Taking 'Galton's Problem' Seriously: Towards a Theory of Policy Diffusion

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TAKING 'GALTON'S PROBLEM' SERIOUSLY

TOWARDS A THEORY OF POLICY DIFFUSION

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ABSTRACT

This article builds on the recent policy diffusion literature and attempts to overcome one of its major problems, namely the lack of a coherent theoretical framework. The literature defines policy diffusion as a process where policy choices are interdependent, and identifies several diffusion mechanisms that specify the link between the policy choices of the various actors. As these mechanisms are grounded in different theories, theoretical accounts of diffusion currently have little internal coherence. In this article we put forward an expected-utility model of policy change that is able to subsume all the diffusion mechanisms. We argue that the expected utility of a policy depends on both its effectiveness and the payoffs it yields, and we show that the various diffusion mechanisms operate by altering these two parameters. Each mechanism affects one of the two parameters, and does so in distinct ways. To account for aggregate patterns of diffusion, we embed our model in a simple threshold model of diffusion. Given the high complexity of the process that results, strong analytical conclusions on aggregate patterns cannot be drawn without more extensive analysis which is beyond the scope of this article. However, preliminary considerations indicate that a wide range of diffusion processes may exist and that convergence is only one possible outcome.

KEY WORDS • diffusion mechanisms • learning • policy change • policy diffusion • threshold models

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1. Introduction

Policy diffusion has recently attracted considerable academic interest. Scholars are increasingly recognizing the need to explicitly consider policy choices as interdependent. Of course, the possibility that countries do not constitute independent observations has been known for a long time in comparative politics, notably under the label 'Galton's problem' (see e.g. Przeworski and Teune, 1970: 51–3; Ross and Homer, 1976). Until recently, this was treated simply as a 'problem', an annoyance that complicated empirical analysis. An emerging policy diffusion literature (e.g. Meseguer, 2004, 2005; Simmons and Elkins, 2004; Gilardi, 2005; Jordana and Levi-Faur, 2005; Levi-Faur, 2005; Meseguer and Gilardi, 2005; Way, 2005; Jahn, 2006; Simmons et al., forthcoming), however, is focusing more precisely on the characteristics and consequences of countries' interdependencies. In this literature, diffusion is defined as a process where choices are interdependent, that is, where the choice of a government influences the choices made by others and, conversely, the choice of a government is influenced by the choices made by others.

The diffusion literature acknowledges that diffusion-like patterns, namely patterns of 'successive adoptions of a policy innovation' (Eyestone, 1977: 441), can emerge from fully independent decisions. The spread of policies can be driven not only by the interdependencies among actors, but also by 'internal determinants' (Berry and Berry, 1990), 'prerequisites' (Collier and Messick, 1975), or 'common contextual effects' (Van den Bulte and Lilien, 2001). This is sometimes considered as the 'null hypothesis' against which diffusion hypotheses are tested. However, since non-diffusion factors are commonly found to matter along with diffusion mechanisms (see e.g. Simmons and Elkins, 2004), which contradicts the idea of a null hypothesis, we suggest that the term 'spurious diffusion' more accurately captures the fact that a pattern may look like diffusion even though it is not driven by diffusion.

One of the cornerstones of the policy diffusion literature is the interest in the mechanisms that drive diffusion processes. As Hedström and Swedberg (1998: 7) explain, 'a mechanism can be seen as a systematic set of statements that provide a plausible account of how [two variables] are linked'. In policy diffusion processes, the behaviour of government A influences that of government B. A diffusion mechanism is thus a systematic set of statements that provide a plausible account of why the behaviour of A influences that of B. Since there is not only one plausible account of why choices are interdependent, several diffusion mechanisms can be identified (see e.g. Simmons and Elkins, 2004). In this article we focus on learning, competitive and cooperative interdependence, coercion, common norms, taken-for-grantedness, and symbolic imitation. Learning means that the behaviour of A has an impact on that of B because it conveys relevant information about policy choices;

competitive and cooperative interdependence means that the choice of A creates policy externalities that B must take into account; coercion means that powerful actors can impose costs and rewards on policy alternatives; common norms of action are created by the interaction of actors; taken-for-grantedness means that widespread policies can be almost automatically considered as the appropriate choice; and finally, symbolic imitation means that orthodox policies are rewarding. All these mechanisms will be discussed in detail in Section 3.

The main problem with diffusion mechanisms is that they are grounded in very different literatures and, therefore, not only does no theory of diffusion exist, but explanations also tend to be internally incoherent. A typical account of diffusion processes suggests that policy change is driven not only by country-specific factors, but also by international economic competition as well as learning (Simmons and Elkins, 2004). These two diffusion mechanisms, however, have no common theoretical basis. Thus, the current state of the field is characterized by weak and incoherent theory.

Our goal in this article is to overcome this problem and make a first step towards a theory of diffusion that (1) has strong micro-foundations and (2) can bring the various diffusion mechanisms discussed in the literature under a common framework. We base our arguments on expected utility theory (Becker, 1976; Lindenberg, 1989, 2000; Esser, 1993a, 1993b, 1995, 1999, 2001). We understand policy diffusion processes as phenomena that require explanation on three levels. In the first step we develop a general model of policy change. In the second step we examine how policy change decisions may be interdependent, that is, how the choices of an actor are influenced by the policy choices of other actors. In this step we focus on diffusion mechanisms and show how they can be linked to our model of policy change. Finally, in the third step we address the micro–macro link, that is, what kind of pattern will emerge from the aggregation of individual choices. In other words, we deal here with 'transformational mechanisms', namely mechanisms that show 'how individual actions are transformed into some kind of collective outcome' (Hedström and Swedberg, 1998: 23).

The rest of the article is structured following these three steps. Section 2 develops a general expected-utility model of policy change; Section 3 shows how this model brings together the various diffusion mechanisms; Section 4 discusses aggregate patterns of diffusion and the final section will draw some conclusions.

2. Step 1: Policy Change

Partially following Strøm (1990), we assume that decision makers are both vote and policy seekers. Thus, the utility that decision makers attribute to

a policy option i is a function of both its electoral rewards and its closeness to their ideal point:

$$U_i = wV_i + (1 - w)P_i; \quad 0 \leq w \leq 1, \tag{1}$$

where V represents the payoffs associated with votes, P represents the payoffs associated with policy, and w is a coefficient representing the weight of each factor. The introduction of weighting allows for variation in the relative importance of votes and policy in the utility of decision-makers. As Strøm (1990) shows, the relative importance of goals depends on a number of factors that are likely to vary both between countries and over time. For example, to the extent that policy-seeking and vote-seeking behaviour may conflict, decision makers may give more importance to votes ($w > 0.5$) when elections approach, but prefer policy to votes ($w < 0.5$) when elections are further away.

U_i reflects the *payoffs* associated with a policy. Payoffs, however, are not the only parameter determining the expected utility of a policy. Decision makers are also influenced by the extent to which a policy is effective. We define the quality of the link between means (policies) and ends as *effectiveness*.[1] A policy is effective if it achieves what it is designed to do; in other words, effectiveness reflects the degree to which policies deliver intended outcomes.

The expected utility of a policy is thus a function of both payoffs and effectiveness. Note that the two factors do not have an independent influence on expected utility. Rather, the impact of payoffs on the expected utility of a policy depends on effectiveness, and conversely that of effectiveness depends on payoffs. If U_i represents the payoffs of policy i and m is its effectiveness, then its expected utility is

$$EU(i) = mU_i; \quad 0 \leq m \leq 1. \tag{2}$$

The idea is that a policy that yields high electoral and/or policy payoffs but is not very effective will have a lower expected utility. A leftist government may prefer strong public control of utilities on ideological grounds, but the expected utility of renationalizing privatized telecommunication companies is likely to be low as pro-market reforms have proved very effective in this field. Conversely, a government may think that pension privatization is a good way to deal with the challenges posed by an ageing society (pension privatization is thought to be effective), but the expected utility of this reform may nevertheless be quite low if pension privatization is highly unpopular

1. Our distinction between payoffs and effectiveness is strongly influenced by Esser (1999, 2001: 259–334).

and the government thus fears an electoral backlash and/or if the government dislikes the inequality associated with privatizing social security (pension privatization yields small payoffs).

Expected utility theory is, of course, based on comparing the expected utilities of several possible alternative outcomes. The alternative with the highest expected value will then be chosen. This assumption is suitable for our purpose as policy diffusion assumes that there is at least one policy that can be an alternative to the existing policy. So, when will decision makers switch from an old policy to a new one?

Let U_j represent the payoffs associated with the alternative policy j and n its effectiveness. The expected utility of policy j is then

$$EU(j) = nU_j; \quad 0 \leq n \leq 1. \tag{3}$$

Policy change occurs if the expected utility of change is greater than that of the status quo. The latter is simply the expected utility of the existing policy i:

$$EU(\text{status quo}) = mU_i. \tag{4}$$

However, the expected utility of change must also take into account transaction costs C, which notably include the search costs associated with finding an alternative policy as well as the administrative costs of implementing it. In addition, the expected utility of change also depends on the uncertainty surrounding the reform process. Obviously, not all reform attempts are successful. For example, Clinton launched a major reform of health care in 1993 but was never able to secure passage for the legislation (Giaimo and Manow, 1999). The idea here is that policy makers take into account the chances of success of a given reform when evaluating the expected utility of policy change. This uncertainty can be expressed in terms of probabilities: the new model j can be adopted with probability p and, conversely, the status quo may prevail with probability $1 - p$. The chances of success of a given reform process are influenced by many factors, one of which is veto players. As is well known, policy stability (and therefore the probability that the status quo prevails) increases with the number of veto players[2] (Tsebelis, 2002). Continuing with the health care reform example, the nationalization of health care insurance has been more difficult in countries characterized by many veto points (Immergut, 1992). Our argument here is that, *ceteris paribus*, the more the reform process is likely to fail (that is, the higher the uncertainty), the lower the expected utility of change.

2. It is interesting to note that the veto players measure developed by Henisz (2000, 2002) ranges between 0 and 1, thus strengthening the link between veto players and uncertainty in our model.

The expected utility of change is thus given by:

$$EU(\text{change}) = pnU_j + (1-p)mU_i - C; \quad 0 \leq p \leq 1, c > 0. \tag{5}$$

Policy makers engage in policy change if its expected utility is greater than that of the status quo.[3] Formally,

$$pnU_j + (1-p)mU_i - C > mU_i \tag{6}$$

$$nU_j - mU_i > C/p \tag{7}$$

$$U_i(nU_j/U_i - m) > C/p \tag{8}$$

Figure 1 shows graphically how the different parameters affect policy change. Change occurs if C/p is smaller than the threshold given by the surface. It appears that the likelihood of change, which is related to the size of the volume under the surface, increases as m becomes smaller, n becomes bigger, and U_j becomes bigger relatively to U_i. In other words, as m decreases, n increases and U_j/U_i increases, change is possible for increasingly high values of C and low values of p. Note that change is possible even if m (the effectiveness of the existing policy) is high, but only insofar as n (the effectiveness of the alternative policy) is also high and U_j is somewhat bigger than U_i. Note also that if n is small, change is possible but unlikely, given that either U_j must be much bigger than U_i or m must be very low (or both). This means that the new policy must seem at least moderately effective in order to be chosen. A poor m or a big U_j/U_i can compensate a weak n, but only to some extent. Intuitively, this makes sense: ineffective policies (for example, policies that have performed poorly elsewhere) are unlikely to be adopted.

Applying Figure 1 to the example of the liberalization of the telecommunications industry, it can be seen that public monopolies (policy i) are more likely to be abandoned in favour of competitive markets (policy j) if the effectiveness of the former (m) declines, if the effectiveness of the latter (n) is quite high, and if the latter becomes more attractive in relation to the former ($U_j > U_i$). The interplay between effectiveness and payoffs must be stressed. First, a change in relative utilities in favour of the liberalization of the telecommunications industry does not automatically lead to policy change. The new policy must also have some effectiveness. A very weak effectiveness can to some extent be compensated by very big payoffs, but our model shows that a policy maker will not adopt a new policy only on account

3. Note that (7) implies that $nU_j > mU_i$. This follows from the fact that $C/p > 0$. Then, the necessary (but not sufficient) condition for change is $nU_j - mU_i > 0$; that is, $nU_j > mU_i$.

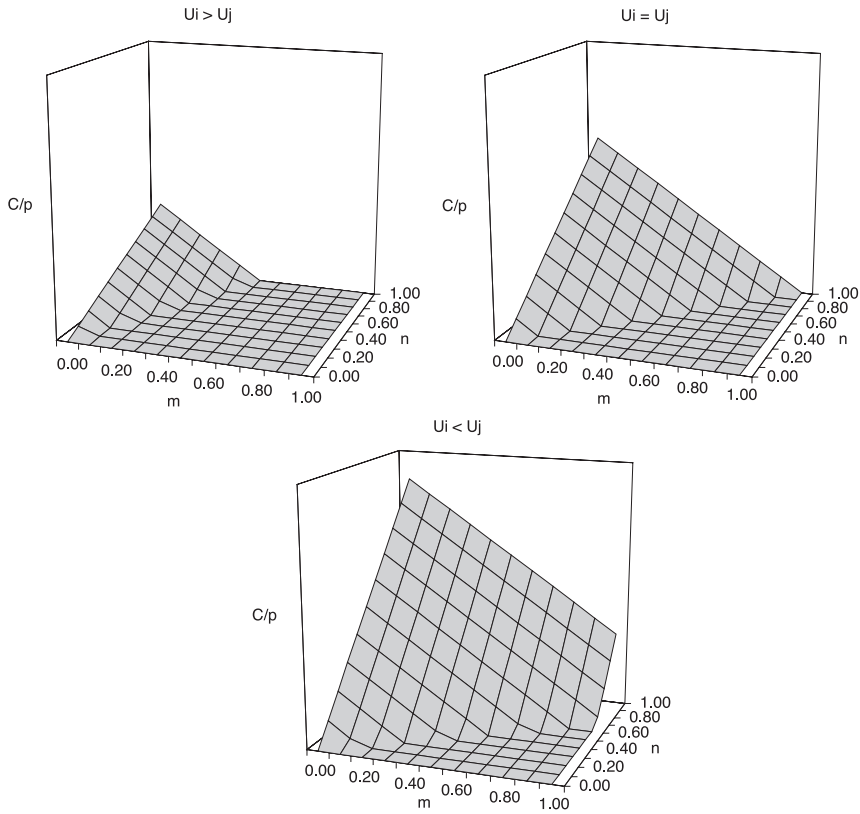


Figure 1. Choosing Policy Change

of the payoffs that are associated with it. The reverse is also true, and is also more consistent with conventional wisdom: a policy maker is unlikely to adopt a new policy that is perceived as highly effective but is also very unpopular, that is, yielding very small payoffs. Thus, a policy maker may believe that competitive markets are much more effective than public monopolies, but will be unlikely to adopt this reform if it faces very strong opposition from, for example, trade unions.

3. Step 2: Diffusion

How is the model presented in Section 2 related to policy diffusion? Diffusion is defined as a process where policy choices are interdependent. The decision to change policy itself is based on the same criteria in both independent and

interdependent circumstances. As shown in (7), actors decide whether to change policy on the basis of the payoffs (U_i, U_j) and effectiveness (m, n) of the alternative options, as well as transaction costs (C) and the uncertainty of the process (p). These parameters are relevant both when choices are independent and when they are interdependent. The defining feature of diffusion processes is that, in contrast to independent decisions, the values of the parameters depend on the behaviour of others. How exactly the choices of others influence the choice of a decision maker depends on which diffusion mechanism is at work. The following sections discuss how each mechanism has a distinct impact on the parameters of the policy change decision.

Before turning to the mechanisms, however, it is necessary to consider briefly how our model deals with spurious diffusion. The spurious diffusion argument has two components. First, a large number of actors choose similar policies, and second, individual choices are independent. Kelemen and Sibbitt (2004), for example, observe that American legal style has spread across the world, and argue that this is not due to diffusion but, rather, to 'the confluence of two largely domestic factors: economic liberalization and political fragmentation' (p. 104). The argument is therefore that the spread of American law has been the result not of interdependencies among actors, but of their independent reaction to similar functional pressures. The aggregate result is thus similar to that of a diffusion process (American legal style has spread), but the cause is not diffusion but rather domestic pressures.

Spurious diffusion makes the implicit assumption that some problems have an inherent 'rational' solution. If such a solution does not exist, in effect, it is highly unlikely that many actors would come up with similar solutions independently. This assumption is questionable but defensible. The whole rational choice literature on institutions, for example, argues that specific institutional arrangements are the result of reactions to specific problems. Thus, legislative committees are seen as a response to the transaction costs that plague legislative activity, and notably the exchange of votes (Weingast and Marshall, 1988). More generally, legislative institutions are understood as a response to the instability associated with pure majority rule (Shepsle and Weingast, 1981).

The driving forces behind spurious diffusion are functional pressures. These can particularly affect policy effectiveness (m and n). Due to changed conditions, a well-established policy may no longer be effective. For example, a decline in economic growth, combined with socio-economic developments such as population ageing, has put pension reform (and welfare state reform in general) high on the agenda of most governments (Myles and Pierson, 2001; Pierson, 2001b). This decline in effectiveness has forced even left-wing parties (for whom the payoffs associated with the existing model can be considered to be greater than those associated with the new one, i.e.

$U_i > U_j$) to enact welfare-state reforms (Kittel and Obinger, 2003), precisely because of a decline in effectiveness. As more governments face similar declines in the effectiveness of their models, then similar changes can be expected.

3.1 Learning

As a mechanism of diffusion, 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). Learning can be fully rational or bounded. Rational learning is best conceptualized in Bayesian terms (Meseguer, 2003). Here, actors are assumed to choose policies after updating their beliefs about the policy effects by looking at the experience of others, which is then used to update prior beliefs and eventually orient action. Bounded learning, on the other hand, is a bounded rationality version of Bayesian learning. In this case, actors try to gather relevant information from the observation of the behaviour of others, but, rather than using Bayesian updating, they rely on 'cognitive shortcuts' such as representativeness, availability and anchoring (Tversky and Kahneman, 1974; McDermott, 2001). Learning here is much less effective than in the Bayesian view. As Kahneman and Tversky (1982: 32) put it, 'apparently, people replace the laws of chance by heuristics, which sometimes yield reasonable estimates and quite often do not'.

While the updating process varies greatly between Bayesian and bounded learning, the basic characteristics are the same: actors want to know whether the new policy is useful for them, and the experience of others supplies the relevant information. In our model, this amounts to saying that the experience of others enables actors to update their beliefs about the effectiveness of policies, that is, the experience of others affects m and n. On the other hand, learning does not affect the relative size of payoffs (U_j/U_i). In the telecommunication liberalization example, learning enables decision makers to update their beliefs about the value of m (the effectiveness of public monopolies) and n (the effectiveness of competitive markets). In other words, learning enables decision makers to assess the extent to which the two alternatives are effective at, for example, delivering good quality services to consumers at a reasonable price. Of course, this assessment is more accurate if the actors are Bayesian learners rather than if they are bounded learners.

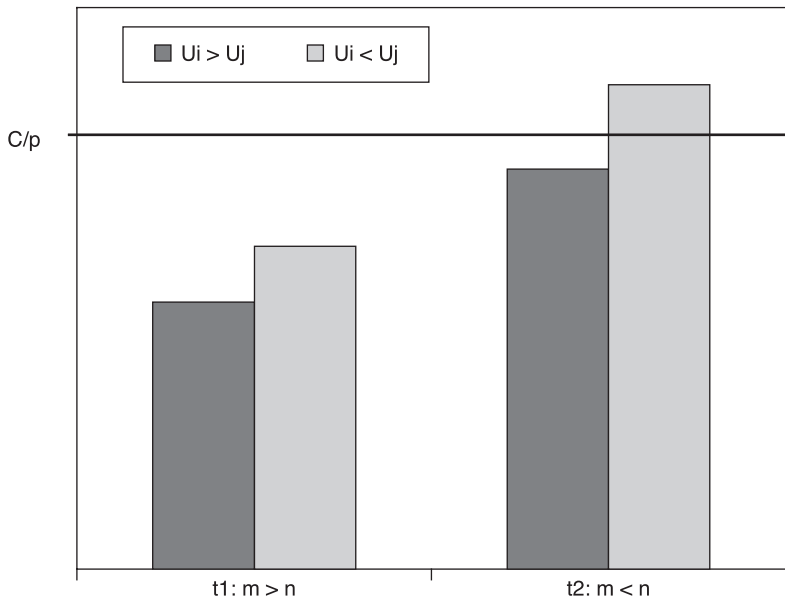
Decision makers will be more likely to liberalize the telecommunications industry if the experience of others points to the fact that this policy leads to better results. However, note that policy change also depends on the relative size of the payoffs associated with the each policy: a more effective policy can be discarded if powerful trade unions, for example, make decision makers value public monopolies more than free markets. Another example

is welfare state reforms. Although the 'context of permanent austerity' (Pierson, 2001a) decreases the effectiveness of existing welfare state arrangements, welfare state reform is hindered by its fundamental unpopularity (Pierson, 1994), which, in our model, means that the status quo yields greater payoffs (though possibly lower effectiveness) than reform. The relative size of the payoffs associated with each policy is not related to learning, but must be taken into account to explain policy change.

This account of learning contrasts with that of Meseguer (2003: 14), who basically argues that only effectiveness matters. The utility function of Meseguer's Bayesian learners is essentially composed of posterior beliefs about average results and the variability of results (which together indicate, in our terminology, the effectiveness of policies). Other factors (such as, again in our terminology, the payoffs associated with policies) are relegated to the error term. Since the function is additive, the effect of payoffs (as expressed in the error term) adds to that of effectiveness. By contrast, our model argues that effectiveness and payoffs interact and, therefore, the contribution of each to the expected utility of policy change depends on the value of the other. Thus, while Meseguer would expect policy change almost as soon as $n > m$, we show that other considerations may lead decision makers to choose (or keep) a less effective model, not because they are unaware of the evidence pointing against it, but because the evidence is weighted by other factors, namely the payoffs associated with the policy.

The fact that the impact of learning on policy change depends on the relative size of the payoffs associated with policies is illustrated in Figure 2, where bars indicate values of $nU_j - mU_i$, and the horizontal line is the value of C/p. At time t_1, decision makers have certain beliefs on the effectiveness of i and j. In particular, they believe that i is more effective than j ($m > n$). It can be seen that change is impossible, as $nU_j - mU_i < C/p$ independent of the relative size of payoffs (U_j and U_i). At time t_2, policy makers have engaged in a learning process, and have consequently updated their beliefs on the effectiveness of i and j. The experience of other countries has led them to consider that j is more effective than i, that is, that $m < n$. The new policy, however, is not automatically adopted as a consequence of this new information on effectiveness. If the payoffs associated with i remain sufficiently larger than those associated with j, then i will be retained despite its lesser effectiveness. On the other hand, if j yields greater payoffs than i, then the new information about its effectiveness leads to policy change.

To sum up, then, our model shows that learning enables decision makers to update their beliefs about the effectiveness of policies, and that a variation in these beliefs in favour of the alternative policy can, but does not necessarily lead to change. This qualifies the argument that, in learning processes, new information about the effectiveness of policies leads to change as soon as the evidence points to a greater effectiveness for the alternative policy.



Note: Bars indicate values of $nU_j - mU_i$ (see text for details).

Figure 2. Learning: The Impact of Changes in Perceived Effectiveness (m, n) on Policy Change Depends on the Relative Size of Payoffs (U_i, U_j).

3.2 Competitive and Cooperative Interdependence

In competitive interdependence, 'governments act strategically in order to attract economic activity' (Simmons and Elkins, 2004: 173). The structure of this type of interdependence is that of a prisoner's dilemma: 'cooperation might lead to regulatory policies that make all better off, but there is a constant temptation to adopt regulatory policies that improve one's own standing' (Lazer, 2001: 476). Policy choices thus create externalities for those in the same competition space. For example, if a government decides to lower corporate taxes to attract investment, this creates incentives for other governments to do the same.

In cooperative interdependence, on the other hand, benefits derive from having compatible policies (Lazer, 2001: 476), which give decision makers incentives to adapt to the policies chosen by others. In some cases, such as for technology interfaces, benefits derive from having a common standard (Lazer and Mayer-Schönberg, 2002: 829–30). Commercial law and accounting rules are other cases in point, since their international standardization improves the efficiency of transnational operations (Abbott and Snidal, 2001: 351). Similarly, regulatory harmonization in international finance

enhances the capacity of national decision makers to achieve their purposes (Simmons, 2001: 590).

In both competitive and cooperative interdependence, incentives to adopt the same policies as others do not derive from a change in the payoffs associated with policies, but in their effectiveness. In fact, there may even be tradeoffs between effectiveness and payoffs. A government may prefer higher corporate taxes, however if companies move to other countries with lower taxes, this could not only have adverse consequences on the economy, but it could also lead to an overall lower amount of revenue from corporate taxes. In other words, the corporate tax policies of other countries have altered the effectiveness of the domestic policy. Another example is the so called 'Bologna process' in higher education policy, which leads to the harmonization of the organization of academic curricula in European countries on the basis of the Anglo-Saxon model (BA, MA and PhD). This favours the international mobility of students and increases the comparability of qualifications, which to some extent is more line with new demands from both business and students, but faces some opposition because it runs counter to well-established national traditions and is more compatible with some academic disciplines than with others. Again, the incentives to adopt the model depend essentially on the effectiveness and not on payoffs.

3.3 Coercion

Coercion is the imposition of policies on national governments by powerful international organizations or powerful countries.[4] The European Union (EU), for example, influences the domestic policies of Central and Eastern European (CEE) countries through conditionality, namely 'a bargaining strategy of reinforcement by reward, under which the EU provides external incentives for a target government to comply with its conditions' (Schimmelfennig and Sedelmeier, 2004: 662). In particular, the EU links the opening of accession negotiations to reforms to strengthen the respect for human rights and more generally the principles of liberal democracy (p. 669). Through this instrument, the EU is thus able to change the relative size of the payoffs that alternative policies yield for policy makers in CEE countries and, as a result, impose changes that would otherwise not have been implemented. Turkey, for example, abolished the death penalty and granted cultural rights to the

4. Strictly speaking coercion is not a diffusion mechanism, since it emphasizes top-down pressures rather than the horizontal interdependencies that are at the core of our definition of diffusion. We choose to discuss coercion as a diffusion mechanism for two main reasons: first, coercion is routinely included in diffusion studies, and second, it contributes to the non-independence of cases that characterize Galton's problem (see e.g. Gerring, 2001: 179).

Kurdish minority soon after receiving candidate status (Schimmelfennig et al., 2003: 508). International organizations such as the International Monetary Fund (IMF) and the World Bank also have the power to promote policy change, notably by making reform a condition for loans. Pension privatization, for example, has been more likely to occur in countries benefiting from World Bank loans and credits (Brooks, 2002). Privatization in general has been influenced by international financial institutions, in particular the IMF (Brune et al., 2004), which is hardly surprising given that 'for more than a decade, the IMF has included privatization as a standard condition of its structural adjustment lending' (p. 199).

Coercion is therefore a process where powerful actors use carrots and sticks to impose policy change on certain countries. This alters the relative size of payoffs associated with policy alternatives, while the policy makers' perception of their effectiveness may remain the same. The fact that a privatization reform, for example, is a condition for accessing credits from international financial institutions clearly makes this policy more attractive. At the same time, however, privatization need not be perceived as a more effective means to achieve goals such as better economic performance.

3.4 Common Norms

Shared socialization and repeated interactions within networks can lead to the emergence of common norms, which define appropriate behaviour in given contexts and for actors with a given identity (Finnemore and Sikkink, 1998: 891). Common norms provide actors with similar views on which courses of action are appropriate and which are not, and therefore lead them to basically think in the same way. In our terminology, this amounts to saying that common norms give actors the same views on the effectiveness of policy alternatives.

Common norms can be developed in several contexts. Networks of professionals have been argued to be a powerful channel for the development of a common definition of appropriate practices (DiMaggio and Powell, 1991b: 70–4; Haas, 1992). Networks of regulators such as those established in the EU are a case in point. In some policy areas, such as pharmaceuticals regulation, EU-level regulators have been set up (for example the European Medicines Agency, EMEA) that work by coordinating a network of regulators at the member-state level. One of the effects of these networks is that they help build common norms, such as professionalism and a common regulatory philosophy (Majone, 1997: 271–4; 2002: 387). As a result, regulators within the network will tend to share the same views about the effectiveness of policies.

Moreover, international organizations may act as 'agents of socialization' (Finnemore and Sikkink, 1998: 902) and thus promote the consolidation of

common norms. The OECD, for example brings together national civil servants and academics on a regular basis and thus creates a favourable environment for the development of shared understanding of problems and a common definition of solutions (Armingeon, 2004).

3.5 Taken-for-grantedness

The taken-for-grantedness argument posits that over time, some practices may become accepted as the normal or even the obvious thing to do in given contexts. As Hannan and Carroll (1992: 34) explain, an organization (but also a policy) is taken-for-granted 'when there is little question in the minds of actors that it serves as the natural way to effect some kind of collective action'. This means that some policies are automatically assigned a very high effectiveness, while other policies are barely considered, that is, they are automatically given a very low effectiveness. The fact that finding examples of taken-for-granted practices may be difficult demonstrates how many practices we actually do take for granted. There are almost always alternatives; however, we typically see only a small subset of them, if we see alternatives at all.[5] As politics is by definition characterized by the coexistence of actors with different preferences, the elevation of a policy to taken-for-granted status may be more difficult, but some policies can approach the ideal type, for example, women's suffrage rights. The fact that women should have the same political rights as men has progressively become taken-for-granted as a central feature of citizenship and an important component of nation-state identity (Ramirez et al., 1997). Similarly, as Finnemore and Sikkink (1998: 895) put it, 'few people today discuss whether . . . slavery is useful'.

Most policies will not become taken for granted, but if they do, the process will be characterized by a change in beliefs about their effectiveness as well as that of their alternatives. By sharply increasing the value of n and decreasing that of m, thus, taken-for-grantedness may cause some policies to spread.

3.6 Symbolic Imitation

Symbolic imitation is grounded in the idea that decision makers may choose policies in order to show that they are acting in a proper and adequate manner (Meyer and Rowan, 1977: 349). In symbolic imitation normative structures do not operate by removing alternatives, but by valuing some options more than others. In contemporary societies, practices become legitimate in the context of a 'rationalized environment' (Meyer, 1994). This

5. Esser (2001: 259–334) calls this the 'automatic mode' of decision making, as opposed to a 'reflexive mode' where alternatives are carefully considered.

environment creates organizational and policy models through the institutionalization of rules that 'define the meaning and identity of the individual and the pattern of appropriate economic, political and cultural activity engaged in by those individuals' (Meyer et al., 1994). In this context, heterodox policy choices are not ruled out, as in the case of taken-for-grantedness, but are costly because they will tend to be seen as illegitimate. Symbolic imitation, thus, has an impact on payoffs rather than effectiveness. Policies that are consistent with the normative environment reward those who adopt them and, therefore, alter the relative size of the payoffs associated with policy alternatives. Symbolic imitation thus alters the 'policy' component of the decision makers' utility function (P, see Equation 1). In addition, it may also alter the 'votes' component (V), as it may help gain legitimacy for unpopular choices. As Meyer and Rowan (1977) explain, the adoption of policies that conform to prevailing normative structures can function as a 'ceremony' whose aim is to protect decision makers from criticism. The adoption of socially valued practices 'legitimate[s] organizations with internal participants, stockholders, the public, and the state' (p. 351). Practices with 'high ceremonial value' are notably 'those reflecting the latest expert thinking or those with the most prestige' (p. 351). Thus, decision makers may be able to limit the electoral costs of an unpopular policy if they can show that it conforms to 'best practice' or to expert recommendations.

In line with these views, Wilks and Bartle (2002) argue that the creation of independent competition authorities in Europe was a means for governments to show that they were acting in an appropriate way: competition agencies 'had a strong symbolic element' and their establishment was 'motivated by a need to reassure and to appear to act' (p. 148). McNamara (2002) comes to a similar conclusion for delegation to independent central banks, which is seen has having 'important legitimizing and symbolic properties which render it attractive in times of uncertainty or economic distress' (p. 48). These examples clearly show that symbolic imitation as a diffusion mechanism does not alter beliefs on the effectiveness of policies; rather, it rewards behaviour that conforms to socially valued models, thus altering the relative size of the payoffs associated with policy alternatives.

3.7 Summary

Table 1 summarizes the discussion so far. Each diffusion mechanism has a distinct impact on the decision-making parameters for changing policy. Not only do some mechanisms affect effectiveness while others affect payoffs but, more importantly, each mechanism affects the parameters in unique ways. Thus, the impact of learning on m and n will *not* be the same as, for example, that of taken-for-grantedness. It is entirely possible that learning leads actors to the conclusion that $m < n$, while taken-for-grantedness

Table 1. Impact of Diffusion Mechanisms on Effectiveness and Payoffs

Mechanism *Definition*	Impact on Effectiveness (m, n)	Impact on Payoffs (U_i, U_j)
Learning *The experience of others supplies relevant information on the effects of policies*	Updating (fully rational or bounded) of beliefs on m and n	
Competitive and cooperative interdep. *The choices of others create policy externalities*	Alter m and n through policy externalities	
Coercion *Pressures from powerful actors make heterodox policies costly*		Imposes costs on non-compliance: alters U_j/U_i
Common norms *Interaction in networks leads to the development of common norms of action*	Create shared beliefs on m and n	
Taken-for-grantedness *Some policies are considered as natural choices*	Attributes extreme values to m and n	
Symbolic imitation *Conformity to socially valued policies is rewarding*		Rewards compliance: alters U_j/U_i

makes them think that $m > n$. Such contradictions might even be likely. In effect, if all actors are Bayesian learners, their long-term beliefs about effectiveness will converge towards a value that is close to the 'true' effectiveness of policies[6] (Breen, 1999: 465). By contrast, taken-for-granted practices are typically *not* the best ones (Meyer and Rowan, 1977; DiMaggio and Powell, 1991a). A case in point is ISO 9000 quality certificates, which have spread considerably despite their dubious impact on efficiency (Guler et al., 2002: 210). This can be explained if firms update their beliefs about the effectiveness of ISO 9000 certificates not on the basis of learning, but instead by taking them for granted as an appropriate instrument.

Diffusion processes will therefore be very different depending on which diffusion mechanism is at work. Different policies will spread when decision makers are (Bayesian) learners or influenced by taken-for-grantedness. The

6. As noted earlier, this will not necessarily lead to convergence on the best policy, since the impact of beliefs about effectiveness on policy choice depends on the utility of policies for the various actors.

same holds for other diffusion mechanisms. For example, coercion and symbolic imitation both impose costs on heterodox behaviour, but they need not target the same policies. These considerations have important consequences for the third step of our analysis, namely the pattern of policy diffusion at the aggregate level and the possibilities for convergence.

Note also that the two mechanisms that have an impact on payoffs (coercion and symbolic imitation) operate mainly on the 'policy' component of the decision makers' utility function (P in equation 1), while their impact on the 'votes' component (V in Equation 1) is much more limited and/or ambiguous. Symbolic imitation may affect V, perhaps more by limiting electoral losses in case of unpopular choices rather than by gaining more votes. This means that the electoral payoffs associated with policies are largely independent from international experiences, and depend principally on domestic determinants. Since our model does not attribute values to the relative importance of V and P (w in equation 1), this also means that changes in P, even if they are strong, will not produce a significant change in utilities if decision makers value V much more than P (that is, if w is sizeably bigger than 0.5), which can be the case, for example, when elections are close.

4. Step 3: Aggregate Pattern of Diffusion and Convergence

Sections 2 and 3 have dealt with, respectively, the theoretical determinants of policy change and how these are affected by diffusion mechanisms. We have discussed how the various mechanisms influence the decision to change policy, and how the interdependence of actors shapes their policy choices. However, the kind of pattern which will emerge from the aggregation of individual policy choices remains unclear.

A useful starting point for examining aggregate patterns of diffusion are threshold models of collective behaviour (e.g. Granovetter, 1978; Schelling, 1978: 91–110; Levi-Faur, 2002). As Rosenkopf and Abrahamson (1999: 362) argue, the advantage of these models is that they 'can easily describe complex processes that cause bandwagons to start and various proportions of a collectivity's members to adopt'. In this class of models, actors have heterogeneous preferences and their inclination to adopt a new policy (or to make any other binary choice) thus varies. This inclination determines the threshold. In the basic model, the threshold refers to the number of other actors that have already adopted the policy.[7] Thus, if an actor has a threshold of 1, it will not adopt the policy if no one else has already adopted

7. Thresholds can, of course, also be expressed as the proportion of adopters.

it, and will adopt it as soon as another actor does it. This approach explicitly models individual decisions as being interdependent. The decision of each actor to adopt the policy depends on both its own characteristics (its threshold) and on the behaviour of others (the proportion of adopters).[8]

Embedding our model of policy change in a threshold model has several advantages. The first is that the threshold model specifies a clear dynamic linking individual choice to aggregate behaviour, which is lacking in our model of policy change. Second, our model substitutes a more sophisticated view of actors' decision rules for the simple threshold concept; rather than varying simply on thresholds, our actors have different values of m, n, U_i, U_j, C and p. Third, our model specifies the reasons why the behaviour of others matters. In the basic threshold model, it is the sheer number of adopters that triggers imitation. As Schelling (1978: 96) notes, however, '[i]n some cases, it is not the number itself but some effect of the number that matters'. Our model shows that the behaviour of others matters because it can affect actors' beliefs in the effectiveness and/or payoffs associated with policies.

In threshold models, early adopters are characterized by low threshold values. In other words, early adopters have strong preferences for policy change, which leads them to adopt the new policy even if no other adopter exists. In this situation we can speak of innovation. In our model, early adopters are those for whom $nU_j - mU_i > C/p$ independently from the behaviour of others. In other words, early adopters are those for whom the payoffs and/or effectiveness associated with policy alternatives change independently from what others do.[9] Another characteristic of early adopters is that they face higher transactions costs (C) than latecomers. In effect, given that policy change for the first adopters is in fact innovation, the costs of searching for an appropriate alternative policy are higher than for latecomers, who can rely on policies that exist elsewhere. Another parameter that is relevant for early adopters is the uncertainty of the decision-making process (p). As shown in (7), high uncertainty (high values of p) amplifies the existing transaction costs, while low uncertainty reduces them. To the extent that the uncertainty of the decision-making process is related to veto players (since more veto players make policy change more difficult), early adopters can be expected to be countries with few veto players. The United Kingdom is

8. Note that threshold models, like our model, imply that interdependencies have a conditional effect on policy change. The number of previous adopters does not directly influence the probability that the innovation is adopted; rather, the impact of the previous adoptions depends on the thresholds of the various actors.

9. Unlike governments, private firms may engage in innovation in the absence of deteriorations in the utility or effectiveness of their existing business model. This can be explained by the fact that the competitive environment in which firms operate leads them to anticipate such deteriorations.

such an example, as it has often been the first country to adopt reforms that have subsequently spread, like the regulatory reforms of utilities.

The fact that some actors have adopted the new policy then affects the decisions of those who have not yet adopted it, but the process is much more complex than those described in simple threshold models. The reason is that the behaviour of others does not have a simple and straightforward impact on subsequent decisions. The behaviour of others may alter the payoffs associated with policies as well as beliefs about their effectiveness, but the relevance of diffusion mechanisms may vary, both across actors and over time. For example, some actors may learn from the behaviour of others, while other actors may be sensitive to symbolic imitation. In addition, all actors may be sensitive to the same diffusion mechanisms, but their relative relevance may vary over time. For example, learning may be more relevant in the early stages of diffusion processes while taken-for-grantedness may be more important in later stages.

The theoretical complexity of diffusion processes at the aggregate level makes it impossible to draw strong analytical conclusions on the equilibria that may be reached, the most interesting of which is convergence, namely a state where most actors have adopted the same policy. Simulations (also known as computational modelling or agent-based modelling) can be very useful in this context, as they enable the examination of how changes in the various parameters affect diffusion patterns at the aggregate level. Simulations are particularly well-suited to study the 'emergent properties' of a system, namely '[t]he large-scale effects of locally interacting agents' (Axelrod, 1997: 4), which in the present case would be the aggregate pattern of diffusion (and possibly convergence) that emerges from interdependent policy choices. As Macy and Willer (2002: 155) explain, a computational model of diffusion would 'start with some distribution of practices and a rule by which agents decide whether to abandon current practice in favor of one used by another agent'. Our model clearly specifies the decision rules: the decision depends on effectiveness and payoffs, which in turn are influenced by the behaviour of others through the various diffusion mechanisms. Another advantage of simulations is that, unlike mathematical analysis of formal models, they focus on processes rather than equilibria (Johnson, 1999: 1522). Thus, they can supply insights on how different diffusion processes may lead to the same equilibrium (e.g. convergence) and more generally on the characteristics of diffusion processes, whereas formal analysis permits conclusions only on the equilibria that are achieved, and thus provides much less information on the diffusion process itself. Simulating diffusion processes is beyond the scope of this article, but is a task that should surely be undertaken in the future.

5. Conclusion

This article has put forward a theoretical framework that permits 'Galton's problem' to be modelled rather than just controlled. The recent diffusion literature has stressed that countries need to be explicitly studied as interdependent actors, but has fallen short of supplying a coherent theoretical framework. This article is a first step towards a coherent theory of policy diffusion that can subsume the various diffusion mechanisms which have been identified in the literature, and which are originally grounded in very different, and often conflicting, theoretical approaches. We have put forward a simple expected-utility model of policy change that shows that both the effectiveness and the payoffs associated with policies matter in policy change decisions, and we have shown that these parameters are systematically affected by diffusion mechanisms. Diffusion mechanisms operate by altering the relative effectiveness and payoffs associated with policy alternatives.

We have also shown that this model generates complex aggregate diffusion patterns for which no simple equilibria can be identified. As a result, the conditions leading to convergence, which is possibly the most interesting equilibrium, could not be clearly identified. Computer simulations are a promising avenue for studying diffusion processes, and should be part of the agenda of the theoretical study of policy diffusion.[10]

At the empirical level, our model does not imply a radical change in current research strategies, but calls for a more accurate specification of empirical models. For instance, we have shown that learning (like the other diffusion mechanisms) cannot be expected to have an independent effect on policy change. As a diffusion mechanism, learning operates by altering beliefs about the effectiveness of policies. Effectiveness, however, interacts with payoffs in determining the expected utility of a policy. Learning variables should be entered in regression equations as part of an interaction with some measure of payoffs. This contrasts with current practices: Simmons and Elkins (2004), for example, include in their analysis a 'learning from success' variable that has an additive-only impact on policy change, however this is clearly significant in only two of their six models. Our model suggests that the modest significance of learning in Simmons and Elkins's findings may be due to a mis-specification of the model: learning should be expected to matter in combination with some measure of the payoffs associated with policies.

10. It is interesting to note that Axelrod's (1997: 148–77) model of the dissemination of culture shows that diffusion processes may well lead to convergence at the local level but polarization at the global level; in other words, diffusion can lead to clusters.

The need to model the effects of diffusion mechanisms as interactive can be generalized, and indeed illustrates how our theory can alleviate the 'vague theory and model uncertainty' problems that plague 'macrosociology' (as well as comparative politics) (Western, 1996). Western argues that sociological theories are usually not precise enough to provide guidance for the specification of empirical models. This is certainly an accurate description of the current state of diffusion research. Our model has made theory a little less vague. By identifying relevant interactions among mechanisms as well as between mechanisms and other variables, it enables researchers to better specify their empirical models.

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