in the policy change model are the transaction costs (search costs) associated with finding an alternative policy (for example, how to reform pensions) and the uncertainty of the reform process, that is, the question whether the reform will be passed in legislative bodies. This latter fact is likely to be anticipated by policy-makers: a reform that is very unlikely to succeed is not likely to be initiated in the first place. Note that this uncertainty is strongly related to the institutional features of the policy. A political system plagued with veto points is likely to present significant obstacles to the passing of reforms, whereas governments enjoying strong majorities face less uncertainty about reforms being passed.

Formally, this model becomes

\[
U_i = wV_i + (1 - w)P_i; \ 0 \leq w \leq 1
\]  
\[
U_j = wV_j + (1 - w)P_j; \ 0 \leq w \leq 1
\]  
\[
EU(i) = mU_i; \ 0 \leq m \leq 1
\]  
\[
EU(j) = nU_j; \ 0 \leq n \leq 1
\]  
\[
EU(\text{change}) = EU_i > EU_j = pU_j + (1 - p)mU_i - C; \ 0 \leq p \leq 1, \ C > 0
\]  
\[
pU_i + (1 - p)mU_i - C > mU_i
\]  
\[
nU_j - nU_j > C
\]

where \( U \) represents payoffs, \( V \) votes, \( P \) policy, \( w \) is a weight, \( m \) and \( n \) represent effectiveness of policy \( i \) and \( j \) respectively, \( p \) is the uncertainty of the reform process, and \( C \) is transaction costs.

Suppose that \( i \), the status quo, is a health care system where most expenditures are public, whereas \( j \) is the alternative policy for example, increasing co-payments and/or the role of private health insurance. Equation (1) gives the utility of policy \( i \) as a function of both votes and the policy preferences of politicians. If governments are "policy-seeking", i.e. highly ideological, they will give more weight to policy \( P \) than to votes \( V \) \((w < 0.5)\); yet, facing the prospect of an election, they may become more "office-seeking" and give more importance to votes than to their preferred policy in the event of conflict \((w > 0.5)\). Equation (2) gives the utility of alternative policy \( j \). Equation (3) gives the expected utility of policy \( i \) as a function of the effectiveness of policy \( m \) and the utility (payoffs) of policy \( j \). This equation entails that a policy may be very attractive in terms of both votes and policy preferences, which are the components of utility, and yet have a low expected utility because the policy is perceived not to be the best means to achieve a particular goal. For example, a leftist government may have strong preferences for high public expenditures in health care, and this policy may also be electorally rewarding, but it may be highly ineffective because it is not financially sustainable, so that its expected utility is not very high.

Equation 4 reflects the same trade-offs for the alternative policy, \( j \). Equations (5) to (7) give the conditions under which a change to policy \( j \), for example less public spending for health care, is most likely to occur. Not only are the perceived effectiveness and payoffs of alternative policies relevant for policy change but so also are the costs of finding an alternative policy \( C \); the probability that a new policy will be passed \((p)\) also matters. Eventually, the adoption of policy \( j \) and the abandonment of policy \( i \) is more likely the more effective policy \( j \) is perceived to be \((m)\), the closest it is to the ideological preferences of politicians \((P)\) and to the preferences of voters \((V)\), the less costly to find and design that policy alternative is \((C)\), and the more likely that policy alternative is to pass \((p)\).

Yet a model of policy change is not sufficient to explain why policies at times diffuse, that is, why policies change in a good number of countries, in a short span of time, and in the same direction. Diffusion enters the model with the idea that the main parameters of the model of policy choice and change \((V, P, m, n, p \text{ and } C)\) are influenced by the various kinds of interdependencies that exist among countries. How do the different diffusion mechanisms discussed above affect the parameters of the model?

Learning is a process whereby the experience of other countries supplies relevant information about the results of policies. Politicians deciding under uncertainty about the effects of a policy may look around and evaluate how policies have performed elsewhere. Learning therefore influences evaluations of the respective effectiveness of alternative policies \((m \text{ and } n)\). For example, policy-makers may update their beliefs on the effectiveness of increasing co-payments and the role of private insurance after observing that in several countries these policies have made it possible to reduce health care deficits, that is, that the means is in line with the intended goal.

Competitive interdependence is a process whereby the choices of others create policy externalities. This alters the relative effectiveness of policies \((m \text{ and } n)\). For example, if several countries reduce the burden of health care contributions on salaries, this may push policy-makers elsewhere to do the same to preserve the competitiveness of the economy, even though they may dislike this reform either on ideological or electoral grounds (or both). This example illustrates the fact that countries do not all need to be equally sensitive to all mechanisms. Competitive interdependence, which is an aspect of globalization, is likely to matter more in social insurance systems, where health care is financed mainly through social contributions levied on salaries and paid by both employers and employees, than in national health services or liberal systems where health care is funded through, respectively, general taxation and private insurance, which does not influence the cost of labor.

Coercion is a process whereby pressures from powerful actors (international organizations or powerful countries) make heterodox policies costly. Strictly speaking, coercion is not a mechanism of diffusion because it is not a horizontal mechanism but rather a top-down channel of diffusion (Meseguer/Gilardi 2005). However, there is a type of "soft" coercion operating through persuasion rather than through imposition that it is worth exploring. Although several authors have found no evidence of international organizations influencing domestic welfare state reforms (see Weyland 2004 for the World Bank and the Interamerican Bank; Brooks 2005 for the World Bank; Armingeon/Beyeler 2004 for the OECD), it may be argued that, if such organizations strongly advocate privatization, this may raise the policy payoffs by changing the policy
preferences of politicians (P) associated to this reform, thus making policy change and diffusion more likely. Moreover, we argue that these organizations may play a crucial role in lowering the transaction costs (C) of searching for policy alternatives. For example, the OECD routinely issues prescriptions for reform in many welfare state domains, such as labor market policy (OECD 2006) and health care (OECD 2002).

Common norms may emerge when policy-makers interact in professional networks. These networks lead to the development of shared views on appropriate courses of action, which amounts to saying that shared beliefs on effectiveness may create a consensus around the idea that privatization is the "best" thing to do. As a result, the policy preferences of politicians (P) may change in favor of the new policy. It is clear that international organizations are crucial actors in the production of common norms (Finnemore 1993; Finnemore/Sikkink 1998).

Taken-for-grantedness entails that some policies are considered as natural choices (see Hannan/Carroll 1992). This also affects beliefs on effectiveness (α) and alters the policy preferences of politicians (P). Over time, pension privatization may become so widespread that it is no longer questioned and is taken for granted as the appropriate policy. Admittedly, this is less likely to be the case in a highly politicized field like welfare state reform than in other more technical domains, such as macroeconomic policy or regulatory policy. However, some policies may still come close to a taken-for-granted status.

Symbolic imitation is a process whereby conformity to socially valued policies is rewarding, which alters the relative size of the payoffs of policy alternatives. Policy-makers may be uncertain about the effectiveness of certain welfare state reforms, but they may feel inclined to try such reform if this gives them an aura of modernity and constitutes a means to show that they are acting in an appropriate way. In other words, there are policies that may increase status, credibility and prestige even if their effectiveness is controversial. For example, active labor market policies have recently become accepted as an appropriate tool to fight unemployment, and this despite mixed evidence from scholarly research (Rueda 2005).

What kind of hypotheses can be derived from this model? First, it is sensible to hypothesize that the relative importance of some parameters varies between innovators and followers. It is for the latter that the mechanisms of interdependence mentioned above will matter. Innovators, as opposed to followers, should be expected to have very strong policy preferences (P) or very high electoral expectations (V) in relation to welfare state reform since hard data about its effectiveness is lacking (α is unknown, but innovators are likely to have strong beliefs on the effectiveness of the innovation), and the transaction costs that innovators incur are high (C). In other words, for innovators the effectiveness of the innovation is uncertain and transaction costs are high. As shown in equation (7), this is not a favorable context for policy change, which can happen only if the new policy yields very high payoffs in terms of policy preferences or votes (since little is known about effectiveness). Alternatively, policy change can occur if the status quo is ineffective (m is very low) that politicians are willing to run experiments in order to escape a clearly bad situation.

Also, innovators are likely to introduce reforms because they face relatively little uncertainty about whether the policy will be passed, notably because the decision-mak-
4. So what? Heterogeneity, conditional diffusion, and aggregate outcomes

How useful is our model? First, the model is a heuristic framework that can be used to design theoretically driven and coherent empirical analyses. The model emphasizes that diffusion processes, like most social phenomena, are likely to be highly heterogeneous, both across countries and over time; the (relative) importance of diffusion mechanisms may vary both cross-sectionally and longitudinally. Some countries may learn while others may follow a more symbolic logic; the impact of diffusion mechanisms on policy change may be filtered by country-specific factors; and some mechanisms (learning, for instance) may be important at earlier stages of the diffusion process, while at later stages other mechanisms (for example, symbolic imitation) may become more relevant. More generally, this means that diffusion processes are not likely to be unconditional, but should be expected to be sensitive to contextual factors. While this may sound trivial, as a matter of fact most quantitative empirical studies neglect heterogeneity and impose highly restrictive assumptions on the analyses. One reason for this is linked to the limitations of quantitative techniques in accounting for complex causation (Ragin 1987, 2000) as well as data constraints, but a second important factor is certainly "vague theory" (Western 1996). In quantitative analyses complexity must be explicitly modeled, which requires strong theoretical guidance. As we have argued, the current literature lacks theoretical sophistication and, as a result, is not able to move empirical specifications beyond the linear default, which is at odds with a more complex and realistic view of diffusion processes.

Our model constitutes an improvement on this state of affairs because it points to a number of meaningful sources of heterogeneity. Most importantly, it highlights the fact that diffusion mechanisms are likely to have only conditional effects on policy change. For example, most studies hypothesize that learning has a direct (that is, unconditional) impact, but conclude that the empirical evidence is mixed (e.g. Meseguer 2006a, 2006b; Elkins u. a. 2006). Our model suggests that these results may follow at least in part from a wrong specification of the analysis: learning effects are likely to vary across countries, since strong policy preferences and/or electoral constraints (which also vary cross-nationally) can make policy-makers stick with an ineffective policy despite being aware that other countries have found better solutions. Additionally, our model also clarifies that learning, like other mechanisms, need not have constant effects over time. Therefore, existing analyses find moderate learning effects possibly because they implicitly average out strong learning in early stages and weak learning in later stages. To sum up, the model is useful for empirical studies as a heuristic framework offering guidance for introducing theoretically driven complexity into analyses.

The issue of heterogeneity and complexity, which our model highlights, is relevant also to understanding aggregate patterns of diffusion or, in other words, the aggregate outcome of diffusion processes. In diffusion studies the level of analysis is that of individual countries, not the outcome that results from the aggregation of individual policy changes. In our view, the diffusion perspective does not lead to strong conclusions on patterns of policy change at the aggregate level, and our model makes clear that, due to the heterogeneity of diffusion processes, convergence is only one possible outcome among others. Diffusion may even lead to increased divergence, for example if distinct diffusion processes operate in different subgroups of countries. Conversely, convergence can occur without diffusion, for example if countries are exposed to similar domestic or international (top-down) pressures (see e.g. Holzinger/Jörgens/Knill in this volume). In relation to this issue, our model lends itself to a theoretical exploration of the aggregate outcomes of diffusion, notably through agent-based modeling techniques. Agent-based modeling involves the study of the aggregate patterns emerging from the uncoordinated interaction of agents, and has been increasingly used in the social sciences (see e.g. Axelrod 1997; Macy/Willer 2002; Cederman 2001; Lustick u. a. 2004). This technique works by writing a computer program that specifies the rules of interactions for agents and the possible actions they can take, and then lets the agents interact a large number of times. Once a baseline model is developed, single parameters can be modified and their effects on aggregate patterns assessed under conditions that are analogous to laboratory experiments (that is, the ceteris paribus condition holds).

To employ agent-based modeling in the context of diffusion, we need, first, a decision-making rule (when is there policy change?), and, second, rules for the interaction of agents (that is, diffusion mechanisms). Our model supplies both: equation 7 specifies under what conditions policy change occurs, and our discussion of diffusion mechanisms clarifies how they are related to the various parameters of the model. Therefore, the model is not only a heuristic device, but could also become a truly analytical model.

5. Conclusion

In this paper, we have argued that the recent policy diffusion literature is characterized by weak and incoherent theory. Most studies find that several mechanisms are responsible for policy diffusion; for example, a typical account is that policy change is driven by country-specific factors, economic competition, and learning (Simmons/Elkins 2004). However, such explanations tend to be theoretically incoherent, since the various diffusion mechanisms are not based on the same assumptions. As a first step towards overcoming this problem, we have developed an expected-utility model of policy change that makes it possible to bring all diffusion mechanisms into a common theoretical framework. The basic idea is that each mechanism has a distinct impact on the parameters driving policy change, notably the effectiveness of the current policy and that of the prospect alternative, and the payoffs associated with the two options. In addition to increasing the theoretical coherence of diffusion explanations, our model also enhances their sophistication. For example, while most empirical analyses (implicitly) assume that learning has an independent effect on policy change (e.g. Simmons/Elkins 2004; Elkins u. a. 2006; Meseguer 2004, 2006a), our model indicates that, if learning matters, its impact should be expected to be conditional. Learning influences beliefs on the effectiveness of the new policy, but its impact on policy change depends on the payoffs associated with the new policy. For example, effective but unpopular changes are seldom implemented, and ineffective but popular policies are often maintained. If these arguments are correct, it may be conjectured that the weak empirical
support for learning hypotheses found in the literature is due to empirical misspecifications. Similar arguments can be made for the other mechanisms.

On a more critical note, our model currently neglects risk and uncertainty. For example, we have not taken into account the fact that learning makes it possible to update beliefs on the effectiveness of the new policy, but only imperfectly. To use a statistical analogy, the "confidence interval" around the "point estimate" of n can be narrow or wide. If it is narrow, at the end of the learning process decision-makers may be reasonably certain that the new policy is better than the status quo. By contrast, if the estimate is imprecise, there may be much greater uncertainty about the superiority of the new policy. Of course, rational learners will take into account the precision of the estimates in their decision. This is in fact an important component of Bayesian learning (Meseguer 2004, 2006a).

An easy way to integrate these considerations into our model would simply be to add a parameter to capture the uncertainty surrounding n. However, it may be useful to take into account the insights of prospect theory. Prospect theory is a psychological theory of decision-making under risk (Kahneman/Tversky 1979; Quattrone/Tversky 1988; McDermott 2001; Kanner 2005). One of its major conclusions is that decision-makers tend to be risk-seeking for losses, and risk-averse for gains. That is, people tend to accept a greater degree of risk when decision-making is about avoiding losses than when it is about seeking gains. Second, gains and losses are calculated with respect to a given reference point, which in most cases is the status quo, but can also be related to the expectations or aspirations of the decision-maker. Third, losses are accorded more importance than equal gains, a property called "loss aversion".

For our model, these arguments imply that decision-makers will be willing to accept more uncertainty with respect to n when they are in the domain of losses, that is, when m is "low". In this case, the alternative is between a bad policy for sure (if the status quo is maintained) and a better policy with a certain probability, which is linked to the uncertainty surrounding n. Since the decision here is about escaping a bad situation, we are in the domain of losses. A relatively low probability may therefore be enough to trigger policy change. By contrast, when m is "high", the choice is between a good policy for sure and an even better policy with a certain probability. Since we are now in the domain of gains, decision-makers will not accept the new policy unless they are almost certain it is in fact better than the status quo. These arguments are analogous to the observation that in elections "incumbents profit from good times, and challengers from bad times" (Quattrone/Tversky 1988: 725).

These, of course, are just speculations, and should be seen as "indications for future work. For the time being, we feel that, by enhancing the coherence and sophistication of the theoretical arguments, our model constitutes an improvement on the current state of the art.