Original Article

Explaining policy allocation over governmental tiers by identity and functionality

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Abstract   The allocation of policies across governmental tiers varies greatly among countries. This article investigates the impact of identity and functionality pressures on the allocation of policies at the local, regional and national level. Using a data set that combines an expert survey and several country studies, this article shows that identity pressures lead to a greater concentration of policies at the regional level. The effect of identity pressures, however, is moderated by two policy characteristics. First, regional concentration is more pronounced for social–cultural policies than for economic utilities policies. Second, policies with high externalities and scale effects are less subject to regional concentration. They tend to be located at the level that seems most functionally appropriate. This is a proof that functionality bites – even in countries with strong regionalist parties.
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Introduction

The allocation of tasks across governmental tiers is changing significantly over time. Policies such as agriculture, competition and money have been shifted upward to the European level (Hooghe and Marks, 2001) while at the same time policies such as culture, education and language have shifted downward to sub-national tiers in a number of countries (Swenden, 2006). These developments arouse the interest of political scientists in the causes underlying the (changing) division of policies across governmental levels. The decentralization theorem (Oates 1972, 1999) and postfunctionalism (Hooghe and Marks, 2009a) are examples of theories that explain the vertical state structure by functional and economic characteristics of policies (efficiency) on the one hand and

heterogeneous preferences or identity on the other (see below). However, we are still not able to sufficiently account for the (changing) allocation of policies across governmental tiers.

First, it is difficult to establish in how far efficiency shapes the structure of government (Hooghe and Marks, 2009b). Treisman (2007) concludes that, depending on demand conditions and various technological and social factors, anything from a unitary to a multi-tier structure could be most efficient in a given country at a given time. Also, most policies provided by government are not pure public goods,[1] and determining the optimal structure of the public sector becomes considerably more complex in the case of non-pure public goods (Oates, 1972, pp. 37–38). Second, we lack measures for the allocation of policies across governmental tiers in national multilevel systems. As Wallace Oates (1972, p. 196) and Edward Page (1991, p. 14) note, a direct measure requires a list of public goods provided by each level of government in each country.

The goal of this article is to explore in how far the (changing) distribution of policies across governmental tiers is a function of economic characteristics of policies and identity. This article tackles the aforementioned problems by combining a measure on the optimal jurisdictional size derived from an expert survey with a measure on the actual policy allocation across national, regional and local tiers in 26 countries (Hooghe *et al*, 2006). Using this recently published data set I will show that identity pressures lead to changes in the policy allocation across tiers. However, which policies are relocated is a function of two policy characteristics: efficiency and whether it is a social–cultural or an economic utility policy.

The next section elaborates on the decentralization theorem and post-functionalism, develops hypotheses when to expect changes in the policy allocation across tiers and deals with the research strategy used in this article. The following section discusses data and the section after that presents the model. The penultimate section contains the results, which is followed by concluding remarks.

Hypotheses

This section first discusses two theories for explaining policy allocation across governmental tiers. Then it is argued that the allocation of policies is policy specific and two hypotheses are put forward. First it is hypothesized that social–cultural policies are more likely to be provided by local and regional tiers. The second hypothesis focuses on functional characteristics of policies and states that policies with low externalities and scale effects are more likely to be relocated than policies with high externalities and scale effects. In the last section the combined effect of these two pressures will be considered.

Explaining the allocation of policies across governmental tiers: the decentralization theorem and postfunctionalism

The decentralization theorem states that the optimal degree of decentralization depends on the heterogeneity of preferences and inter-jurisdictional spillovers (externalities) and economies of scale (Oates, 1972, 1999; Alesina and Spolaore, 2003). An externality or spillover occurs when a decision produces costs or benefits to people other than those making the decision (Tullock, 1969). Scale effects occur when additional units of a good or a service can be produced with relatively less input costs (Tullock, 1969). In order to maximize welfare of citizens, public goods should be provided by the jurisdiction that, on the one hand, is able to tailor public goods toward local preferences and, on the other hand, reaps scale effects and internalizes externalities.

Related to the decentralization theorem is the theory of postfunctionalism (Hooghe and Marks, 2009a). The central claim of postfunctionalism is that jurisdictional design is best conceived as the outcome of identity and functional and, to a lesser extent, distributional pressures. Hooghe and Marks start from the premise that governance has two entirely different purposes. On the one hand, governance is a means to achieve collective benefits by coordinating human activity; on the other hand, governance is an expression of community. There is an inherent tension between these two purposes of governance as the functional need for human cooperation rarely coincides with the territorial scope of community (Hooghe and Marks, 2009a, p. 2). The authors argue that once jurisdictional design is politicized, there is greater chance that identity gains relevance over functional pressures. Hooghe and Marks extend the argument by arguing that community and self-governance, expressed in public opinion and mobilized by political parties, lie at the heart of jurisdictional design (2009a, p. 23). They expect, therefore, that – to the extent that public opinion and political parties are involved – jurisdictional design is biased toward identity rather than toward distributional and functional pressures.

Postfunctionalism and the decentralization theorem share the premise that jurisdictional design is or should be a function of functionality and identity or heterogeneity of preferences. But how is the allocation of policies across governmental tiers affected by these two variables?

Identity[2]

There are many ways in which ethnic minorities can be recognized once the solutions of territorial separation or integration/assimilation are not seen as feasible options. Arrangements may vary from special privileges and rights to various forms of federalism and decentralization (Duchacek, 1970; Elazar, 1987;

Keating, 2001). There are numerous examples that lead us to expect that social–cultural policies are the first policies to be subject under such arrangements.

If we observe the institutional development of regionalization and federalization processes over time we find that culture, education and language policies are among the first to be tailored toward the demands of ethnic minorities. Belgium, for example, introduced language laws in 1898, in the 1930s and 1963, which made Dutch an official language, made the institutions in Brussels bilingual and established a linguistic frontier between the regions (Hooghe, 2004). The constitutional reform of Belgium in 1970, which started formally the federalization process, set up two cultural councils consisting of Flemish- and French-speaking members of the national parliament that had authority to pass degrees on aspects of culture, education and language (Swenden, 2006, pp. 39–42; Watts, 2008, pp. 43–45).

A second example concerns Italy. In 1970, a constitutional revision paved the way for regionalization by establishing 15 ordinary-statute regions next to the five special-statute regions that had already been established in 1948. In 1977, a law provided *regioni* with competences in urban planning, regional development, urban and rural policing and also health and hospital assistance, education and culture and communications (Putnam, 1993, pp. 18–26). However, it was 25 years later when a constitutional reform in 2001 consolidated the principle of residuals powers (given to the *regioni* in 1997) and extended it to legislative competencies concurrent with the central government in international and EU relations, foreign trade, job protection and industrial safety, education, scientific research, health, food, sport, civil protection, town planning, ports and airports, cultural and environmental resources, transport and energy (Amoretti, 2004).

Also, cross-sectionally we observe that social–cultural policies are prime subject matter of federative arrangements. Corsica in France, for example, receives additional state subsidies and some enhanced authority (beyond that of other *régions*) over education, culture, the environment, agriculture, housing, transport and social policy (Loughlin and Daftary, 1999). The most important competencies of *Åland*, an island within Finland with a Swedish speaking minority, include education, culture and preservation of ancient monuments, health and medical care, environment, industry promotion, and radio and television (Loughlin and Daftary, 1999). Similarly, *Quebec* within Canada has somewhat more extensive competencies in immigration, pensions, health and education compared to its provincial counterparts (Banting, 2005; Watts 2008, pp. 32–33).

As elaborated above, postfunctionalism expects that once identity is politicized there is a greater chance that identity gains relevance over functional pressures. The literature shows indeed that regional parties increase

ethnic conflict and thereby produce legislation that favors certain groups/ regions over others (Amoretti and Bermeo, 2004; Brancati, 2006, 2008). This has led Swenden (2006, p. 187) to state that 'parties and party leaders are perhaps the single most important political actors for determining how the decentralized structure of the state evolves' (see also Riker, 1964 and Filippov *et al*, 2004). The presence of ethnic and regional parties is, therefore, expected to strengthen the causal link between ethnic minorities and the policy allocation across governments.

Functional characteristics of policies

As noticed earlier, two important functional characteristics of policies are scale effects and externalities. Optimal provision of policies is achieved once scale effects can be reaped and externalities are internalized (Oates, 1972, 1999; Alesina and Spolaore, 2003; Besley and Coate, 2003). It is important to note that in this perspective each policy has its own optimal jurisdictional size. Deviation from optimality implies costs or, at least, not incurred efficiency gains (Oates, 1972). Therefore, policies with low scale effects and externalities are less costly to relocate over tiers than policies with high scale effects and externalities.

For example, it is very costly to decentralize defense as this would imply that each of the sub-national jurisdictions would have to establish its own army. Scale effects can be achieved when defense is centralized as financial resources are pooled and more diverse weaponry may be bought. Also, defense is a good whose benefits extend nationwide (Ter-Minassian, 1997a). Museums, for example, are less costly to decentralize than defense. Scale effects with respect to diversification and appropriating a collection can be achieved when financial resources are centralized but the costs implied by decentralizing museums are probably (much) less than the costs to decentralize defense. This leads to the hypothesis that the likelihood of relocation from the optimal tier to higher or lower jurisdictions is greater for policies with low externalities and scale effects than for policies with high externalities and scale effects. In other words, I expect that policies like defense have a lower probability to be relocated from the optimal tier than policies like museums.

Identity *vs* functional pressures

According to postfunctionalism and the decentralization theorem, the allocation of policies across governmental level should be a result of functional and identity pressures. By using 'extreme' cases (for example defense, foreign relations) many scholars have found evidence for the functional hypothesis

(Ter-Minassian, 1997b; Swenden, 2006). These studies demonstrate, for example, that defense and foreign relations are almost always a competence of the central government, whereas a policy like sanitation is assigned to local governments. Analyses on the whole government policy portfolio (for example, fiscal indicators) confirm the functional as well as the identity hypothesis (Oates, 1972; Panizza, 1999). Both types of research, however, have caveats. First, focusing on the total or great part of the government policy portfolio essentially shows that the identity effect is strong enough to 'pop up' at the aggregate level. But, if one shifts the analysis to the policy level the evidence is inconclusive. Second, research focused on 'extreme cases' cannot account for variation in the allocation of 'non-extreme policies.'

Several cases in point are given by Ter-Minassian (1997b) who describes the allocation of social–cultural policies across governmental levels for several countries. The provision of unemployment benefits is often a central responsibility but not always as is the case in the United States, where it is a state responsibility. Social assistance is delivered by local governments but the central and/or regional level generally plays a role in setting standards for local programs. In the area of education, the most frequent pattern is the assignment of responsibility for the primary and secondary levels to local governments and for the postsecondary level to the national or regional governments. In a number of unitary states, however, education at all levels remains a central government responsibility. As a final example, Ter-Minassian (1997b) shows that concurrent responsibilities are frequent in the area of health. Local governments are often responsible for basic and preventive health-care provision. The states in federal countries and the central government in unitary countries are generally responsible for health protection and hospitals. Also, decentralization of health policies demonstrates overlapping, and even duplication of services.

For all these policies we cannot establish in how far their allocation across governmental tiers is caused by functionality and identity. Still, it is very likely that each and every policy is allocated according to both pressures albeit to a different degree. This leads to the question what to expect when the identity and functional hypotheses are considered simultaneously?

Table 1 summarizes the expectations according to functional and identity pressures. The rows in Table 1 illustrate the hypothesized effect of functionality whereas the columns exhibit the assumed consequence of identity.

Clear expectations can be derived when both pressures exert an equivalent influence. Social–cultural policies with low externalities and scale effects (cell D) are most likely whereas economic utilities policies[3] with high externalities and scale effects (cell A) are least likely to relocate. However, it is rather difficult to establish specific expectations once the two hypotheses 'bite each other' as is the case with social–cultural policies with high externalities and scale effects

Table 1: Expectations of the likelihood of relocation of policies across governmental tiers when the functional hypothesis (externalities and scale effects) is combined with the identity hypothesis

Degree of externalities and scale effects of policies	Policies	
	Economic utilities	Social–cultural
High	A: − − Consumer protection Cemeteries and crematoria	B: − + Preschool Nurseries and kindergartens
Low	C: + − Water supply Gas	D: + + Family welfare services Museums

Notes: + = likely to be relocated; − = not likely to be relocated.

(cell B) and economic utilities policies with low externalities and scale effects (cell C). But the likelihood to relocate for these policies should lie in between cell A and cell D policies. To put it in mathematical terms, the probabilities to relocate should exhibit the following rank order (from low to high): $A < B < C < D$ or $A < C < B < D$.

In case of cell A and cell D policies we analyze the aggregate and analogous effect of functionality and identity. But analyzing the equivalent effect does not permit me to analyze the strength of each pressure separately. To establish the causal mechanism underlying policy (re)allocation I have to pursue a policy-by-policy analysis while carefully controlling for both pressures.

The strategy used in this article is as follows. An expert survey is used to measure externalities and scale effects of individual policies. This indicator is subsequently used to select policies that are most and least likely to relocate when one considers functional characteristics only. According to the identity hypothesis, social–cultural policies are more likely to be provided by sub-national tiers. Using these two criteria, policies can be categorized according to Table 1. Subsequently, two policies from each cell of Table 1 are examined in detail. The strategy suggested in this section requires that externalities and scale effects for *each policy* are being measured. The next section discusses how this article approaches this issue.

Data

Independent variable: functionality

The functional variables used in the analysis in this article are based upon an expert survey conducted in January–March 2006 by Hooghe *et al* (2006).

The experts were obtained from the member list of the Organized Section Federalism and Intergovernmental Relations of the American Political Science Association and of the European Group of Public Administration (EGPA). The section and EGPA organizes members with an interest in federalism, intergovernmental relations and state and local government. Thirty-six out of 120 experts (response rate 30 per cent) were asked to evaluate the externalities and scale effects for 34 policies (a list of policies is provided in Figure 1). All experts were academics at American (30) or European (6) universities.[4]
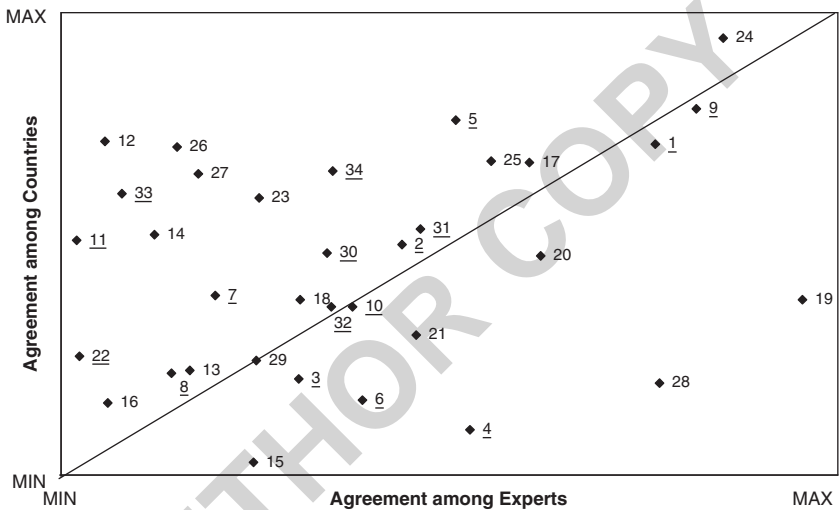

Figure 1: Agreement between experts and countries on policy provision for 34 policies.

Notes: High values indicate agreement and low values signify disagreement. Policies below the line indicate that the experts agree more among each other regarding which tier(s) of government should provide the policy than the countries do. Policies above the line indicate that the countries agree more than the experts do. Social–cultural policies are underlined. Agreement is calculated for 36 experts who gave scores for 34 policies regarding five jurisdictions and for 26 countries that were scored according to seven categorical outcomes (appendix).

1 = pre-school education; 2 = primary education; 3 = secondary education; 4 = vocational and technical education; 5 = higher education; 6 = hospitals; 7 = health protection (for example disease prevention); 8 = welfare homes (for example orphanages); 9 = nursery and kindergarten; 10 = in-home services for the elderly and handicapped; 11 = family welfare services (for example homeless shelters, families in crises); 12 = roads (including local roads to highways); 13 = transport (including rail transport, subways/metros, buses); 14 = water supply; 15 = electricity; 16 = gas; 17 = district heating (public distribution of hot water); 18 = tourism promotion; 19 = consumer protection; 20 = town planning; 21 = regional/spatial planning; 22 = public housing; 23 = sewage and water treatment; 24 = cemeteries and crematoria; 25 = refuse collection; 26 = refuse disposal; 27 = environmental protection (including air, water, soil); 28 = fire protection; 29 = voter registration; 30 = theatre and concert facilities; 31 = parks and open spaces; 32 = sport and leisure activities; 33 = museums; 34 = libraries.

The 34 policies were taken from the country studies performed by the Council of Europe (1996–2006) and the Local Government and Public Reform Initiative (Horvth, 2000; Kandeva, 2001; Munteanu and Popa, 2001) to establish congruence with the country policy provision data set (see below). The question wording for each of the 34 policies was as follows:

> Please place yourself in the role of a public policy analyst and put an X in the boxes [jurisdiction] that best fit your evaluation of what levels of government are most efficient in providing the policy in question. We would like you to give your judgment abstracting from the particulars of any country (i.e. whether a policy is actually provided in a particular country). Also the question of which level of government funds the policy is a separate topic and should not affect your judgments in this survey. By efficiency, we refer to (1) economic externalities and (2) scale economies.

The question was followed by a definition of scale effects and economic externalities.

> *Economic externalities* are the positive or negative economic effects of a policy for individuals in other jurisdictions. Efficient policy should encompass the people economically affected by the policy. For example, defense policy protects all those who live in a country, while street cleaning affects only those in a particular locality.
> *Scale economies* refer to the decreased cost of policy provision per unit as the scale of provision increases. Efficient policy should reap the available economies of scale for providing a policy. Defense policy is most efficient when a single army deters threats to all those who live in a country, while street cleaning can be efficiently organized at a local level.

The expert was allowed to put an X in five jurisdictions (boxes) with assigned population sizes (based upon average population sizes of the jurisdictions classified in the Nomenclature of Territorial Units for Statistics and Local Administrative Unit used by the European Union):

Local	$< 20\,000$
Local–Regional	$\pm\,100\,000$
Regional	$\pm\,1$ million
Regional–National	$\pm\,5$ million
National	> 10 million

The experts were allowed to put an X in more than one jurisdiction to allow for the possibility that some policies are efficiently handled at multiple scales. The experts appear to converge (Cronbach's $\alpha = 0.873$) and there seems to be no systematic error.[5]

For each local, regional and national tier of a country an average population size is calculated.[6] By using the expert survey, a probability can be allocated to a particular governmental tier. These variables – one per tier – measure the likelihood that tier A in country B has a role in the provision of policy C. These probabilities represent the likelihood that a particular jurisdiction will provide a policy according to functional characteristics.[7] Rather than pinpointing precisely which jurisdictional size should provide the policy, this measurement excludes certain possibilities. For example, the expert survey might signify that primary education may be efficiently handled at jurisdictional sizes of 20 000 or 100 000 people but not above 1 million.

Dependent variable: allocation of policies across government tiers

The expert survey data are matched to data on the actual policy provision by national, regional and local governments in 26 West, Central and Eastern European countries and former Russian Republics. These data are collected by combining country studies on the structure and operation of local and regional democracy performed by the Council of Europe (CoE) and The Local Government and Public Service Reform Initiative (LGI).[8] The country studies provide information on policy provision for 34 policies which correspond to those used in the expert survey. The data show for each country and policy whether the national (highest), regional (intermediate) or local (lowest) tier has a role in policy provision. This means that there are seven possibilities – outcome categories – for a country to provide a policy. Each of the three tiers can provide the policy on its own, two tiers can co-provide a policy and all three tiers can jointly provide a policy.

The country studies indicate whether a particular tier has a role in policy provision but the roles are not clearly specified in terms of *depth* and *scope*. First, the role of a tier may range from autonomous decision-making on policies to implementation according to strict central guidelines. Unfortunately, the country studies do not differentiate between regulation and executive powers. Second, the dependent variable does not provide information on the scope of the role either as it is not possible to discern the precise division of tasks between tiers. For example, when a policy is performed at the local as well as the regional level one does not know whether the division of tasks between these tiers is 30–70 per cent or 70–30 per cent and so on.

What one may argue, however, is that when the national, regional and local tier co-provide the policy the country is more decentralized than in the case when the national government solely provides the policy.

The dependent variable is operationalized as a multinomial variable to account for the fact that the extent of decentralization cannot be discerned. That is, the data may indicate that decentralization has taken place, but they do not allow me to discern with respect to the *depth* (decision-making *vs* implementation powers) or *scope* (finance, infrastructure, personnel and so on) of decentralization. However, the operationalization of the dependent variable does not affect the empirical test. Both postfunctionalism and the decentralization theorem state that policies should be adapted toward identity and decentralization is an instrument to achieve this in an optimal manner. But the decentralization theorem or postfunctionalism does not say anything about the required depth or scope of decentralization. As Treisman notes (2007, p. 11) 'an all-powerful central government, implementing [policies] via subordinate field agents, could achieve the same efficiencies.'

I include only tiers where *voice* is organized, that is, tiers with a parliament, assembly or council to ensure that identity may have an influence on policy implementation. A centrally appointed executive, who is responsible to the national government only, can relatively easily neglect identity pressures.

Some countries combine deconcentration with self-governance at the same governmental tier either by creating separate administrations (Denmark, France, Norway, Romania and Sweden) or by a centrally appointed executive head (Albania, Belgium, Lithuania, Poland and the Netherlands). These governmental levels are included as some of these countries elect representatives in the executive of the deconcentrated state administration and/or the executive head is responsible to the council with respect to the deconcentrated tasks (Belgium, Denmark, Luxembourg, the Netherlands and Sweden). In other countries the policy portfolio of the deconcentrated state administration is rather limited (France, Norway, Poland and Romania). In Albania and Lithuania, the executive heads are centrally appointed but there is an advisory council present. The Caucasian republics make extensive use of centrally appointed executives who are under strict central government control. These sub-national tiers are still included as long as there is an advisory council present. The model analyzed in this article introduces a variable that controls for the extent of democracy within a country.

To summarize, the dependent variable indicates whether a *particular tier or a combination of tiers, where* voice *is organized, has a role in policy implementation*.[9]

Convergence between countries and experts

When efficiency plays a role with regard to the allocation of policies across governmental tiers the expert and country data should converge. To gauge whether this is the case, agreement among experts and countries is calculated per policy (see Appendix). Figure 1 presents country and expert agreement scores for 34 policies. High agreement scores for countries and experts are expected for policies with high externalities and scale effects whereas low functional pressures should lead to low agreement scores.

A first glance on Figure 1 reveals that convergence between countries and experts is rather small (Pearson $r = 0.27$, not significant). As I will argue in this section, this is a result of the way the data are constructed.

Table 2 shows some examples of policies in which the experts and countries converge and diverge. Convergence is revealed when agreement scores for the experts and the countries are simultaneously low or high. Divergence between countries and experts is signified when the countries have higher agreement scores than the experts and *vice versa*.

Countries and experts converge on the policies nurseries and kindergartens and cemeteries and crematoria. About 50 per cent of the experts indicate that

Table 2: Convergence and divergence between experts and countries on policy provision for eight policies

	Experts	Countries
Convergence experts–countries		
High agreement scores		
Nursery and kindergarten	0.429	0.657
Cemeteries and crematoria	0.443	0.761
Low agreement scores		
Gas	0.133	0.217
Welfare homes	0.165	0.261
Divergence experts–countries		
Ceiling effect		
Consumer protection	0.482	0.372
Fire protection	0.411	0.248
Multilevel		
Roads (including local to highways)	0.132	0.607
Environmental protection (including air, water, soil)	0.179	0.559

Note: Shown are agreements scores (appendix). The agreement scores for the experts are calculated for the frequencies of placed *X*s over five jurisdictions. The agreement scores for the countries are calculated for the frequencies of countries over seven category outcomes.

these policies should be provided by jurisdictions with a population size of about 20 000 and another 30 per cent indicate that these policies should be provided by jurisdictions with a population size of about 100 000. These policies are efficiently handled by local governments as the country data also show. In 73 per cent of the countries, nurseries and kindergartens are provided by local governments and in the remaining countries the policy is provided jointly by the local and regional tier. For cemeteries and crematoria we observe similar figures: in 83 per cent of the countries the policy is provided by the local tier and in 17 per cent of the countries the policy is jointly provided by the regional and local government.

Convergence between countries and experts is also signified by gas distribution and welfare homes. Low agreement scores signify that these policies can be provided by any (combination of) governmental tier(s). For both policies, the experts are equally spread out over all five jurisdictions, that is, each of the jurisdictions contains about 20 per cent of the total number of experts. The countries show a similar distributional pattern. These policies are provided by each of the tiers or any combination of the tiers and none of the outcome categories is empty.

Perhaps more revealing is to see when experts and countries diverge. Agreement scores for consumer protection and fire protection are higher for experts. The experts indicate that consumer protection should be provided by jurisdictions larger than 5 million or larger than 1 million (61 per cent respectively 20 per cent). In 46 per cent of the countries, the policy is provided by the national government and in a subsequent 37 per cent of the countries the policy is provided by the national government with another tier. The agreement among countries is low as the distribution of countries is spread out over four outcome categories. As a consequence there is a biased divergence with the experts. Some of the countries have populations that by far exceed 5 million people and have regional jurisdictions with several million people. These large countries will (partly) provide consumer protection through their regional tiers. Small countries, on the other hand, which have about 2–3 million inhabitants, will most probably provide consumer protection solely through their national government. Country size matters and, therefore, an analysis on policy provision by governmental tiers should correct for this.

Countries and experts also diverge on environmental protection and roads. For these policies agreement scores are higher for countries. The experts are equally distributed over all five jurisdictions, which suggest that the policy may be provided by any tier or that the policy should be provided by all jurisdictions. The distribution of countries over outcome categories, however, is skewed as in more than 60 per cent of the countries these policies are co-provided by the local, regional and national tier and in a subsequent 20 per cent of the countries these policies are co-provided by the national and local

tier. These are examples of policies that should be provided by multiple tiers and can therefore be called multilevel policies. Thus, next to country size one should also correct for the 'multilevelness' of policies.

Model

To test the identity and functionality the hypotheses stated previously, a *multinomial logit model* is estimated that includes functional, identity and control variables. Multinomial logit models calculate predicted probabilities for each of the outcome categories per unit of analysis and assesses whether the independent variables have a bearing on which outcome category provides a policy.

For each local, regional and national tier a variable is introduced that represents the likelihood that the tier will provide a given policy (pN, pR and pL). These variables are operationalized as the probability that an expert would place an X in a jurisdiction with a similar population size. One should also account for country size and the 'multilevelness' of policies (see above) and therefore the model introduces a *ceiling effect* and a *multilevel* variable. The variable *ceiling effect* measures, for each policy and country, the percentage of experts who placed an X in jurisdictions above the national tier of the given country. The variable *multilevel* measures the number of placed Xs by the experts per policy. The *ceiling effect* varies over countries and policies whereas *multilevel* varies over policies only.

The model introduces two identity variables. *Ethnic fragmentation* (ethfrag) measures the extent to which there are ethnic minorities present within a country and the variable *strength of the ethnoregional parties* measures the degree of political mobilization of regional and ethnic minorities. *Ethnic fragmentation* is measured as the probability that two randomly selected individuals belong to a different ethnic group (Annett, 2001; Fearon, 2003). *Strength of the ethonoregional parties* (perseats) is operationalized as the percentage of seats for the ethnoregional party in the lower chamber of parliament (Schakel, 2009).

Finally, three control variables are introduced as previous research has shown that these factors might also have a bearing on decentralization of policy provision. The control variables are *economic welfare* (Wheare, 1963; Oates, 1972; Panizza, 1999; Treisman, 2006), *democracy* (Sharpe, 1993; Panizza, 1999; Treisman, 2002; Alesina and Spolaore, 2003) and *EU-membership* (Hooghe, 1996; Marks *et al*, 1996; Jeffery, 2000; Hooghe and Marks, 2001; Brusis, 2002). *Economic development* (ecdev) is measured by the logarithm of (real) GDP per capita (Heston *et al*, 2006) and *democracy* (dem) is measured by the polyarchy variable taken from the PolityIV index (Marshall and Jaggers,

2004). Finally, *EU-membership* (EU) is operationalized as a dummy variable (Dinan, 2005). To sum up, the following multinomial logit model is estimated:[10]

$$\mathrm{Pr}(\mathrm{outcome\ category}) = \beta pN + \beta pR + \beta pL + \beta \mathrm{ceiling}$$
$$+ \beta \mathrm{multilevel} + \beta \mathrm{ethfrag} + \beta \mathrm{perseats}$$
$$+ \beta \mathrm{ecdev} + \beta \mathrm{dem} + \beta \mathrm{EU} + \mathrm{constant}$$

Results

Each of the independent variables is significant and has its hypothesized effect except for the democracy and EU-membership variable that are not significant (results not shown).[11] To test the identity and functionality hypotheses, predicted probabilities for each country*policy and for seven outcome categories are estimated.

To illustrate the logic, let us examine four types of policies that conform to the hypotheses set out in Table 1. First, policies are categorized according to whether they are of a social–cultural or economic utilities nature (see Figure 1).[12] Next, agreement scores of the expert survey are used as a proxy for the intensity of externalities and scale effects. This leads to the following policy selection (see Table 1): cell A: consumer protection and cemeteries and crematoria; cell D: family welfare services and museums; cell B: preschool and kindergarten and nursery; and cell C: water supply and gas. In order to gauge the effect of functional and identity pressures, I compare predicted probabilities of countries with a low degree of ethnic fragmentation to those of countries with a high degree of ethnic fragmentation.

Difference in predicted probabilities

Table 3 shows the difference in predicted probabilities for seven outcome categories for the eight selected policies between countries with a high degree of ethnic fragmentation (>0.335; N countries $= 13$) *vs* those with a low degree of ethnic fragmentation (<0.335; N countries $= 13$). Cell A and cell D policies should show the lowest, respectively, the highest degree of policy reallocation as the functional and identity pressures have an equivalent effect. For cell B and cell C policies there are no firm expectations as the functional and identity hypotheses 'bite' each other.

The first notable result is that the differences in predicted probabilities for all eight policies show the same pattern over the outcome categories. In ethnically fragmented countries, policies are less often provided by the local tier or by the local and national tier together and are more often provided by the regional tier or in combination with the regional tier. The differences in predicted

probabilities may amount up to 30 per cent. The local and national tiers in ethnically fragmented countries seem to lose role whereas the regional government clearly gains a role in policy provision.

The results reported in Table 3 provide some limited support for the functional and identity hypotheses specified in Table 1. Consumer protection and cemeteries and crematoria show the lowest degree of relocation whereas family welfare services and museums show a higher degree of relocation. Although confirming the hypothesis, the difference is rather small, that is 4 per cent (A *vs* D).

Functional characteristics of policies do not seem to play a role (A *vs* C) and when ethnic or regional minorities are present, identity seems to overrule functionality (D *vs* B). Social–cultural policies are somewhat more likely to become regionalized but – contrary to expectations – the difference is not large. The average difference in predicted probability between a social–cultural and an economic utility policy is approximately 12 per cent (B plus D *vs* A plus C). In other words, in ethnically fragmented countries there is an additional 12 per cent higher chance that the regional tier is involved in the provision of social–cultural policies. Conversely, the probability that the national or local government is involved in the provision of social–cultural policies is 12 per cent lower in ethnically fragmented countries.

Changes in predicted probabilities

Are the observed differences in predicted probabilities for the different subsets of policies truly a result of identity pressures? To examine the precise causal mechanism, it might be more revealing to look at *changes* – instead of *differences* – in predicted probabilities.

Table 4 reports changes in predicted probabilities for the eight selected policies when both *ethnic fragmentation* and *strength of ethnoregional parties* go from their minimum to their maximum while all other independent variables are held at their mean. This change resembles a comparison between Poland and Greece, on the one hand, with Belgium and Bosnia and Herzegovina, on the other.

As with the differences in predicted probabilities, the changes in predicted probabilities show the same pattern over the outcome categories, but are of a greater magnitude than those reported in Table 3 (up to 65 per cent instead of 30 per cent). This adds further weight to our conjecture that identity pressures lead to a larger role in policy provision by the regional tier while the local and especially the national tier lose role.

Social–cultural policies with low externalities and scale effects have the highest likelihood whereas economic utilities policies with high externalities

Table 3: Difference in predicted probability for policy provision by governmental tiers

Policy provision through	A: High intensity Economic utilities		D: Low intensity Social–cultural		C: Low intensity Economic utilities		B: High intensity Social–cultural	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
National tier only	-13.7*	2.2	0.4	-1.2	-0.2	-0.5	0.7	1.1
Regional tier only	6.7*	3.5*	4.4*	3.9*	3.4*	5.9*	2.3*	3.0*
Local tier only	-1.2	-32.2*	-17.8*	-9.4*	-12.4*	-14.7*	-31.6*	-33.8*
National + Regional tier	8.1*	0.8	2.4*	2.8*	2.0*	3.4*	0.8*	0.7
National + Local tier	-5.1*	-1.9*	-13.3*	-12.3*	-13.3*	-8.5*	-4.3*	-3.6*
Regional + Local tier	4.0*	26.2*	22.9*	20.2*	22.4*	17.1*	29.7*	30.2*
National + Regional + Local tier	1.2	1.5*	1.0	-4.0	-1.9	-2.8	2.4	2.4*
$\Sigma|X|$	39.9	68.3	62.3	53.7	55.6	52.8	71.8	75.0

Notes: Shown are differences in predicted probabilities (in percentages) for eight policies and seven outcome categories between low (<0.335) and high (>0.335) ethnically fragmented countries (see main text for the specified multinomial logit model used to obtain the estimates). The last row shows the sum of absolute differences in predicted probabilities per policy.
(1) consumer protection; (2) cemeteries and crematoria; (3) family welfare services; (4) museums; (5) water supply; (6) gas; (7) preschool; and (8) kindergarten and nursery.
*$P<0.05$ (one-way ANOVA; $N=26$ countries listwise deletion).

Table 4: Change in predicted probability for policy provision by governmental tiers

Policy provision through	A: High intensity Economic utilities		D: Low intensity Social–cultural		C: Low intensity Economic utilities		B: High intensity Social–cultural	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
National tier only	−25.4	−1.8	−3.5*	−4.4*	−2.5*	−11.5*	−1.0	−1.0
Regional tier only	6.5	0.9	0.9	1.2	0.6	2.0	0.6	0.6
Local tier only	−1.4	−52.1*	−25.3*	−15.8*	−19.7*	−24.5*	−52.8*	−53.4*
National + Regional tier	9.1	0.2	1.1	2.6	1.2	3.4	0.2	0.2
National + Local tier	−4.4	−3.4	−21.8*	−21.3*	−22.9*	−14.4*	−8.0	−6.9
Regional + Local tier	15.8	57.4*	65.6*	61.4*	66.2*	58.6*	64.8*	63.3*
National + Regional + Local tier	−0.2	−1.2	−16.9	−23.7	−22.9	−13.6	−3.7	−2.7
Σ|X|	62.8	116.9	135.1	130.5	135.9	127.8	131.2	128.0

Notes: Shown are changes in predicted probabilities (in percentages) when ethnic fragmentation and strength of ethnoregional parties goes from its minimum (0.047% respectively 0.0% for Poland and Greece) to its maximum (0.681% respectively 40.48%,for Bosnia and Herzegovina and Belgium). All other variables are held at their mean. Estimates are obtained with the prvalue command in Stata. The last row shows the sum of absolute changes in predicted probabilities per policy.
(1) consumer protection; (2) cemeteries and crematoria; (3) family welfare services; (4) museums; (5) water supply; (6) gas; (7) preschool; and (8) kindergarten and nursery.
*$P < 0.05$ (delta method).

and scale effects have the lowest likelihood to be relocated (D *vs* A). Furthermore, policies with low scale effects and externalities exhibit more change than those with high scale effects and externalities (C and D *vs* A and B). In addition, social–cultural policies show more change in predicted probabilities than economic utilities policies (A *vs* B) corroborating the conjecture that identity overrules functionality. However, policies with low externalities and scale effects show an equal amount of change (B *vs* C and D).

To put the results in other words, a social–cultural policy has a 40 per cent higher probability than an economic utility policy to be reallocated when the identity pressures go from their minimum to their maximum, holding all other independent variables constant (A *vs* B). But this is only the case for policies with high scale effects and externalities. There is no difference between social–cultural and economic utility policies with low scale effects and externalities (C *vs* D). The difference in likelihood to be relocated between a policy with the lowest and highest scale effects and externalities may amount up to about 42 per cent (A *vs* C and D).

Concluding Remarks

This article presents a systematic empirical test of theories on jurisdictional design and on multilevel policy provision in particular. The results confirm that countries do follow the considerations of the decentralization theorem and postfunctionalism in that the division of policy provision tasks across governmental tiers is affected by efficiency and identity. However, the challenge in this article was to show when and how the balance between functionality and identity pressures tips over to one or the other side.

Provision of social–cultural policies are more likely to be provided by regional tiers when ethnic minorities are present and politically mobilized whereas the national and local tiers lose role in policy provision. Functionality is not totally cancelled out as policies with high externalities and scale effect are less likely to be relocated than policies with low externalities and scale effects.

When functional and identity pressures are considered simultaneously then we observe that economic utilities policies with high externalities and scale effects are least likely to be relocated; hence, the allocation over tiers for these policies is mostly determined by functional pressures. It appears that policies with low externalities and scale effects are more affected by identity pressures than policies with high externalities and scale effects irrespective of whether they are social–cultural or economic utilities; hence, the allocation over tiers for these policies is to a greater extent determined by identity pressures. Identity clearly overrides functionality as can be observed for social–cultural policies

with a high intensity of externalities and scale effects. The likelihood to be relocated for these policies is about the same as those for policies with low externalities and scale effects.

The results implicate that jurisdictional design is constrained by identity and functionality. Hooghe and Marks (2009a) argue that the European Union is part of a system of multilevel governance which is driven by identity politics as well as by functional (and distributional) pressures. This article illustrates that their argument also applies to the national multilevel system and finds support in data on the allocation of policies across governmental tiers. Jurisdictional design, therefore, needs not to be functionally efficient, and depending on the particular policy, the balance between functionality and identity tips over to one pressure or the other. Furthermore, jurisdictional design might be more in flux than previously thought. Not only technological development (De Vries, 2000) and changes in the government policy portfolio (Sharpe, 1993) but also mobilization of exclusive sub-national and national identities by political parties (Hooghe and Marks, 2009a) might induce politicians to reform the multilevel government structure.

Acknowledgements

About the Author

Arjan H. Schakel is a Newton International Fellow at the University of Edinburgh. The research presented in this article is part of Schakel's PhD research. He wrote a dissertation on the structure of regional government at the VU, Amsterdam, the Netherlands. His research interest is in federalism, decentralization, regional government and regional party politics and he has published several articles in journals such as *Regional and Federal Studies* and *Governance* (forthcoming). He is also co-author (with Liesbet Hooghe and Gary Marks) of a forthcoming book by Palgrave entitled *The Regions Rise! Regional Authority in 42 Countries (1950–2006)*. His website is available at www.arjanschakel.nl.

Notes

1 Pure public goods exhibit two significant characteristics: non-rivalry and non-excludability (Cornes and Sandler, 1999, pp. 53–58) Non-rivalry means that the consumption by one individual does not reduce the services available for consumption by others. Non-excludability signifies that the services are made available to many and consumption by others cannot be avoided.

2 Ethnicity, based upon race, language, culture, religion or territory, is considered to be a major ingredient for identity (Duchacek, 1970; Keating, 2001; Swenden, 2006) as well as for heterogeneous preferences (Oates, 1972; Panizza, 1999). Therefore, in this article, I use ethnic fragmentation as a proxy for differing identities and heterogeneous preferences.

3 The categorization of policies is based upon the country studies from which data are obtained (see below).

4 A structural bias may result from the fact that most consulted experts work at a university in the United States of America (the country, however, is not included in the analysis). It might be that their country experience (partly) framed their answers to the question which jurisdiction should provide a policy. We cannot discern whether this is the case but we may argue to what extent this has implications for the findings. The results are based upon differences between policy provision by tiers as functional theory would have it against actual policy provision in countries. If the experts used their country experience in their answers then the benchmark is biased and does not reflect optimal policy provision according to scale effects and externalities. Rather, the deviations refer to a difference in policy provision between the United States and another country. In spite of this, the conclusions remain the same; that is, when, for example, ethnic fragmentation increases it leads to a higher probability that the regional tier is involved in policy provision compared to the state level in the United States. The results, however, are either under or overestimations compared to a functional benchmark. As the United States is a rather decentralized country, compared to the countries in our analysis, underestimation is more likely than overestimation.

5 Two different versions of the expert survey were sent to the experts. Version A presented the 34 policies in the order as they appeared in the country studies mentioned below ($N = 14$). Version B presented the 34 policies in alphabetical order ($N = 22$). The presence of systematic error because of the presentation of the list of policies can be gauged by comparing the answers of the experts for both versions of the expert survey. A one-way ANOVA analysis for each policy reveals that nine out of 170 possible comparisons (34 policies × 5 jurisdictions) are significantly different between the two versions (that is 5 per cent). This leads to the conclusion that, overall, there are no significant differences between the two versions of the expert survey and that there is no systematic error due to the listing of the policies. Additional validity and reliability checks are presented in an appendix which can be downloaded from the author's website (www.arjanschakel.nl).

6 Data on population size are obtained from the country studies (see below) and www.statoids .com (last accessed 20 August 2007).

7 See for other attempts to measure externalities: Weigher and Zerbst (1973) and Dear, Fincher and Curie (1977).

8 CoE has published 32 country studies on the structure and operation of local and regional democracy (Council of Europe, 1996–2006). Twenty-seven country studies contain a table that shows which tiers are competent for the provision of 47 policies. Representatives from the ministries in charge of local and regional government represented the country in the CDLR (The Steering Committee on Local and Regional Democracy of the Council of Europe) and they completed/filled in the tables (Montgomery, *personal communication*). The Local Government and Public Service Reform Initiative conducted country studies in Eastern and

Central European Countries and in several former Russian Republics (Horvth, 2000; Kandeva, 2001; Munteanu and Popa, 2001). The set-up of the country studies and the information contained within the country studies is broadly similar to that of the CoE. Twenty-three country studies present tables that score for 44 policies whether a governmental tier has a role in policy provision. The country studies provide data on actual policy provision per tier for a total of 34 policies and 26 countries: Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Croatia, Denmark, Finland, France, Greece, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, the Netherlands, Norway, Poland, Romania, Russian federation, Serbia and Montenegro, Spain, Sweden, Switzerland, Ukraine and Uzbekistan. Five countries are analyzed by both sources (Croatia, Latvia, Lithuania, Poland, and Romania). To enhance comparability, the Council of Europe data for these five countries are used as this source provides information for the largest number of countries used in the analysis. The results presented in this article do not significantly change when data from the LGI country studies are used instead of the CoE data.

9 More information on the country studies and further reliability and validity checks are provided in an appendix on the author's website (www.arjanschakel.nl).

10 The outcome categories constitute a nominal variable. Multinomial logit regression calculates probabilities of policy provision by the different tiers without making any assumption on the rank order or intervals of the different categories. Country clustered corrected standard errors are calculated in order to correct for the nestedness of policies within countries. A potential weakness of the multinomial model is the independence of irrelevant alternatives (IIA) assumption. IIA means that the ratio of the categorical probabilities for two alternatives, A and B, is independent from all other alternatives in the categorical set (see Long, 1997). I compute Hausmann and Small–Hsiao test statistics that suggest that the IIA assumption is not violated.

11 Overall model parameters: $N = 853$ country*policies (26 countries); Log pseudo-likelihood: –1206.08; MacFadden pseudo-R^2: 0.19; Cox&Snell pseudo-R^2: 0.50.

12 The division of policies is based upon the categorization of policies used in the country studies undertaken by the Council of Europe and the Local Government and Public Reform Initiative.

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Appendix

Calculating agreement

Agreement measures the extent to which experts and countries agree on which governmental tiers should provide a policy. The expert survey evaluated each policy according to five jurisdictions with each having a different average population size. The countries have seven categorical outcomes by which policies can be provided.

Agreement between experts and countries is calculated using the proportions over jurisdictions respectively categorical outcomes. Let X be the proportion of experts or countries. The policies are indexed by $i = 1, \ldots, N$ and the jurisdictions or category outcomes are indexed by $j = 1, \ldots, M$. Let X_{ij} represent the proportion of experts or countries who assigned the i-th policy to the j-th jurisdiction or category outcome. Agreement among experts/countries for a policy is then given by

$$Agreement_i = \sqrt{\sum_{j=1}^{M} \left(X_{ij} - \frac{1}{M} \right)^2}$$

As the experts were allowed to place more than one X per policy, X_{ij} is adjusted such that each expert has an equal weight per policy. If the experts are indexed by $k = 1, \ldots, L$; and X_{kij} represents a dichotomous variable whether expert k put an X in jurisdiction j for policy i and; then X_{ij} is adjusted as follows:

$$Adjusted\ X_{ij} = \frac{\sum_{k=1}^{L} X_{kij}^*}{L} \text{ with } X_{kij}^* = \frac{X_{kij}}{\sum_{j=1}^{M} X_{kij}}$$

For the expert survey, agreement scores may vary between 0 (complete disagreement) and 0.894 (complete agreement) and for the country data set between 0 (complete disagreement) and 0.926 (complete agreement). The maximum score on agreement is dependent upon the number of categories.