

MORAL FEDERALISM

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Abstract

Many political issues like abortion, gay marriage or assisted suicide are strongly contested because individuals have preferences not only over their own choice but also about other individuals' actions. How should society decide these issues? This paper compares three regimes (centralization, decentralization and federalism) in an economy where individuals choose their residence and vote over a single-dimensional regulatory policy at the regional and national level. The main results are: (i) A move from decentralization to federalism, called moral federalism, is welfare improving behind the veil of ignorance if and only if centralization dominates decentralization, and (ii) for the group that favors a restrictive policy moral federalism is the more attractive the smaller its group size (subject to being the majority group), the larger the suffering from a given policy, and the smaller the regions' weight in determining the federal policy limit. The results are consistent with the Bush administration's attempt to restrict liberal policy choices at the state level after its narrow election victory in 2000.

Keywords: federalism, decentralization, Tiebout equilibrium, consumption externality, morals.

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1 Introduction

Many political issues are strongly contested because they affect and deal with individual values. For example, the question whether gay marriage should be legal or not pitches individuals who believe in the sanctity of traditional marriage against those who believe in the freedom of individual decision and the equality of heterosexual and homosexual marriage. What makes this debate so controversial is that individuals not only have a strong preference over their own choice, but also over other individuals' actions. Opponents of same-sex marriage suffer when gays are allowed to marry, and vice versa, homosexuals often feel a sense of loss when they and other gays are prohibited to marry. Yet, on reflection, there are many political issues that involve moral questions similar to same-sex marriage: Assisted suicide, gun control, abortion, stem cell research, medical marijuana, and the death penalty, to name just a few. The clash over these issues is particularly strong when countries or regions with different religious or political cultures collide, something that is not only evident in the US.¹ In the EU, for example, countries differ in terms of their attitudes and laws toward gay marriage and assisted suicide, where typically northern European countries have more liberal laws than those in southern Europe.

How should society decide these controversial issues? To some the question might be provocative, precisely because fundamental individual values are at stake. It is probably true that moral issues such as abortion can never be solved to both sides' satisfaction. This does not mean, however, that economists cannot shed light on the question. One possible answer, in the spirit of the seminal paper by Charles Tiebout (1956), is to let people choose their residence based on different policies offered in various jurisdictions.² In the context of gay marriage supporters would join to live in one jurisdiction in which homosexual marriage is legalized, while opponents live together in a region where a restrictive policy is implemented. Such an arrangement would not satisfy those who believe in traditional marriage, but this *per se* does not make the Tiebout equilibrium a bad one because at least one group is always

¹A recent poll in the U.S. found that 49% in the West but only 32% in the South believe that homosexual relations should be legal. See Denver Post, "Ban on same-sex marriage supported," December 21, 2003, p. A1 and A25.

²Tiebout, as most of the subsequent literature, is concerned with fiscal decisions, whereas here a particular class of regulatory issues is examined.

unhappy.³

Starting from the Tiebout equilibrium proponents of a restrictive policy may gain by using the federal government in an attempt to constrain individual jurisdictions in their choice. Thereby they could impose indirectly their individual morals on others. This scenario has played out in the United States under the Bush administration several times. For example, Attorney General John Ashcroft has tried to prosecute users of medical marijuana in California even though a state initiative allowed the practice. Similarly, he has made attempts to overrule an Oregon law permitting assisted suicide. Following the Economist (2003), I call this *moral federalism*.⁴

These observations raise at least three questions. First, what are the determinants of moral federalism, such as the distribution of preferences? As explained in more detail below, I argue that moral federalism is most likely to arise if those who advocate restriction of choice have a majority in society, but just barely so. The second question relates to the effect of different institutional regimes. How do centralized and decentralized regimes compare in 'resolving' such moral conflicts? And finally, is moral federalism good or bad in some normative sense? The answer to the last question is not obvious because there are always some people who suffer, either as a result of restriction of choice, or through other people's permissive actions.

By answering these questions the paper provides a positive and normative analysis of moral federalism. To this end, I compare three different institutional regimes. First I consider a *centralized regime* which is modeled as simple majority voting by the entire population over a single-dimensional regulatory issue (like assisted suicide or gay marriage). The policy decision affects the freedom of choice of some individuals and impacts others who suffer from a permissive policy. Then a *decentralized regime* is analyzed: In each region policy is chosen by majority voting subject to free mobility of individuals. Finally, a *federal system*

³Sen (1976) proves that there exists no social decision function that satisfies the following axioms: unrestricted domain for preferences, Pareto principle, and minimal federalism (which, loosely speaking, gives each subset of individuals the right to make the decision on one issue). This result is an extension of the well known Impossibility of a Paretian Liberal result. Sen's result casts doubt on "solving" controversial moral issues through decentralization. However, it leaves open how different institutional regimes perform and thereby shape the incentives of groups with different interests to prefer one regime over another.

⁴Hendrickson (2002) provides a nice discussion of cases in which the U.S. federal government has tried to overcome states' decisions. She also uses the term moral federalism, but in a different way. Moral federalism to her is what here is called decentralization in the Tiebout sense.

is examined. In this case, the decentralized regime is augmented by a federal decision that may or may not restrict regional choices. These three regimes correspond roughly to the conceptualization in Buchanan (1996).

It is important to note that my paper does not say whether *political conservatives* or *political liberals* are right. One interesting insight from the paper is that what matters from a conceptual point of view is how many are in favor of restriction of choice (called conservatives), and how many are in favor of individual choice (called liberals and libertarians), as well as how strong preferences are. In the case of abortion and gay marriage political conservatives are those who favor restriction of choice, while in the context of gun control and the death penalty the political left advocates a restrictive regime. In other words, moral federalism is not an exclusive feature of a politically conservative majority but one that could equally occur under a left-leaning federal government.

The paper makes a number of novel contributions. At the conceptual level, the paper offers a framework for analyzing moral questions by modeling the interdependence of individual decisions as consumption externalities. An important feature is that the externalities are not symmetric. An opponent of gay marriage or assisted suicide suffers when a homosexual couple gets married or a terminally ill person is put to death. Yet the reverse is not true: Homosexuals typically do not object to heterosexual marriages. In addition, and to the best of my knowledge, the paper introduces a novel definition of an equilibrium under a federal system. Loosely speaking, a federal equilibrium is a policy that constrains how permissive regional policy choices can be, where the federal policy is the result of a weighted average of what the general electorate and the regions want *in the absence of a federal limit*. The weights can be interpreted as the bargaining strength of different legislative bodies at the federal level (like the House of Representatives and the Senate in the U.S., or the Bundestag and the Bundesrat in Germany).⁵ If in equilibrium the federal limit is tighter than what the most permissive region desires to implement, as it happens under certain conditions, federalism has bite. Thus as an important by-product of the analysis a multi-tier government structure emerges endogenously.

The paper's main results are derived in a situation with only three groups in society, called

⁵For a discussion of different notions of federalism see Inman and Rubinfeld (1997).

conservatives, liberals and libertarians. I assume that individual utility is proportional to individual losses (due to either restriction of choice or the negative externality arising from actions of others). Conservatives choose the least permissive action and prefer that society adopts the most restrictive policy. Liberals, by contrast, want society to allow complete freedom of choice because that allows them to take permissive actions. Libertarians are assumed to share the policy preference with liberals, but personally would not take such actions, that is, they choose the same action as conservatives. When liberals and libertarians outnumber conservatives centralization and decentralization give the same outcome in terms of individual utilities. This result is straightforward because liberals always get their own preferred choice, because either they have the political majority in central elections or because they live together with libertarians in their own jurisdiction under decentralization and are able to implement a permissive policy there. As a consequence, liberals and libertarians (the majority group in terms of policy preference) do not want the federal government to intervene. Federal intervention would restrict regional choices as the conservative jurisdiction has a say in defining the federal limit.

By contrast, the equivalence between centralization and decentralization breaks down when conservatives are the majority group in society. Under decentralization conservatives suffer from liberals' actions. This makes it attractive for conservatives to let the federal government intervene even if the federal limit is partly determined by the liberals' and libertarians' desire to implement a permissive policy. In fact, the conservatives' benefit from moving from the decentralized to a federal equilibrium is larger, the *smaller* the group of conservatives is (subject to being the majority group and holding the number of libertarians constant). In other words, when society is almost evenly split in its policy preference, the conservatives' gain of introducing their morals on others is maximized because *each* conservative suffers from *each* liberal's action and hence the product is maximized when conservatives have (almost) the same strength as liberals and libertarians. This result is consistent with Bush's narrow election victory in 2000 and the push by the federal government to limit states' choices on certain moral issues, as mentioned above.

Furthermore, whether moral federalism (the move from decentralization to federalism) is desirable in a normative sense can be related to the ranking of centralization and decentralization. To do such ranking, I employ the concept of a veil of ignorance (see Harsanyi, 1955),

where individuals decide on the institutional regime without knowing which preferences they will have. Behind the veil, moral federalism is desirable if and only if centralization dominates decentralization. The logic is quite intuitive: Moral federalism moves the outcome in terms of individual utilities closer to the outcome under centralization. This is beneficial only when centralization is better than decentralization. The irony of the result is that those who in general favor decentralized decision-making in the spirit of Tiebout, namely the political conservatives, benefit only when such system is inefficient to begin with. Stated differently, when the Tiebout equilibrium is desirable behind the veil of ignorance, moral federalism, while beneficial from the viewpoint of the group that can heavily impose its values through the federal government, is not optimal from a normative standpoint.

These results hold when society is split into three groups with extreme preferences. In an extension of the model I consider a group with intermediate preferences (the moderates) while keeping the number of jurisdictions at two (assuming for simplicity that there are no libertarians). Thus under decentralization there must be some mixing of types with different policy preferences, typically the conservatives in one jurisdiction and the remaining two groups in the other jurisdiction. The general thrust of the original results continues to hold, although with one interesting twist. When moderates outnumber liberals, centralization and decentralization give the same outcome because moderates dominate decision making both when all vote and when only moderates and liberals vote in their jurisdiction. The last two groups do not gain if the federal government steps in, as it would lead to a further tightening of policy choice. The result is similar to the original one with liberals and libertarians outnumbering conservatives. In the opposite case, when there are more liberals than moderates, conservatives and moderates gain if the federal government steps in in an attempt to constrain the liberals' choice. Similar to the original result, the move to federalism is beneficial behind the veil of ignorance if centralization dominates decentralization *and* the federal policy limit is not stricter than what moderates ideal policy is. The latter requirement demonstrates that the normative properties of moral federalism are not trivially linked to the ranking of centralization and decentralization.

There are very few papers that relate to this work directly. Rose-Ackerman (1981) is perhaps closest by showing that a hierarchial federal system, under which higher-level governments can preempt local governments, is not the same as a unitary government. In

particular, she argues that some voters may welcome central government intervention in the presence of local governments, that they otherwise would not. Beginning with Oates (1972) there exists a large literature dealing with the question as to which level government should provide public goods. Unlike the present paper, this literature typically considers symmetric policy spillovers across regions, which affect individuals in a similar way, that is, if a public good spills over from region i to j , so does it from j to i , and all individuals within a region are affected similarly because they all value public goods. The present framework is also indirectly related to a fairly special model of environmental pollution in a multijurisdictional world, a connection that is further discussed in the concluding section.

The paper is organized as follow. Section 2 introduces the model and solves for the equilibrium. Normative properties are derived in section 3. Two extensions, including the consideration of a group with moderate preferences, are analyzed in section 4. The last section concludes.

2 The Model

A country is populated by n individuals and is divided into two regions $i = A, B$. Individuals can freely choose where to reside. Society must select a *policy* $\lambda \in [0, 1]$, which allows individual *action* σ less than or equal to λ . Examples for this type of policy choice is the regulation of assisted suicide, where λ represents the legality and ease of ending the life of a terminally ill person. The most restrictive policy is $\lambda = 0$ and allows only action 0 (e.g., assisted suicide prohibited), whereas the most liberal policy is $\lambda = 1$ and allows any action from 0 to 1 (e.g., no restriction on assisted suicide). People differ in their preference over the policy choice variable and their own preferred action. To simplify matters I consider three groups, called conservatives, liberals and libertarians. I consider the case of "moderates" in section 4. A conservative always chooses action 0 and prefers that society should adopt the restrictive policy $\lambda = 0$ (or policy 0 for short). A liberal (in the American use of the word) chooses, when permitted, action 1 and therefore likes society to adopt policy 1. A libertarian always chooses action 0, but believes that society should allow freedom of choice, and therefore prefers $\lambda = 1$. There are n_C conservatives, n_L liberals, and n_T libertarians, so that $n_C + n_L + n_T = n$. For simplicity I assume $n_L + n_T \neq n_C$, an assumption that will

become clearer later.

Each individual suffers from a different type of loss as a result of the policy choice. More specifically, I assume that an individual suffers from other individuals' actions or from restriction of their own and other individuals' actions. To simplify the analysis, I use a reduced form approach, where the loss is additive separable from the utility derived from all other individual choices. Furthermore, individual utility declines by the amount of a person's loss, which in turn is proportional to the distance between a person's own ideal action and her own or other individuals' actions. Thus a liberal always chooses the maximum action allowed ($\sigma = \lambda^i$), when residing in region i . When a liberal is forced to choose action σ , she suffers $\alpha(1 - \sigma)$ where $\alpha > 0$ is a parameter. In addition a liberal suffers whenever another liberal is restricted in her choice in the amount of β per unit of choice restriction, where $\alpha \geq \beta > 0$. Because policies may differ across regions, a liberal living in region i has a utility loss resulting from her own restriction of choice and her fellow liberals' restriction both in her and in the other region:

$$S_L^i = [\alpha + \beta(n_L^i - 1)](1 - \lambda^i) + n_L^j \beta(1 - \lambda^j), \quad (1)$$

for $i, j = A, B, i \neq j$, where n_L^i (n_L^j) is the number of liberals living in region $i(j)$, and λ^i (λ^j) is the policy adopted in region $i(j)$. Liberals do not care about the choices of conservatives and libertarians because they can never be constrained in their choice.⁶

A conservative experiences a utility loss of $\gamma\sigma$ for *each* person who selects action σ regardless of where the conservative and the liberal live.⁷ *Each* conservative's utility loss is

$$S_C = \gamma(n_L^A \lambda^A + n_L^B \lambda^B), \quad (2)$$

because all liberals choose the highest possible action and libertarians choose action 0. Moreover I assume the following tie-breaking rules: *Ceteris paribus* a conservative prefers living in the region with the lowest policy in place, and when conservatives live by themselves, they adopt policy 0. The assumptions simplify exposition, besides being intuitive.

⁶A "true" liberal may think that conservatives should choose action 1 rather than 0. This aspect is ignored however.

⁷In section 4 I examine the case where the utility loss depends on the choice of location of conservatives and liberals, without affecting results.

Libertarians suffer only when liberals are restricted in their choice, regardless of where they and liberals live, in the amount of $\delta(1 - \lambda^i)$ per person restricted in choice. Thus a libertarian's loss is

$$S_T = \delta[n_L^A(1 - \lambda^A) + n_L^B(1 - \lambda^B)]. \quad (3)$$

Note that losses of liberals and libertarians are falling in λ^A and λ^B (for given residential locations), and increasing for conservatives.

Society must make a decision as to which policy to adopt. I examine three different institutional regimes. First I consider simple majority voting by the entire population over the uniform policy $\lambda^A = \lambda^B = \lambda$. This is interpreted as a *centralized regime*. Then a *decentralized regime* is analyzed, which is characterized by majority voting in each of the two regions A and B, allowing λ^A and λ^B to differ. Finally, a *federal system* is examined. In this case, the decentralized regime is augmented by a federal policy limit λ^F that may or may not restrict regional choices. Precise equilibrium definitions are provided as the paper proceeds. *Moral federalism* is defined as the move from decentralization to a federal system.

2.1 Centralization

Consider first centralization. To fix ideas, the following equilibrium notion is used.

A centralized equilibrium is a residential location for each individual and a policy choice $\lambda^A = \lambda^B = \lambda$ such that

- (i) *λ is preferred by a majority of the population given residential choices, and*
- (ii) *no individual can gain from moving to another jurisdiction given λ .*

The equilibrium is easy to characterize. Residential choices do not matter because a common policy is adopted for the entire country and the conservatives' utility losses are independent of where people live. When the conservatives are in majority ($n_C > n_L + n_T$) policy 0 is selected and everybody must choose action 0. Each liberal's utility loss is $[\alpha + (n_L - 1)\beta]$, and each libertarian loses $n_L\delta$. By contrast, when liberals and libertarians outnumber conservatives ($n_L + n_T > n_C$), society adopts policy 1. In this case liberals are

not restricted ($\sigma = 1$), and libertarians don't suffer at all, but each conservative suffers a loss of $n_L\gamma$.

2.2 Decentralization

Consider next the decentralized regime. In this situation residential choices matter.

A decentralized equilibrium is a residential location for each individual and a policy tuple (λ^A, λ^B) such that

- (i) *no individual can gain from moving to the other region given (λ^A, λ^B) , and*
- (ii) *in each region the policy choice $\lambda^j, j = A, B$, is a majority voting equilibrium given residential choices.*⁸

To complete the description of the game, I assume that if in a region the number of conservatives on the one hand and liberals and libertarians on the other hand is the same, each ideal policy is adopted with probability one half.

There are two types of decentralized equilibria. The first one has the property of different policies in the two regions, and is called a *heterogeneous policy equilibrium*. Such an equilibrium always exists: Conservatives live by themselves in one region and adopt policy 0, while liberals and libertarians live together in the other region and unanimously adopt policy 1. A liberal has no incentive to move to the conservatives' region because her choice would be restricted, and libertarians are indifferent with respect to location. By assumption each conservative prefers joining his conservative fellows. Following the equilibrium characterization in Epple and Romer (1991), such an equilibrium under decentralization could also be called a *stratified equilibrium*, because individuals sort by preferred policy (but not by preferred action).

In addition there might exist a *homogeneous policy equilibrium* under decentralization, in which the same policy is adopted in both regions. This involves mixing of people with

⁸This equilibrium notion assumes myopic behavior because individuals do not take into account how their choice of residence may affect political outcomes. This assumption could be relaxed without much affecting the following results, but complicating exposition.

different ideal policies, and therefore one could call this also a *nonstratified equilibrium*.⁹

Proposition 1. Under decentralization a heterogeneous policy equilibrium always exists. A homogeneous policy equilibrium exists if and only if $|n_C - (n_L + n_T)| > 1$.

Proof: The existence of the heterogeneous policy (stratified) equilibrium was already shown. For the homogeneous policy (nonstratified) equilibrium, consider first the case in which the absolute difference in group strength is larger than 1. Then individuals can be allocated to the two regions such that the group that has the majority in the entire population (either conservatives or liberals and libertarians jointly) has also a majority in each region. The two regions adopt the same policy and residential locations are optimal given policy choices.

Now consider the necessary part of the result. When $|n_C - (n_L + n_T)| = 1$, regions cannot adopt the same policy. To see this, suppose that jointly liberals and libertarians have the majority in society. Then they must have the majority in one region. In the other region they are either in minority or have the same number as conservatives. When liberals and libertarians are the minority group in the second region, policy choices in regions A and B obviously differ. When liberals and libertarians have the same group strength as conservatives in the second region, policy 0 and policy 1 are selected with probability one half each. In that situation, however, all liberals have an incentive to join their fellows in the first region. The remaining conservatives then choose policy 0, confirming the statement that a nonstratified equilibrium with different regional policies is not possible. The same logic applies when conservatives are the majority group, that is, $n_C = n_L + n_T + 1$.¹⁰ ■

Note that there can exist a large number of nonstratified equilibria when $|n_C - (n_L + n_T)| \gg 1$, differing only by residential choices. The implemented policies in both regions are identical and follow the preferences of society's majority group (in terms of ideal policy). In the following I focus on individuals utilities, and hence speak simply of the nonstratified or

⁹Earlier I made the assumption that *ceteris paribus* conservatives prefer living in the region with the more restrictive policy in place. Therefore a homogenous policy equilibrium cannot be simply the heterogeneous policy equilibrium with some conservatives moving together with the liberals and libertarians (such that policy choices are unaffected). Without the assumption this would be an equilibrium since the conservatives' suffering is independent of their own and the liberals' residential choices.

¹⁰In this case the assumption that conservatives prefer living in the region with the lowest λ in place matters.

heterogeneous policy equilibrium. It is now useful to compare the nonstratified equilibrium under decentralization, if it exists, with the centralized equilibrium. This gives the next result.

Proposition 2. Assume $|n_C - (n_L + n_T)| > 1$. Individual utilities are identical under centralization and under the homogeneous policy (nonstratified) equilibrium under decentralization.

The proof is straightforward after recognizing that a nonstratified equilibrium requires that both regions adopt the same policy, which must be the preferred policy of the population's majority group (either conservatives or liberals and libertarians jointly). This is of course the same as if the population's majority group had adopted the same policy under centralization. The residential choices do not have to be the same under the two situations, but this is immaterial as far as individual utilities are concerned. From Propositions 1 and 2 follows that the set of equilibria under decentralization strictly contains the centralized equilibrium, when a nonstratified equilibrium under decentralization exists. The next result focuses on comparing the stratified and the nonstratified equilibrium, which allows me to compare the centralized and the decentralized outcome.

Proposition 3. Comparison of the heterogeneous and homogeneous policy equilibria under decentralization:

- a) When $n_C + 1 < n_L + n_T$, policy 1 is adopted everywhere in both types of equilibria. Each conservative suffers a utility loss of $n_L\gamma$.
- b) When $n_L + n_T + 1 < n_C$, the two equilibria differ in terms of policy choices and individual utility losses. In the heterogeneous policy equilibrium each conservative suffers $n_L\gamma$, whereas in the homogeneous policy equilibrium each liberal experiences a utility loss of $[\alpha + (n_L - 1)\beta]$, and each libertarian loses $n_L\delta$.

Proof: a) The conservatives always suffer, either because under separation of types liberals get to choose action 1, or because under nonstratification the liberals and libertarians are in majority everywhere to impose policy 1. b) The nonstratified equilibrium leads to the

adoption of policy 0 in both regions because the conservatives are in majority. This is different under stratification, where liberals choose action 1. ■

Proposition 3 makes a comparison of centralization and decentralization possible. Recall that equilibria under centralized decision-making are a subset of the equilibria under decentralization in terms of individual utilities. When the liberals and libertarians are in majority there is no relevant difference between the two regimes, but this does not hold in the reverse case.

2.3 Federalism

Finally consider a federal system. Regions make their policy choice as under decentralization. In addition, however, the federal government can impose a policy limit λ^F . Regions must adopt a policy that is no more liberal than the federal limit, that is $\lambda^A, \lambda^B \leq \lambda^F$. I assume that the federal policy is a combination of the preferences of the entire population and the unrestricted regional choices. More precisely:

A federal equilibrium is a residential location for each individual, a regional policy choice tuple (λ^A, λ^B) , a federal policy limit λ^F , desired regional policies $(\tilde{\lambda}^A, \tilde{\lambda}^B)$, and the population's desired policy $\tilde{\lambda}$ such that

- (i) *no individual can gain from moving given regional policy choices (λ^A, λ^B) ,*
- (ii) *each region's policy choice $\lambda^j, j = A, B$, is a majority voting equilibrium subject to the constraint $\lambda^j \leq \lambda^F$, and given residential choices,*
- (iii) *each region's desired policy $\tilde{\lambda}^j, j = A, B$, is a majority voting equilibrium in its region in the absence of a federal policy limit and given residential choices,*
- (iv) *the population's desired policy $\tilde{\lambda}$ is a majority voting equilibrium, and*
- (v) *the federal policy limit is a convex combination of desired regional policies $(\tilde{\lambda}^A, \tilde{\lambda}^B)$ and the popular vote $\tilde{\lambda}$ such that $\lambda^F = \theta_1 \tilde{\lambda} + \theta_2 (\tilde{\lambda}^A + \tilde{\lambda}^B)/2$, where $\theta_1 + \theta_2 = 1$ and $\theta_1, \theta_2 > 0$.*

Some explanations are in order. The key innovation here is the modeling of the federal policy limit. As in many federations like the U.S., Germany or the EU, the federal policy is a combination of what the population at large wants and what regions or regional governments desire. This is captured in part (v) by assigning weights to the popular vote and each region's desired policy. Obviously this is a reduced form for a more complicated setting in which the federal policy is the result of bargaining between different legislative bodies (as the Senate and the House in the U.S. for example). The reduced form is sufficient for the present purpose. Another novelty is the desired regional policy $\tilde{\lambda}^j$. It expresses a region's preference if it were not constrained in its choice. In equilibrium the desired policy may or may not coincide with the actual policy. If it does, the federal policy limit is binding, and a multi-tier government structure emerges endogenously. The following result is now straightforward.

Proposition 4. An equilibrium under a federal system exists.

- a) A homogeneous policy (nonstratified) equilibrium exists if $|n_C - (n_L + n_T)| > 1$, which is characterized by

$$\lambda^A = \lambda^B = \tilde{\lambda}^A = \tilde{\lambda}^B = \lambda^F = \begin{cases} 0 & \text{if } n_C > n_L + n_T + 1 \\ 1 & \text{if } n_C + 1 < n_L + n_T. \end{cases} \quad (4)$$

- b) A heterogeneous policy (stratified) equilibrium always exists, where individuals separate by type, and

$$\begin{aligned} \lambda^i &= \tilde{\lambda}^i = 0 \\ \tilde{\lambda}^j &= 1 \\ \lambda^j &= \lambda^F = \begin{cases} \theta_1 + \theta_2/2 \in (0, 1) & \text{if } n_C < n_L + n_T \\ \theta_2/2 \in (0, 1) & \text{if } n_C > n_L + n_T. \end{cases} \end{aligned} \quad (5)$$

for $i, j = A, B, i \neq j$.

Proof: a) Allocate individuals as in the nonstratified equilibrium under decentralization. Because both regions and the population as a whole have the same majority group, actual and desired regional policies and the federal limit coincide. The rest is straightforward. b) Assume $n_C < n_L + n_T$. Individuals can be separated by ideal policy type and then no individual has an incentive to move given that policies differ. Conservatives choose and

desire policy 0, while liberals and libertarians desire policy 1. For the federal limit, note that the popular vote gives $\tilde{\lambda} = 1$, so that $\lambda^F = \theta_1 \cdot 1 + \frac{\theta_2}{2}(0 + 1) = \theta_1 + \frac{\theta_2}{2}$. In their region liberals and libertarians choose a policy equal to this limit since their loss is increasing the lower the policy. When $n_C > n_L + n_T$, a similar logic applies, but now $\tilde{\lambda} = 0$. ■

In case a) all desired and actual policies coincide, and follow the preferences of society's majority group. This must be a nonstratified equilibrium. By contrast, case b) demonstrates the existence of a stratified equilibrium that always exists. Here federalism has bite by restricting one region's policy and leading to an interior policy choice. The extent of the restriction is larger when conservatives are in majority than when liberals and libertarians are, where the difference comes from the change in the desired national policy.

The final result in this section clarifies the conservatives' incentive to move to a federalist regime starting from a Tiebout equilibrium.

Proposition 5. When conservatives are the majority group, each conservative gains when moving from the heterogeneous policy (stratified) equilibrium under decentralization to the heterogeneous policy equilibrium under federalism. The gain is larger, the bigger the suffering from liberal actions (γ), the smaller the jurisdictions' weight in the federal decision (θ_2), and the smaller the conservative group's strength (n_C) holding n_T constant.

The proof is straightforward after recognizing that the gain to a conservative equals $n_L\gamma(1 - \lambda^F)$, which is falling in n_C (for given n_T), increasing in γ , and falling in the federal policy limit, which depends positively on the regions' weight. The result concerning group strength is conditioned on holding the size of one group constant because changing the number of conservatives could come at the expense of either of the two other groups. Obviously, the last statement in Prop. 5 holds if there are no libertarians. Prop. 5 is consistent with the Bush administration's attempts to overrule state initiatives in Oregon and California, as discussed in the introduction.

3 How Much Decentralization Is Desirable?

I now turn to the normative analysis. It is clear that no matter what policy is adopted one group suffers. Individual utilities are monotonic in λ , holding locations fixed, but in opposite directions for different groups. Hence any policy change is a move along the Pareto frontier. Nevertheless, it is possible to say something more by adopting the concept of a veil of ignorance (see Harsanyi, 1955). Society chooses the regime (centralization, decentralization, federalism) by majority rule, at a time when each individual does not know her ideal policy and action. What is known, however, is the distribution of types and thus the probability of being a conservative n_C/n , a liberal n_L/n , or a libertarian n_T/n .¹¹ Behind the veil of ignorance every individual is identical and thus there is no conflict of interest in choosing the regime. Once the regime is selected and individual types are known, however, society decides on policy λ as described in the previous section. Rational individuals correctly anticipate the outcome under each regime when making their choice behind the veil of ignorance. I assume that behind the veil individuals minimize the expected utility loss.

The expected utility loss behind the veil is easiest to calculate under each regime separately. Under centralization the expected loss for given policy λ is

$$\begin{aligned}
 S^e &= \frac{n_C}{n}n_L\gamma\lambda + \frac{n_L}{n}[\alpha + \beta(n_L - 1)](1 - \lambda) + \frac{n_T}{n}n_L\delta(1 - \lambda) \\
 &= \frac{n_L\{n_C\gamma\lambda + (\alpha + \beta(n_L - 1) + n_T\delta)(1 - \lambda)\}}{n} \\
 &= \begin{cases} \frac{n_L n_C \gamma}{n} & \text{if } n_L + n_T > n_C \\ \frac{n_L(\alpha + \beta(n_L - 1) + n_T\delta)}{n} & \text{if } n_L + n_T < n_C, \end{cases}
 \end{aligned} \tag{6}$$

where the first line represents the weighted sum of the loss of being a conservative, liberal and libertarian respectively. The expression simplifies depending on whether conservatives are in majority, and thus $\lambda = 0$, or conservatives are the minority ($\lambda = 1$). Note that the expected utility loss in (6) is either decreasing or increasing in λ , depending on parameters.

The loss function (6) can be used to describe the expected utility loss under decentralization. Recall that the homogeneous policy equilibrium under decentralization is identical to

¹¹This assumption could be further relaxed by assuming that the distribution is not known.

the centralized outcome in terms of individual utilities (Prop. 2). The heterogeneous policy outcome under decentralization involves only the loss of conservatives, which is found by inserting $\lambda = 1$ into (6) and thus is equal to $n_L n_C \gamma / n$.

Proposition 6. Consider the centralized and decentralized regimes. a) If $n_L + n_T < n_C$, the expected utility loss behind the veil of ignorance is maximal when society is (almost) evenly split in its policy preference. b) Assume $n_L + n_T > n_C$. Holding the number of liberals constant, the expected utility loss behind the veil of ignorance is maximal when the number of conservatives approaches $n/2$. Holding the number of libertarians constant, the expected loss is maximized when $n_C = (n - n_T)/2$.

Proof: a) Under centralization - and thus in the nonstratified equilibrium under decentralization - the expected loss is given by the last line in (6). The loss is falling in n_C regardless of whether the number of liberals or libertarians is held constant, that is

$$\frac{\partial [n_L(\alpha + \beta(n_L - 1) + n_T\delta)/n]}{\partial n_C} < 0$$

for either n_T or n_L constant. b) The loss under centralization as well as under all equilibria under decentralization is $\frac{n_L n_C \gamma}{n}$, which is increasing in n_C for constant n_L . When n_T is constant, the loss $(n - n_T - n_C)n_C\gamma/n$ is rising with n_C if $n_C < (n - n_T)/2$. ■

Note that Proposition 6 applies also to the homogeneous policy equilibrium under federalism because the chosen policy in all regions is either 0 or 1 (Prop. 4a). The result, however, does not carry over to the heterogeneous policy equilibrium under federalism. To see this, insert λ^F in (6), where $\lambda^F = \theta_1 + \theta_2/2$ if $n_C + n_T > n_C$ and $\lambda^F = \theta_2/2$ if $n_C + n_T < n_C$. Differentiating the expression with respect to the number of conservatives shows that the loss is either rising or falling depending on parameters, in particular the value of λ^F .

Assume now that conservatives are the majority group in society. In that case the expected loss under centralization differs from the loss under decentralization, assuming that the latter is characterized by stratification (e.g., the heterogeneous policy equilibrium). The expected losses are $n_C n_L \gamma / n$ and $n_L(\alpha + \beta(n_L - 1) + n_T\delta)/n$, respectively. Behind the veil of ignorance the stratified equilibrium dominates the nonstratified equilibrium if and only if

$$n_C < \frac{\alpha + \beta(n_L - 1) + n_T\delta}{\gamma}, \quad (7)$$

a condition that plays an important role further down. Condition (7) can be used to derive more results when conservatives are the majority group. Since $n_C < n$, stratification must always welfare dominate nonstratification when $n < (\alpha + (n_L - 1)\beta + n_T\delta)/\gamma$. Intuitively, this is a situation where liberals and/or libertarians suffer a lot when the liberals' choice is restricted relative to the utility loss conservatives experience when the choice of liberals is not constrained. On the other hand, when $n/2 > (\alpha + (n_L - 1)\beta + n_T\delta)/\gamma$, the reverse is true: nonstratification always dominates separation by type because now the conservatives' utility loss is relatively large. Therefore it is for intermediate values of the liberals' and libertarians' losses, namely $n/2 < (\alpha + (n_L - 1)\beta + n_T\delta)/\gamma < n$, for which the dominance switches as the number of conservatives changes. Note again that these implications hold only when conservatives are the majority group.

The final result addresses the normative properties of the regime switch, evaluated behind the veil of ignorance. Recall that Proposition 5 showed that conservatives gain when moving from decentralization to federalism. I assume, to make things realistic, that decentralization is characterized by stratification.

Proposition 7. Behind the veil of ignorance, starting from a stratified equilibrium under decentralization a move toward a federal system (i.e., moral federalism) improves expected utility if and only if decentralization is inferior to centralization.

Proof: The expected loss under decentralization is $n_C n_L \gamma / n$, while under federalism it is $n_L [n_C \gamma \lambda^F + (\alpha + (n_L - 1)\beta + n_T \delta)(1 - \lambda^F)] / n$. A move from the former to the latter is beneficial if the expected loss under decentralization is larger than the one under federalism, that is, $n_C \gamma > n_C \gamma \lambda^F + (\alpha + (n_L - 1)\beta + n_T \delta)(1 - \lambda^F)$ or

$$n_C \gamma > \alpha + (n_L - 1)\beta + n_T \delta. \quad (8)$$

This is exactly the opposite of condition (7). ■

The logic for this result is quite intuitive. Federalism is a mixture of centralization and decentralization. A move from decentralization to federalism is therefore bringing society closer to what would have been chosen under centralization. Obviously, the transition is beneficial only when centralization is superior to decentralization in expected utility terms.

The result is not trivially true, as an extension involving a group called moderates will show (see section 4.2). Proposition 7 has an important corollary. When liberals outnumber conservatives centralization and decentralization give the same outcome in terms of individual utilities (see Prop. 3). Together with Prop. 7 this implies that it is never in the liberals' interest to let the federal government intervene.

4 Extensions

In this section I consider two extensions of the base model. The main conclusions of the paper are unaffected by both extensions.

4.1 Seeing vs. Knowing the Sin

In the basic version of the model I assumed that a conservative suffers a utility loss of $\gamma\sigma$ whenever and wherever a liberal is allowed to take action σ . How would results change if instead one assumed that this utility loss is larger when it takes place inside the region where the conservative lives (γ^i) than when it occurs outside that region (γ^o)? In other words, I now assume that from a conservative's viewpoint it is more harmful to see the sin than just knowing that the sin happens. The main results are unaffected. To see this, reconsider first centralization. Nothing changes when conservatives dominate because policy 0 is adopted and liberals do not impose any externality on conservatives. However, when liberals and libertarians outnumber conservatives even under centralization there is now an incentive to separate by type, as conservatives are better off by staying away from liberals. Such separation is also found under decentralization. Hence the relevant parameter becomes γ^o under both regimes, replacing γ from the original model.¹²

4.2 Intermediate Preferences: Moderates

A special feature of the base model is that all individuals have extreme preferences for action and policies. Assume therefore that there exists a group in society, called the *moderates*,

¹²Under decentralization there can exist nonstratified equilibria, although now this requires that the number of conservatives is not too large. If such equilibria exist, they also exist under centralization.

whose preferred action and policy preference is $\lambda_M \in (0, 1)$. To simplify exposition I assume no libertarians ($n_T = 0$). Keeping the assumption of two regions, stratification by preferred policy under decentralization is impossible. Consider the case in which none of the three groups has a majority, that is $n_i < 0.5$, for $i = C, L, M$, where $n_M = n - n_C - n_L$ is the number of moderates. Under *centralization*, it is easy to see that the most preferred policy of a moderate is adopted. Conservatives and moderates vote in favor of λ_M against any other policy $\lambda > \lambda_M$, while moderates and liberals vote for λ_M against any lower λ . Hence liberals are choice constrained and conservatives suffer from moderates' and liberals' actions. Behind the veil of ignorance the expected loss is the sum of the conservatives' and liberals' losses:

$$n_C(n_L + n_M)\gamma\lambda_M + n_L[\alpha + (n_L - 1)\beta](1 - \lambda_M). \quad (9)$$

This outcome can be replicated under *decentralization* in the same way as in the base model, by distributing individuals across regions such that neither conservatives nor liberals have a majority in either region. More interesting is the possibility of a sorting equilibrium. With two regions, however, only a *semi-stratified equilibrium* is possible, in which one group inhabits one region, while the other two groups occupy the remaining region. Assume as above that *ceteris paribus* conservatives prefer living in the region that has the least liberal policy in place.

Proposition 8. In a semi-stratified equilibrium conservatives and liberals do not live together.

Proof: Liberals and conservatives do not live together when $n_C > n_L$, because liberals would be better off by moving to the region of the moderates. Similarly, when $n_C < n_L$ conservatives move to the other region, because by assumption they prefer to live in a region with the least liberal policy. ■

This leaves two possible configurations. It is easy to see that the moderates staying together with the liberals is always an equilibrium. Regardless of who has the majority in that region, individuals from neither group have an incentive to move to the region in which conservatives rule. Note that the second configuration, namely moderates residing with conservatives, which is an equilibrium if and only if $n_M > n_C$, is equivalent in analysis

to the situation where moderates stay together with and outnumber liberals. I therefore focus on the case where conservatives inhabit one of the two regions by themselves.

In this semi-stratified equilibrium policy choices are straightforward. The conservatives choose policy 0. In the other region the policy choice is either λ_M (if $n_M > n_L$) or 1 (if $n_M < n_L$). The expected loss behind the veil of ignorance is

$$\begin{aligned} \frac{n_C(n_L + n_M)\gamma\lambda_M + n_L[\alpha + (n_L - 1)\beta](1 - \lambda_M)}{n} & \quad \text{when } n_M > n_L & (10) \\ \frac{n_C(n_M\lambda_M + n_L)\gamma + n_M n_L \gamma(1 - \lambda_M)}{n} & \quad \text{when } n_M < n_L. \end{aligned}$$

Note that the expected loss under centralization (eq. 9) and the loss reported in the first line of (10) are the same. Hence centralization and decentralization are identical when moderates outnumber liberals. When the latter condition is reversed, the semi-stratified equilibrium under decentralization dominates centralization if the second line in (10) is less than (9), or

$$n_C + n_M < \frac{\alpha + (n_L - 1)\beta}{\gamma}. \quad (11)$$

Finally, in a federal system the policy of the region inhabited by moderates and liberals is the minimum of λ^F and λ_M , where

$$\lambda^F = \begin{cases} (\theta_1 + \theta_2/2)\lambda_M & \text{when } n_M > n_L \\ \theta_1\lambda_M + \theta_2/2 & \text{when } n_M < n_L. \end{cases}$$

A clear result emerges when the federal policy limit is higher than the moderates' ideal point, that is $\lambda^F \geq \lambda_M$, which requires $n_M < n_L$ and $\lambda_M \leq 0.5$. In this case the expected loss is

$$\frac{n_C(n_M\lambda_M + n_L\lambda^F)\gamma + n_M n_L (\lambda^F - \lambda_M)\gamma + n_L[\alpha + (n_L - 1)\beta](1 - \lambda^F)}{n}, \quad (12)$$

where the three terms are the losses of being a conservative, a moderate and a liberal respectively. I now compare the loss under federalism (12) with the one under decentralization when liberals outnumber moderates (second line of 10). The former dominates the latter exactly when (8) does not hold. This confirms the logic of Proposition 7.

Proposition 9. Society consists of three groups, conservatives, liberals and moderates, of which none has a majority.

- a) When $n_M > n_L$ centralization and decentralization give the same outcome in terms of individual utilities. Knowing their individual types, moderates and liberals prefer either of the two regimes over federalism.
- b) When $n_M < n_L$, and if $\lambda_M \leq 0.5$, moderates and conservatives prefer federalism over decentralization when knowing their individual type. Behind the veil of ignorance federalism dominates decentralization if and only if centralization dominates decentralization.

Individual group preferences follow immediately. When moderates determine policy in their jurisdiction under decentralization federalism would only constrain their and liberals' choices. The ranking of regimes changes when liberals determine policy in one jurisdiction under decentralization. In this case federalism is a tool for moderates and conservatives to constrain liberals, as long as the federal policy limit is not too tight relative to the moderates' ideal policy. No clear results can be derived when the federal policy limit is tighter than λ_M . Moderates now face a trade-off between the restriction of their own choice and the gain when liberals are forced to choose less permissive actions.

Overall Proposition 9 mirrors insights from section 3. Part a) is the equivalent to the case where liberals (and libertarians) outnumber conservatives. There, decentralization and centralization were identical in terms of utilities and liberals and libertarians did not want a tighter policy imposed through federal intervention. Part b) of Proposition 9 parallels the situation when conservatives outnumber liberals and libertarians in a model with extreme preferences only. The results here differ somewhat, however, as it is derived under an additional assumption on the level of the federal policy limit relative to the moderates' ideal policy.

5 Conclusion

This paper analyzes collective decision making in a situation in which individuals have strong preferences not only about their own actions but also about other individual's choices, which is quite typical for many hotly contested issues like abortion, the death penalty or assisted suicide. Instead of repeating the main results of the paper it is perhaps important to point

out how the present framework differs from other work, notably standard Tiebout analyses and work on environmental externalities. Consider Tiebout models first. An important issue within this class of models is whether the equilibrium is efficient. Public good spillovers or tax competition are reasons for inefficiency. Note, however, that there are interesting differences to the present work. For example, in Tiebout models the external effects arise from the policy itself (instead from allowing but not requiring certain individual actions), and are typically symmetric, that is spillovers go in both directions (whereas in the present framework conservatives are bothered by liberals' actions in another jurisdiction, but the reverse is not true). In addition, it seems feasible (subject to political economy considerations) that a central government could intervene and correct these inefficiencies by setting appropriate taxes and subsidies. By contrast, such government intervention seems difficult here. If abortion is a fundamental right, taxing it will be difficult. Moreover, it is probably impossible to compensate those who favor restriction of choice due to the sheer magnitude of the subjectively perceived losses and the adverse selection problem in identifying losers. For these reasons, the extent to which society should allow decentralized decision-making is probably the best and perhaps only way of dealing with such hotly contested issues.

There exists also a similarity to the work on cross-border pollution or other environmental externalities. The present framework is identical to a model in which pollution is a truly global bad, people with opposite preferences live in different communities, and the externalities arise from individual action rather than from firm activities. These assumptions appear rather special in the context of environmental issues. By contrast, the present framework seems to be a natural one for the type of political issue that fuels controversial debates throughout the world.

References

- Buchanan, James M. "Federalism and Individual Sovereignty," *The Cato Journal* 15 (2-3), 1996, 259-268.
- Epple, Dennis and Thomas Romer "Mobility and Redistribution," *Journal of Political Economy* 99, 1991, 828-858.
- Harsanyi, J.C. "Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparisons of Utility," *Journal of Political Economy* 63, 1955, 309-321.
- Hendrickson, Kimberly A. "The Survival of Moral Federalism," *The Public Interest* 148, Summer 2002, 96-110.
- Inman, Robert P. and Daniel L. Rubinfeld "Rethinking Federalism," *Journal of Economic Perspectives* 11, Fall 1997, 43-64.
- Oates, Wallace E. *Fiscal Federalism*, New York: Hartcourt Brace Jovanovich, 1972.
- Rose-Ackerman, Susan "Does Federalism Matter? Political Choice in a Federal Republic," *Journal of Political Economy* 89, 1981, 152-165.
- Sen, Amartya "Liberty, Unanimity and Rights", *Economica* 43, 1976, 217-245.
- The Economist "Steamroller Ashcroft", May 3, 2003, 36.
- Tiebout, Charles "A Pure Theory of Local Expenditures," *Journal of Political Economy* 64, 1956, 416-424.

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