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# Lawmakers as Norm Entrepreneurs\*

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*In this paper we consider the role of lawmakers as norm entrepreneurs. Drawing from expressive law theories and social response theories, we shed light on the role of law in shaping social values and norms, and on the ability of the law to produce social norms where they did not exist before. Furthermore, we unveil a possible undesirable effect of legal intervention, where a legal innovation can cause social divide and possible conflicts.*

## 1. INTRODUCTION

Law and economics scholars have recently revisited the traditional price-theory conception of law as an incentive mechanism, developing a richer theory of how legal rules can affect human behavior. Traditional theories focus on the role of law as an instrument for creating external incentives, such as taxes, sanctions and rewards. According to price-theory explanations of legal incentives, laws exert an influence upon citizens by changing the relative price of their behavior. When external incentives are at work, the law may modify behavior while leaving individual preferences and “tastes” undisturbed.<sup>1</sup>

Two recent trends in the law and economics literature – expressive law theories and social response theories – have emphasized other important functions played by the law. According to expressive law theories, the law plays an expressive function (Cooter, 1998, 2000). Through expression, the law can trigger

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<sup>1</sup> Cooter defines "taste" as "strength of individual commitment to the norm" (Cooter 1998:589).

the emergence of other incentives through the internalization of the values it embodies. Expressive laws affect behavior, not by threatening sanctions or promising rewards, but by changing individual preferences and tastes and, in some cases, by affecting social norms and values. Internalized rules may trigger private enforcement mechanisms and change observed patterns of behavior even in the absence of other external incentives. According to this literature, private enforcement mechanisms include three main interrelated situations. First, people have an intrinsic taste for obeying the law. This intrinsic taste triggers first-party enforcement mechanisms, meaning that, independently of the content of the law, violations become subjectively costly. Social psychological research confirms that citizens tend to internalize the values expressed by the law and obey out of internal respect for the law in general (Tyler, 1990). Second, the law may serve as a focal point delineating legal entitlements and facilitating coordination (McAdams, 2000). This may empower right-holders to exert second-party enforcement against violators, under the form of self-help and reprisal. Third, the law acts as a signal for others observing violations, triggering third-party enforcement under the form of social sanctions and reprobation. Slightly abusing current terminology, in the following, we shall refer to these three interrelated effects as “internalization and coordination effects.”<sup>2</sup>

Recent contributions to the literature have pointed out that the effects of law further depend on the “social response” triggered by the enactment and enforcement of a new rule. According to these social response theories, public reaction to law may reinforce or undermine the effect of legal intervention (Tyler, 1990, Tyler and Huo, 2002; Parisi and von Wangenheim, 2006; Carbonara et al., 2008). A law that reflects prior social values is likely to enjoy immediate acceptance, internalization and support. A law that departs too visibly from prior values is not likely to enjoy an immediate acceptance and internalization. In some cases, laws that are inconsistent with shared values may actually trigger opposition. As pointed out in the literature, these alternative social reactions may boost or weaken the effects of legal intervention. Legitimacy is undermined when the content of the law departs from social norms, be they based on moral, ethical, or merely cultural values.<sup>3</sup>

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<sup>2</sup> McAdams (2005) identifies three expressive concepts in game theory - correlated equilibria, focal points, and signals.

<sup>3</sup> Tyler (1990) and Sunshine and Tyler (2003) provide support for the argument that the public's perceptions of illegitimacy and the unfairness of laws undermines people's compliance with law and police orders. The findings of Sunshine and Tyler extend their own prior research (Tyler, 1990) and support the arguments of Weber (1968) about the normative basis of public reactions to authority. Tyler (1994) evaluates the role of procedural justice in shaping reactions to legal rules and policies. People might comply with a law or a decision by an authority when it is obtained through deliberations that they view as procedurally just, even when the outcomes are not favorable to them. Often preference is accorded to procedural justice, even over distributive fairness.

Absent such initial alignment between legal rules and social values, expressed social opinion and reaction to unjust laws may undermine the effect of legal incentives.

Expressive law theories and social response theories shed light on the role of law in shaping social values and norms, and point to the important – yet often overlooked – responsibility of lawmakers as prospective norm entrepreneurs. Norm entrepreneurship is not a role generally associated with lawmaking and clearly not one that has undergone much theorizing. In this paper we wish to provide a contribution to the understanding of the dynamic interdependence of laws and norms and to the role of lawmakers as norm entrepreneurs. We provide a formal model explaining how legal intervention can lead to the emergence of new social norms, as postulated by previous literature surveyed above. Furthermore, we unveil the dynamics of possible social reactions to unpopular laws, omitted in the previous literature. According to our model, due to social reaction, the law may fail in its norm-creating mission (as may happen when a legislator is not able to understand the underlying values motivating a society), leading to a social divide, with some members of society supporting the new law and others opposing it. As a result, social conflict may ensue. These effects are present also in the case of benevolent legislation and are obviously exacerbated when considering the possible instrumental use of legal intervention by non-benevolent lawmakers.

The paper is structured as follows. In Section 2, we consider the role of law in shaping social values and norms. In Section 3 we develop a model to consider the ability of the law to produce social norms where they did not exist before. In Section 4 we illustrate the dynamics of opinion formation. In Section 5, we generate some simulations to illustrate the effect of legal intervention in the presence of internalization and coordination effects when combined with the social response to law. In Section 6, we develop some policy considerations regarding the difficult and yet unavoidable responsibility that lawmakers face as norm entrepreneurs. Section 7 concludes.

## 2. NORM ENTREPRENEURS AND THE LAW

Following Ellickson (2001), we consider the role of norms entrepreneurs in influencing norms and individual behavior, with special focus on the role of lawmakers. Norm entrepreneurs have been defined by Sunstein (1996:903) as “people interested in changing social norms.” According to Sunstein, there are many ways by which a norm entrepreneur can perform this task, including leading by example and showing their commitment to change. Norm entrepreneurs can also affect the cost of violations of the social norm, hence increasing or decreasing people’s compliance incentives. This latter goal can be attained by fostering the emergence of private enforcement mechanisms or the

formation of groups where a given behavior can be socially rewarded with approbation or sanctioned with disapprobation.

As suggested by expressive law theories, laws affect existing social norms or possibly produce social norms where they did not exist before. A new law may express values that are internalized by people and gradually modify pre-existing social opinions.<sup>4</sup> In this case, the new laws receive public acceptance and affect current opinions.<sup>5</sup> For example, a new statute that prohibits alcohol consumption, or that establishes animal rights, expresses a value that may be internalized by individuals. If individuals internalize the value expressed by the law, the law could increase its effectiveness, and potentially affect behavior even in the absence of direct incentives. In the specific example, non-legal enforcement mechanisms could be triggered. Individuals who internalize the value expressed by the law could engage in first-party enforcement, suffering guilt or shame when violating the prohibition. Likewise, second-party and third-party enforcement could be carried out by non-smokers and animal-rights activists against those who violate the prohibition. Internalization of the value expressed by the law reduces and possibly eliminates the need to enforce the legal incentives.<sup>6</sup> Lawmakers thus play an important – though not explicit – role as norm entrepreneurs. The role of lawmakers as norm entrepreneurs is qualitatively different, given their access to legislative and regulatory instruments with strong expressive and coordination value. These internalization and coordination effects of legislation may suffice to destabilize old social norms and lead to the emergence of new ones consistent with the lawmaker's agenda.

There are two different remarks that can be made at this point. First of all, the literature cited so far assumes the lawmaker's informational advantage, giving it a comparative advantage – and potentially a paternalistic role – in legal intervention. Secondly, the internalization and coordination power of the new law is always assumed to be sufficiently strong to influence behavior in the desired direction. These assumptions may be occasionally inconsistent with empirical observation, inasmuch as lawmakers can make mistakes, be captured by special interest pressures, and choose options that do not maximize social welfare. Finally, even in the presence of benevolent lawmakers who maximize the welfare of a homogeneous society, the new law may try to impose values

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<sup>4</sup> This is similar to the expressive function of law studied by Cooter (1998).

<sup>5</sup> According to Cooter (2000), citizens are often willing to pay to do their civic duties, among which is following the rules. Enacting a strict law that heavily punishes a given behavior is a clear signal that the State considers it to be of primary importance that citizens are deterred from performing the sanctioned action. A law with a strong expressive power is a law that citizens are willing to pay a lot to obey and this effect outweighs the possible effect of countervailing social norms.

<sup>6</sup> Another interesting example concerning tax compliance can be found in Posner (2000).

that are so far from current social norms as to create social disobedience. In such cases it is far from obvious that the internalization and coordination power would be enough to guarantee convergence to a unique social norm aligned with the law. Furthermore, the actions of the norm entrepreneur may instead produce social unrest where the initial goal was to bring social order.

In the following sections, we study the effect of the enactment of the law on individual beliefs and, ultimately, on social norms. In line with the existing literature we assume that people behave according to the social norms prevalent in their social group (see Sugden, 1998; Sunstein, 1996; Cooter, 1998, 2000). There is an initial distribution of individual beliefs about what is the appropriate behavior in given circumstances, and social norms reflect the distribution of individual beliefs. For instance, individual beliefs relative to smoking may vary. Some individuals may believe that smoking should be allowed everywhere, in both public and private places. Others may believe that smoking should be forbidden in areas utilized by sensitive people, such as hospitals and schools. Others yet may wish to extend the prohibition to other places open to the public, such as restaurants and trains. And so on, until reaching individuals who believe that smoking should be banned altogether, in all public and private spaces.

Individuals in society interact and exchange opinions, influencing each other's beliefs. Depending on the number of people holding each belief and on the strength with which each belief is held and publicly defended, other individuals may be influenced, changing their initial beliefs. Through such opinion formation processes, some of the initial beliefs in the group function as "attractors": people will substitute their initial belief with them. Keeping with our example, some people who believe that smoking should be prohibited in trains and restaurants could be attracted to believe that it also ought to be forbidden in train stations. If a conspicuous number of individuals end up holding the same belief, that belief will become a social norm. In this respect, the above-described opinion-formation process, could lead to different possible final situations. A possible outcome of this informational cascade could be a case where individuals converge on a shared social norm. In our example, the entire society could come to believe that smoking should be prohibited in a given category of public spaces, but should be allowed elsewhere. In that case, the prevalent social norm would sanction smoking in such public places and would allow it elsewhere. A second possible outcome is when individuals cluster around different beliefs and multiple social norms coexist in the community, one for each cluster. At the limit, society may end up being polarized, with people clustering around opposite social norms.

In this paper we study the role of law given such opinion formation process. We envisage two different roles of law, with opposite effects on legal compliance. On

the one hand, we consider the internalization and coordination power of the law, capable of attracting individual opinions towards the value embodied in the law. On the other hand, we consider the possible countervailing effects of law, where legal intervention contrary to existing social opinions could repel those who hold strong contrary beliefs. A lawmaker willing to act as a norm entrepreneur must take these opposite and interactive forces into due account when evaluating the prospective effects of legal intervention.

Prior work considered the role of norm entrepreneurs. Ellickson (2001) describes the process of social norm creation as a market. He postulates the existence of a supply side, where “change agents” (as Ellickson calls norm entrepreneurs and opinion leaders) lead by example or provide social sanctions. The demand side consists of the whole society, where individuals act as “detached evaluators of others’ social behaviors” (Ellickson, 2001:4) and reward norm entrepreneurs with social esteem<sup>7</sup> or other valuable goods (tangible or intangible, such as power). In Ellickson’s model, exogenous shocks generate changes in norms through a cascade, where all individuals in a society “jump on the bandwagon.” Sunstein (1996) examines norm-entrepreneurship without a formal model, explaining the convergence of social norms as a “bandwagon” or “cascade” effect. The opinion formation process considered by Sunstein differs substantially from ours. Similar to Kuran’s (1989) “Private Truths – Public Lies,” in Sunstein, people hide their true preferences in fear of being subject to social sanction if their belief is different from the social norm. In our model, the opinion formation process instead includes the revelation of private information triggered by legal intervention. In our model, results do not hinge upon the presence of hypocrisy. Beliefs are truly held and evolve over time, leading to social cohesion or social divide. People can “vote with their heads” internalizing the belief that is better suited to them given their initial opinions. In this way, individuals can adhere to an idea or a judgment on a given behavior without bearing the costs of having to behave differently from what they feel. In the following, we formulate a model to study the effect of law on individual opinions and on the ability of the law to produce convergence to existing social norms or to produce social norms where they did not exist before. Our paper is also related to Kahan (2000), who considers the possibility of a backlash when legal innovation departs too much from existing norms, providing a theoretical analysis of his important argument.

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<sup>7</sup> See McAdams (1997) for a theory that postulates that individuals value the esteem of others.

### 3. THE MODEL

We consider a case where there are  $n$  possible beliefs held by people, indexed by  $i \in \{1, \dots, n\}$ . A share  $p_i$  of the population holds belief  $i$ , where  $p_i$  is the relative frequency of belief  $i$ . In the following we shall consider beliefs about socially desirable behavior. In our example, belief could concern the appropriateness of smoking in public spaces, such as hospitals and schools. By convention, we assume that higher-numbered beliefs are more restrictive, so that belief  $n$  is the strictest possible and 1 the laxest. So, in our example, belief 1 would be held by individuals who believe that smoking should be permitted in all public spaces without restrictions, and belief  $n$  would be held by those who think that smoking should be prohibited in all public spaces without exceptions. Intermediate values of  $i$  would represent views supporting partial restrictions on smoking. Initially each individual holds a belief, which may be updated through an opinion formation process.

There are two factors that influence the formation of opinions: first of all, people interact with others in the society and can either be influenced by or influence others' beliefs. Secondly, but not less important, laws have an internalization and coordination value and people can change their initial beliefs when they observe a newly enacted law. Social norms are the result of the opinion formation process. We shall specifically refer to social norms as the equilibrium outcome of the opinion formation process.<sup>8</sup>

Formally, within each time interval, an individual changes her belief with probability  $\pi$ , where  $0 < \pi < 1$ . Beliefs can change in either direction, becoming more or less restrictive. To simplify the model we assume that individuals can adjust their beliefs in a gradual fashion, with no individual ever taking more than one step.<sup>9</sup>

The probability that an individual's belief becomes more restrictive (i.e., goes from  $i$  to  $i+1$ ) is

$$(1) \quad \pi_{i,i+1} = \delta + \mu \left( \sum_{j=i+1}^n p_j \right)^2 \quad \forall i < n$$

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<sup>8</sup> The social norm of a society is therefore defined by the final distribution of beliefs. The belief held by the majority becomes the social norm, even though the belief is not uniformly held and differences are present within the relevant community. Hence, one would talk of a social norm if many individuals hold similar beliefs. As will be discussed later, there may be more than one social norm present in a society.

<sup>9</sup> Assuming otherwise would obviously change the speed of convergence but would not affect our qualitative results.

According to equation (1), the transition probability  $\pi$  includes a positive term  $\delta$  and one term describing interactive opinion formation. This means that the probability of being “attracted” to a stricter belief depends on the “mass” of people holding stricter beliefs in the population. The parameter  $\mu$  represents the weight attached to the interactive opinion formation process.<sup>10</sup> Clearly  $\pi_{n,n+1} = 0$ , that is to say that an individual who already holds the strictest belief cannot become any stricter over time.

Similarly, the probability that an individual’s belief will become less restrictive (i.e., goes from  $i$  to  $i-1$ ) is

$$(2) \quad \pi_{i,i-1} = \delta + \mu \left( \sum_{j=1}^{i-1} p_j \right)^2 \quad \forall i > 1$$

where  $\sum_{j=1}^{i-1} p_j$  is the total mass of people holding laxer beliefs. As before,  $\pi_{1,0} = 0$ , that is to say that an individual who already holds the laxest belief cannot turn any laxer over time.

In order to find the equilibrium of the opinion formation process we need to find the stationary points of the distribution of beliefs. Given the transition probabilities as defined in equations (1) and (2), the dynamic process of opinion formation comes to a stop when no one holding belief  $i$  changes to  $i+1$  and no one holding belief  $i+1$  changes to  $i$ . Then the frequency of all beliefs is constant through time. In symbols,

$$(3) \quad p_i \pi_{i,i+1} = p_{i+1} \pi_{i+1,i} \quad \forall i \in \{1, \dots, n-1\}$$

Reformulating, this implies:

$$(4) \quad p_{i+1} = p_i \frac{\pi_{i,i+1}}{\pi_{i+1,i}} = p_i \frac{\delta + \mu \left( 1 - \sum_{j=1}^i p_j \right)^2}{\delta + \mu \left( \sum_{j=1}^{i-1} p_j \right)^2}$$

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<sup>10</sup> Note that  $\sum_{j=i+1}^n p_j$  represents the probability that an individual with belief  $i$  “meets” someone with beliefs that are stricter than his own. This term enters as a quadratic function to allow internal equilibria in the opinion formation process.

So, for example, for  $i=1$ , we get:  $p_2 = p_1 \frac{\pi_{1,2}}{\pi_{2,1}} = p_1 \frac{\delta + \mu(1-p_1)^2}{\delta + \mu(p_1)^2}$  and for  $i=2$

we get  $p_3 = p_2 \frac{\pi_{2,3}}{\pi_{3,2}} = p_2 \frac{\delta + \mu(1-p_1-p_2)^2}{\delta + \mu(p_1+p_2)^2}$ . By substituting recursively, we can

describe all  $p_i$ 's as functions of  $p_1$ . The  $p_i$ 's found in this fashion are the stationary points of the distribution of beliefs. Obviously, the sum of all of these  $p_i$ 's is a function of  $p_1$  and must be equal to unity

$$(5) \quad \sum_{i=1}^n p_i = p_1 + \sum_{i=2}^n p_i(p_1) = 1.$$

It is possible to show algebraically that, defining and summing all stationary-distribution  $p_i$ 's as a function of  $p_1$  and repeatedly inserting the definition contained in equation (4), we obtain a polynomial of degree  $2n-1$ . Hence  $\sum_{i=1}^n p_i = 1$  admits at most  $2n-1$  solutions.

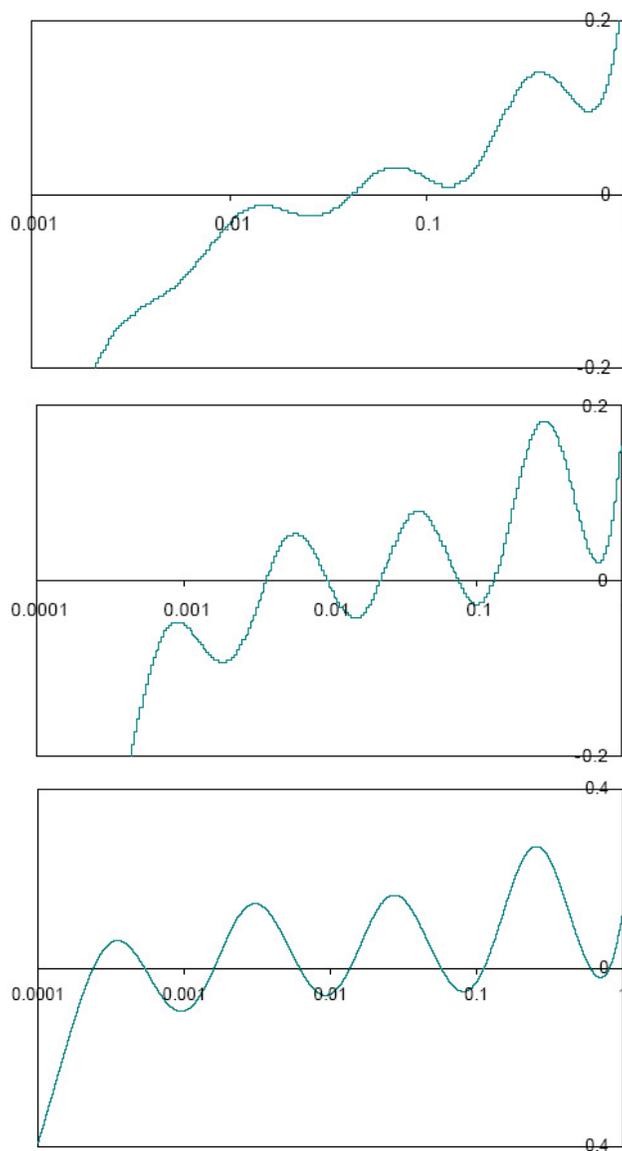
#### 4. SOME ILLUSTRATIONS

In order to provide some simple illustrations of our results, we present an example with five possible beliefs ( $n=5$ ). Clearly, all results would hold in more complex environments, with a higher number of beliefs. We can plot<sup>11</sup> the sum against the log of  $p_1$  (see Figure 1) to see that:

- there is only one  $p_1$  resulting in a stationary distribution for  $\mu/\delta < 4.5$ ,
- there are five  $p_1$ 's resulting in a stationary distribution for  $4.5 \leq \mu/\delta < 6.9$ ,
- there are nine  $p_1$ 's resulting in a stationary distribution for  $\mu/\delta \geq 6.9$ .<sup>12</sup>

<sup>11</sup> Underlying Excel files are available from the authors.

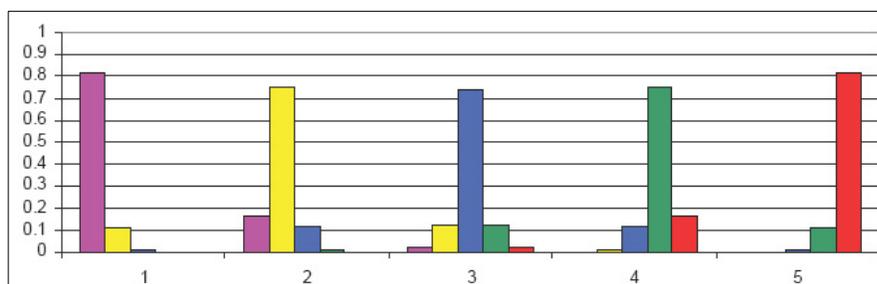
<sup>12</sup> The critical levels of  $\mu/\delta$  are rounded to the first decimal digit.



**Figure 1:**  $\sum_{i=1}^5 p_i - 1$  as function of  $p_1$   
**top:**  $\mu/\delta = 4$ , **middle:**  $\mu/\delta = 6$ , **bottom:**  $\mu/\delta = 8$

The number of solutions for the equation  $\sum_{i=1}^5 p_i = 1$  cannot exceed nine, since we know from the previous section that  $\sum_{i=1}^5 p_i = 1$  is a polynomial of degree 9 (since  $2n - 1 = 9$  in our example).

Finding multiple solutions to  $\sum_{i=1}^5 p_i = 1$  is tantamount to finding multiple equilibrium distributions of beliefs, since each value of  $p_i$  identifies a different stationary distribution of beliefs  $p_2(p_1)$ ,  $p_3(p_1)$ ,  $p_4(p_1)$ ,  $p_5(p_1)$ . Ordering the solutions by the size of  $p_1$ , one can show that all odd-numbered solutions represent attracting distributions while even-numbered solutions represent repelling distributions.<sup>13</sup> Figure 2 shows the five attracting stationary distributions for  $\mu/\delta = 8$  (pink, yellow, blue, green and red). Note that, in this example, all five beliefs are modes of an attracting distribution.<sup>14</sup> This suggests that the distribution of beliefs is representative of a fairly unified social group, without social divide. Moreover, Figure 2 reveals that none of the five beliefs dominates in terms of efficiency. This implies that no one forms the basis for a social norm and that all beliefs survive in the equilibrium. In the examples below, we will see different situations where a unique social norm emerges and a cohesive community develops through legal intervention, as well as examples where legal intervention leads instead to a social divide, where multiple social norms coexist in a split society.



**Figure 2: Five attracting stationary distributions for  $\mu/\delta = 8$ .**

<sup>13</sup> This can be easily seen by simulation. Alternatively, one can linearize the dynamic system around a given attracting distribution, and obtain the Eigenvalues of the characteristic matrix (the matrix has many identical entries in each row and therefore Eigenvalues are not so difficult to calculate), to see that all Eigenvalues are negative for the odd-numbered stationary distributions and at least one is positive for the even-numbered stationary distributions.

<sup>14</sup> Slightly abusing terminology, we might say that, in this example, the set of modes is connected, since there are no intermediate opinions between two attracting distributions.

## 5. NORMS AS INSTRUMENTS OF LEGAL INTERVENTION

We shall now study the effect of legal intervention on the formation of norms and the corresponding role of norms as instruments of legal intervention. Consider the case where the legislator introduces a new law, setting  $\lambda \in \{1, \dots, n\}$  as the legally prescribed behavior. The value  $\lambda$  prescribed by the law corresponds to one of the possible beliefs about socially correct behavior (in our example, the law may regulate smoking, setting a standard chosen among the possible pre-existing opinions about smoking).

When a new law is introduced, we can see two different effects on transition probabilities. On the one hand, the law has an internalization and coordination power that attracts beliefs toward the legally commended behavior. As a result of this effect, the probability that individuals may change their beliefs in the direction implied by the law increases, making it less likely that beliefs may move further away from the legal command. On the other hand, the law shapes individual beliefs and, consequently, social norms through an opinion formation process. Individuals within society react to new laws and their reaction is observed by other individuals, also potentially affecting their views. This interactive opinion formation process is stronger when the distance between the pre-existing beliefs and the value embodied by the law is large. These two effects may go in opposite directions, and their net effect will depend on the magnitude of the internalization and coordination power of the law and the distribution of pre-existing beliefs within society.

In our model, these two effects are shown to affect the transition probabilities  $\pi$  as follows: 1) the internalization and coordination power of the law impacts the fixed component  $\delta$ , attracting individual opinions toward the value expressed by the legal rule; 2) the weight of the interactive opinion formation process changes, becoming particularly strong for those individuals whose initial views are far from the new law. In other words, the probability that an individual will change her initial beliefs through the social interaction is a function of the difference  $i - \lambda$ .

In particular, in  $\pi_{i,j}$  we will replace the original  $\delta$  with  $\delta'$ , where

$$(6) \quad \delta' = \begin{cases} \delta_0 & \text{if } (j-i)(\lambda-i) \leq 0 \\ \delta_1 > \delta_0 & \text{if } (j-i)(\lambda-i) > 0 \end{cases}$$

where  $\delta_0$  and  $\delta_1$  are positive constants. The second line in equation (6) implies that the drift towards the law is larger than the drift away from the law. Formally, it is less likely that an initial belief  $i$  will become more restrictive, shifting to  $i+1$  if the new law is more lenient than  $i$ . Similarly, a move away

from the initial belief  $i$  to  $i-1$  is less likely if the new law is more restrictive than the initial belief. Vice-versa, the move becomes more likely if it goes in the same direction as the law. So, for instance, a move from  $i$  to  $i+1$  is more likely if  $\lambda > i$ . This is exactly the definition of the normative and internalization and coordination effects of the law (see Cooter, 1998, 2000).

Similarly, the parameter  $\mu$  in equations (1) and (2) instead becomes  $\mu'$ , where

$$(7) \quad \mu' = \mu_o + \theta |i - \lambda|$$

and where also  $\mu_o$  and  $\theta$  are constant and positive. Expression (7) implies that the effectiveness of the opinion formation process is greater the larger the difference  $i - \lambda$ , i.e., individuals give greater weight to opinions expressed by others when their belief  $i$  is distant from the law  $\lambda$ .<sup>15</sup> This reflects the idea that a new law induces reactions and discursive interaction among all individuals but in particular among those whose opinion differs most from what the new law stipulates ( $\theta > 0$ ).

This modified version of the model allows us to study the impact of a new law, shedding light on some practical principles that may help guide legislative action. In the following, we consider several scenarios and illustrate the possible effects of legal intervention with the help of simulations.

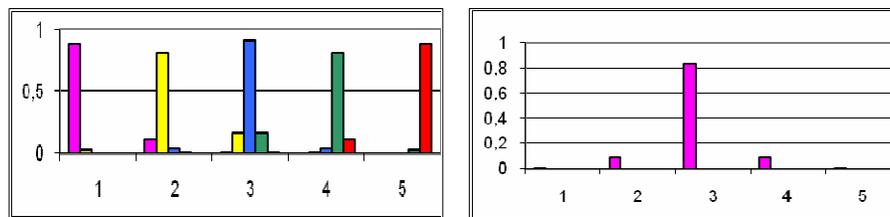
## 6. LAWMAKING AND SOCIAL DIVIDE: BALANCING THE EFFECTS OF LEGAL INTERVENTION

Let's begin by considering the case where a new law with a strong internalization and coordination effect is enacted. In our notations, this implies that the new law is characterized by a large  $\delta_1$  relative to  $\delta_o$ . Compared to situations with lower values of  $\delta_1$ , the number of attracting stationary distributions is reduced, moving their modes closer to the newly enacted legal norm. As a result, all the beliefs that represent modes of the attracting stationary distributions are close to each other. This implies that an increase in the internalization and coordination power of the law fosters a cohesion of beliefs within society and does not lead to an increase in social divide. The effect of a higher internalization and coordination value,  $\delta_1$ , can be seen in Figure 3. The graph on the left depicts a situation where  $\delta_o = \delta_1$ , i.e., a situation where the law has no internalization and coordination power, and the

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<sup>15</sup> One should note that the difference  $i - \lambda$  enters equation (7) in absolute value. This means that differing beliefs have the same power, no matter whether they are more restrictive or more lenient than the new law.

drift towards the law is equal to the drift away from the law. In the graph to the left, the introduction of a law with rule  $\lambda=3$  induces some of the people holding beliefs  $i=2$  and  $i=4$  to change their belief to  $i=3$ , being thus driven towards the law. All beliefs, however, remain modes of the five attracting distributions. Different is the situation where  $\delta_1 > \delta_0$ , in the graph to the right of Figure 3. In that case, the introduction of a rule of law  $\lambda=3$  moves the majority of the people towards  $i=3$ . The attracting distributions close to 1 and 5 have virtually zero frequency and the modes at 2 and 4 are also considerably reduced. The internalization and coordination power of the law has moved the majority towards the belief supported by the legal rule. Following the definition of a social norm as the behavior supported by a majority of individuals, the behavior corresponding to the mode of the attracting distribution close to the belief  $i=3$  becomes a social norm. This is a case where the high internalization and coordination power of the law helps create a social norm consistent with the law, curing the pre-existing multiplicity of different beliefs and actions. The case with high  $\delta_1$  is therefore an ideal situation for lawmakers, since the new law effectively shapes beliefs and, ultimately, behavior. Laws and social norms come to converge thanks to the internalization and coordination power of the law.

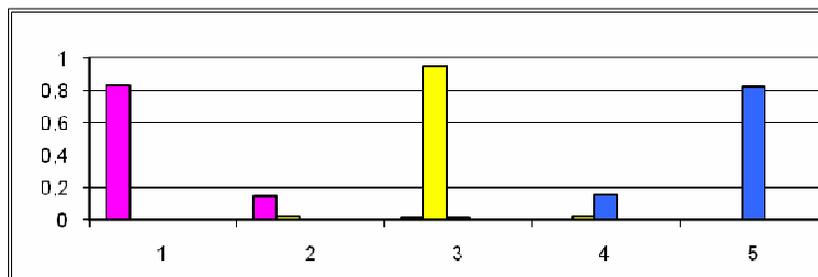


**Figure 3: The effect of high  $\delta_1$ . Left,  $\delta_1 - \delta_0 = 0$ , right  $\delta_1 - \delta_0 = 1$ .**

This outcome occurred, for example, after the introduction of laws banning smoking from public spaces, including restaurants. Notwithstanding the fact that many people were active smokers enjoying smoking in restaurants, they complied with the law because they perceived that it was expressing a widespread belief about the health advantages of smoke-free environments.

Consider now the effect of  $\mu_o$ , the fixed component in the weight, on the interactive opinion formation process. Larger values of  $\mu_o$  work in the opposite direction with respect to  $\delta_1$ . For a given internalization and coordination power of the law, a higher  $\mu_o$  implies that opinions expressed in disagreement with the new law (either opposing the law for being too strict or too lax) offset the internalization and coordination power of the law, increasing the number of

attracting distributions. Figure 4 shows what happens when a new law with  $\lambda=3$  is introduced in a setting with large values of  $\mu_o$ . We take the same parameter values as those used in the right graph in Figure 3, increasing  $\mu_o$  (from 8 to 11.5). This leads to a shift of opinions from  $i=\lambda=3$  to the extremes. In this example, we can see that when  $\mu_o$  is high, extreme beliefs ( $i=1$  and  $i=5$ ) can attract other individuals previously holding less extreme views, while the internalization and coordination effects of the new law can pull together the beliefs of individuals previously holding moderate views. In this situation, the weight placed on the interactive opinion formation process leads to a multiplicity of attracting opinion distributions, preventing the emergence of a unique social norm. Looking at the location of the attracting distributions, in this case the population mostly clusters around three different beliefs. The presence of the highest mode at  $i=\lambda=3$  shows that the society is not polarized. However, three different local norms arise, with the population clustering around three different behavioral norms, only one of which is consistent with the precepts of the law. Lawmakers who face a society characterized by a high  $\mu_o$  should therefore consider the possibility that the introduction of a new law may not have the desired effect. When behavior is strongly influenced by individual beliefs, multiple attracting distributions may arise, and different patterns of behavior may coexist in a society.<sup>16</sup> In our example, this would mean that different groups within society could follow different norms regarding smoking in public places: some of them would comply with the law, others violate the legal prohibition, and yet others would follow a norm that is stricter than the legal command. The impossibility of defining a unique social norm prevents the definition of a system of social sanctions and the society will not be able to converge to a unified behavior. The law will therefore be ineffective in forging a compact pattern of behavior consistent with the law.



**Figure 4: A high  $\mu_o$  offsets the expressive power of the law.**

<sup>16</sup> Such an assumption is consistent with the definition of a social norm as a frequency concept.

The case of ineffective law discussed above is not the worst possible scenario that a lawmaker can face. Under some circumstances, the introduction of a new law can produce social divide. Society would be polarized on opposite beliefs. This divide could materialize in different ways, ranging from the emergence of a fierce debate to more extreme situations with social conflicts, discrimination and segregation. In our model, polarization occurs for high values of  $\theta$ . From expression (7) we know that  $\theta$  measures the impact of a gap between the values expressed by the law and the individual beliefs in the interactive opinion formation process. When  $\theta$  is high, an individual is more influenced by opinions expressed by others if her belief is distant from the law (i.e., larger values of  $|i - \lambda|$ ). Clearly, this leads to equilibria characterized by a split set of attracting distributions, regardless of the value chosen by the law. To see why, consider first the case where  $\lambda=3$ . Here, the law expresses a “moderate” value. Those who are most distant from  $\lambda$  are the individuals with a belief close to 1 and 5. These individuals are more likely to move towards the extremes 1 and 5 rather than to be persuaded by the moderate views expressed by the law. As a result of the introduction of the new law, the original distribution of beliefs “breaks” in the middle. A similar effect can be observed in the case where the law is set at  $\lambda=1$ . In this case individuals with beliefs relatively close to 1 will have their prior belief reinforced by the law, whereas the beliefs of others will move in the opposite direction. This is an interesting case where there is social divide and conflict develops between law abiders and law violators. A symmetric situation would ensue when the new law is set at  $\lambda=5$ .

This case can easily illustrate the impact of a ban on alcohol consumption during the Prohibition era in the U.S. Stuntz (2000) notes that Prohibition generated active civil disobedience in the form of protests, the reason being that vice crime enforcement has historically been concentrated upon poor and urban neighborhoods, both because of the theory that in such neighborhoods the incidence of a given vice will be correlated with the incidence of several others, and because detection has been easier since poor people have a harder time concealing vice activities. Such enforcement has often led to the perception that these policies were driven by racial or class bias rather than moral justice, corroding the authority of the law for a large portion of the public.<sup>17</sup>

Of course, if many individuals share the opinion expressed in the law, there will be little opposition or discussion about the new law, and interactive opinion formation would play a more limited role, giving a greater opportunity for the internalization and coordination effects of the law to influence public

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<sup>17</sup> For further analysis, see Parisi and Von Wangenheim (2006).

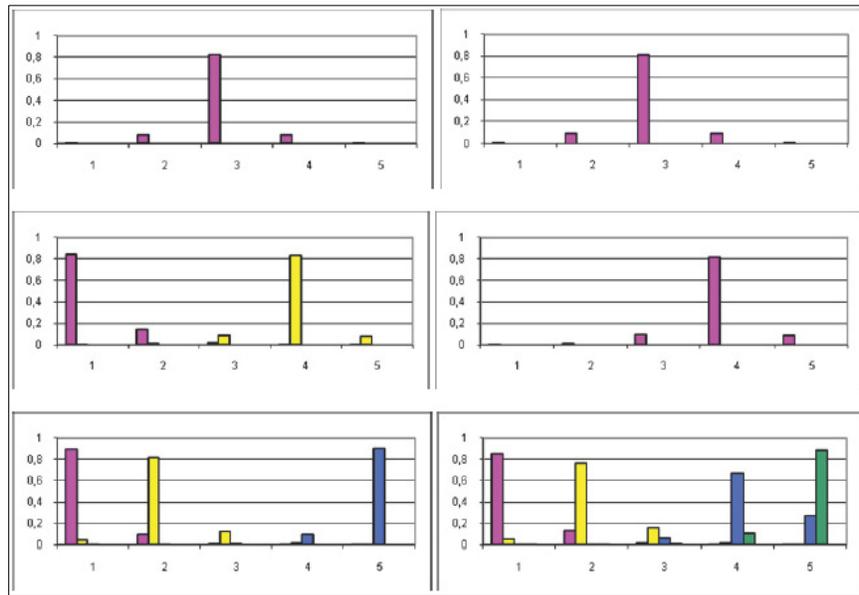
opinion. Therefore, opinions would likely be attracted towards a distribution with its mode on the value expressed by the law. There may also be attracting distributions of opinions with a mode clearly different from the legal rule, which may stabilize when there is a strong interaction of those opinions most distant from the legal rule.

When opinions happen to concentrate in a narrow but clearly positive distance from the legal rule, the social split will likely be unstable: the internalization and coordination effects of the law may successfully pull more opinions towards the law, and the force of the interactive opinion formation process will further diminish, bringing gradual consensus towards the new law. When the internalization and coordination effects of the law are not sufficiently strong to offset the interactive opinion formation process, individual opinions would be pulled away from the legal norm. This process would also be self-reinforcing: the more individuals disagree with the law, the more they will discuss and the stronger their attraction will become for additional individuals. Eventually, individuals will cluster, strengthening their belief distant from the legal rule. In our numerical example we get this case, for instance, with values of  $\delta_o = 1$ ,  $\delta_l = 1.4$ ,  $\mu_o = 8$ , and  $\theta = 3$  for legal rules different from 3, or for values of  $\delta_o = 1$ ,  $\delta_l = 1.4$ ,  $\mu_o = 8$ , and  $\theta = 2$  for legal rules  $\lambda = 1$  or  $\lambda = 5$ . For other legal rules we get a unique attracting distribution with its mode at the legal rule (see Figure 5 for these results).

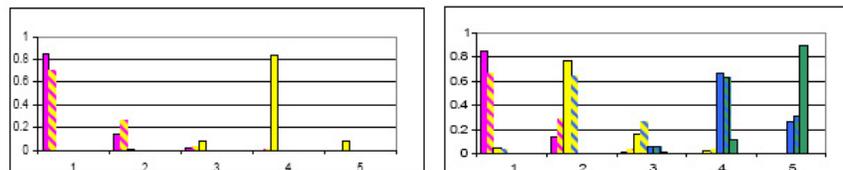
These findings are worth noting. Legal norms which are too distant from the social norm may stabilize the social norm and thereby possibly render the legal norm ineffective. One should note, however, that, at least for the 5-opinion case, the social norm will not move further away from its collocation prior to the enactment of the new law. To make the countervailing effect of social norms more clear, consider a situation in which the social norm is close to the attracting distribution with its mode at 2. Suppose the goal is to have a legal and social norm at 5. Then introducing a legal norm  $\lambda = 5$  immediately will fail: in both cases described in Figure 5, social norms will remain close to the distribution with their mean at 2. If, however, the legislator introduces a law at  $\lambda = 3$  or  $\lambda = 4$  in a first step, then the internalization and coordination effects of the law would be produced and opinions will be drawn to the attracting distribution with their mode at 3, or 4, respectively. In a second step, the legislator could still introduce the legal rule at  $\lambda = 5$  and then be successful at least for the left example presented in Figure 5.<sup>18</sup>

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<sup>18</sup> Our model provides a theoretical foundation for earlier work suggesting the use of “gentle nudges” rather than “hard shoves” when lawmakers wish to change well-rooted social norms. Gradual enforcement may prevent the development of social opposition to the law (see Kahan, 2000).



**Figure 5:** Attracting distributions with  $\delta_o = 1$ ,  $\delta_1 = 1.4$ ,  $\mu_o = 8$ , and  $\theta = 3$  (left) and  $\theta = 2$  (right) for legal norms of  $\lambda = 3$  (top),  $\lambda = 4$  (middle),  $\lambda = 5$  (bottom)



**Figure 6:** The dynamics of opinion formation and social norms.

A few words should also be spent to explain the workings of repelling distributions. Figure 6 replicates the left middle and the right bottom subfigure of Figure 5, with the repelling distributions marked by hatched bars. From the left part of Figure 6, it becomes clear that, if the legal norm is set at  $\lambda = 4$ , the original distribution with its mode at 2 would place too much weight on those opinions larger than 1 to make society be attracted by the new attracting distribution with mode 1. As shown before, social norms would therefore evolve toward the value expressed by the law with an attracting distribution with mode 4. From the right part of Figure 6, we can also see that the repelling distribution between the attractors with mode 4 and 5 is very similar to the

attractor with mode 4. Hence, even a minor random influence may shift the social norms beyond this repelling distribution into the region of the attracting distribution with mode 5. As a consequence, even in the example depicted in the right part of Figure 5, a law set at  $\lambda = 5$  is most likely eventually to succeed in attracting the social norm to a distribution with its mode at 5, if legal change is undertaken in a piecemeal fashion and the law  $\lambda = 5$  is introduced only as a second step of legislation.

## 7. CONCLUSIONS

In this paper we have provided a model illustrating the impact of legal innovation on the opinion formation process underlying the genesis of social norms. The literature in this field has thus far focused on the internalization and coordination effects of the law and on the ability of legal rules to create focal points in a society where a multiplicity of social norms exist (Cooter, 1998, 2000; McAdams, 2000). In this paper we move beyond these theories, also considering the effect that pre-existing beliefs and social norms can have on the way people adjust to a new law.

This paper examines the interaction of social and legal norms, providing a formal explanation of the evolution of individual opinions and values. One of the novel elements in our analysis is the underlying assumption that the lawmaker is not an omniscient planner, but an individual or institution facing uncertainty with respect to public reaction to legal innovation. In order to study the dynamic adaptation of social norms and individual behavior to legal change, we have introduced a full-fledged mechanism of interactive opinion formation and shown that under given conditions interaction can give way to social norms different from the norms embodied in the law. We have likewise shown that the introduction of a new law may generate social divide even in the face of a previously balanced society. We have focused specifically on social divide, as this is a situation that a legislator willing to act as a norm entrepreneur should try to avoid. Social divide with respect to legal compliance is indeed particularly problematic, inasmuch as it would provide grounds for the phenomena of statistical discrimination and for the exacerbation of segregation or other forms of social conflict and violence.

We have shown that social divide occurs in equilibrium when individuals feel very strongly about discrepancies between their initial beliefs and the values embedded in the new law. A legislator who faces a society of individuals who react strongly to laws departing from their own values and beliefs should therefore avoid the introduction of extreme laws. They should instead try to foster gradual adaptations of social norms to legal values. Under certain

circumstances, this can be accomplished with piecemeal legal intervention and gradual manipulation of individual values, attracting individual values towards the desired legislative value by initially adopting laws more suited for the majority of the people. Extreme values and relative social norms can only be shaped by proceeding in stepwise fashion.

The understanding of how social dynamics may be triggered by legal innovation is invaluable to lawmakers. Our model is intentionally neutral with respect to the objective function of the lawmaker. Future extensions should place these findings within a public choice context, considering that lawmakers cannot be universally assumed to act as benevolent social planners. The role of lawmakers as norm entrepreneurs and the resulting danger of the political manipulation of social norms should be more explicitly acknowledged and studied in the literature. The introduction of a new law not only can have unintended effects, creating social norms that differ from the law and producing social divide, but the knowledge of how the society works can become a powerful and potentially dangerous instrument in the hands of captured or ill-motivated legislators. Further extensions should also explore the dynamic interaction of individual values and the content of the law. Explicit consideration should be given to the use of alternative instruments to foster legal compliance, with special emphasis on the different roles of sanctions and rewards in shaping social norms.

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