THE
Chicago Norms
Be warned and be afraid: norms have run amuck at the University of Chicago Law School.

by Randal C. Picker '85

No, I don't mean that the vaunted faculty lunch tradition of the Roundtable has gone by the wayside; we still have lunch at the Quad Club Monday, Wednesday, Friday, and Saturday. Nor do I mean that the Socratic method has been abandoned or that we have started to address our students by their first names; our students expect and thrive on intense questioning and, it turns out, I learned recently, that most of our students don't even have first names (well, actually not and you do hear them outside of the classroom). Nor do I mean that casual dressing has taken over as it has it in so many other places (though I can still hope).

No, when I say that norms have run amuck at the Law School, I mean something quite different: a thriving body of scholarship at the Law School centered around norms. Office by office the work proceeds: on the 4th Floor, Dan Kahan, Tracey Meares, Eric Posner and Cass Sunstein; on the 5th Floor me; and on to the 6th, with Lisa Bernstein, Richard Epstein and Dick Posner (though Richard might say that he does custom, not norms).1 The Law School hosted a conference on norms in April, 1997, and the papers have just been published in a special issue of The Journal of Legal Studies, one of our faculty-edited journals.

Somewhat tongue-in-cheek—but only somewhat—there is talk of a New Chicago School, an idea blessed in a special issue of The New Yorker on what's next.2 Marketing matters—even in academia—so this may be a good way to go, but I have a different suggestion. As I write, the NBA owners have locked out the players, Phil Jackson has retired, Tim “Pink” Floyd has been hired, and Jordan talks of retirement. The Bears are coming off of their worst season in recent memory with little hope of improvement in the near future. The Blackhawks haven't won the Stanley Cup in decades, and didn't even make the playoffs last year in a league where everyone makes the playoffs. For the Cubs, futility is measured not in decades but in centuries—well, almost—and even though they flirt with respectability now, the Cubs have a swoon for every month, not just the melodic June, and I am certain that we are being teased once again. The White Sox don't even have the decency to do that, having not recovered from last year's profits-before-playoffs dismantling of their pitching staff. What Chicago needs is not a new school, but a new team, a team that will rise up as the real Monsters of the Midway. What Chicago needs, drum roll, please, is us, the Chicago Norms.

In this essay, I will highlight a handful of key ideas. First, I will look at the way norms shape society and the possible role that law might play in influencing norms. Second, I will walk through a new approach to modeling-agent based computer simulations and discuss what we can learn from these models about norm competition. It is now possible to treat the computer as a laboratory to run experiments in self-organization, to test in silico, as the phrase goes, the circumstances under which a society will evolve on its own to a desired social outcome. These tests in societal self-organization are essential first-steps before we can understand the
possible domain for laws. Finally, I will discuss seeding norm clusters, a particular strategy that the government—or, for that matter anyone else interested in shaping norms and values—might try.

Playing for the Norms
What should you know if you want to play for the Norms? There is quite a bit, but I will only touch on a fraction of it here. The idea of norms is sufficiently well-understood that I will introduce it only briefly. Consider three situations:

- You go to lunch with a business associate. It's Friday, the end of a long week. The waiter approaches your table and asks whether you would like to order a drink. You hesitate; you would like a drink, but at the same time, you don't want your lunch partner to think ill of you for having a drink. Of course, she may be hoping that you will order a drink, so that she can as well. What do you do? What does she do?

- During a speech, you want to mention the substantial role played in your business by members of a particular racial group. Do you refer to these employees as African-Americans? Blacks? People of color? You know of course that past terms for this racial group are no longer acceptable notwithstanding continued use by organizations such as the NAACP and the United Negro College Fund. You don't want to be seen as following what might be seen as the new political orthodoxy, but at the same time, you also don't want to offend these valued employees. What do you do?

- You are negotiating the terms of your employment with a new employer. You care about the parental leave policy, as you hope to have children soon. You are nonetheless reluctant to ask about this, as you fear that your new employer may doubt your commitment to the new job. What do you do?

These are situations in which the background context—whether described as a norm, a social meaning or a social role—matters in an important way. The lunch presents a situation where neither person wants to move first. Other cases similar to this include prenuptial agreements, where asking first could be seen as a sign of doubts about the impending marriage, and moving to colorblind hiring unilaterally in a community dominated by discrimination norms. A social norm may exist that will resolve these situations in ways that benefit all interested parties. This norm could easily change over time or be subject to geographical or class variation.

The second situation is more complex. It demonstrates clearly that norms can evolve and presents a clear example of the idea of, to use Cass Sunstein's term, a norm entrepreneur. Who used the term African-American before Jesse Jackson embraced it? Once Jackson did so, the norm shifted away from Black, and this created a complex range of possible social meanings from the use of the phrase “African-American.” Initial use of the term could be seen as embracing Jesse Jackson personally or perhaps the broad set of social goals that he favors. The third situation might be seen as just a problem in signaling theory, but can also be understood as embedded in a web of social roles and social norms. Mothers are expected to be quite involved with their children; fathers in the ’90s increasingly so. So how one answers the question almost certainly depends on gender. Norms matter as well: if everyone routinely asks this question, it loses its signaling punch.
Law and Norms

As these examples should make clear, norms are an important part of our everyday lives. They impose constraints that bind as surely as the physical constraints that will let me run only so fast. But the physical constraints are just out there, given by nature. Norms are constructed. We can imagine good norms and bad norms extant in the society, and the very health of the society may depend on whether good norms can emerge (consider norms relating to exercise and diet).

A key issue for law is defining its limits, understanding what the boundaries of law are and need to be. When must we regulate? When, instead, will behavior coalesce in an appropriate way without the intervention of law? We face these same questions regarding the norms of the society. Should the government try to establish particular norms? Can the government identify good norms? Would the government succeed in eliminating destructive norms? Given the pervasive role that norms play in structuring our day-to-day lives, the government would be remiss if it simply and thoughtlessly regarded the entire subject of norms (and values) to be outside of its domain.

Given the important way in which social norms influence the costs and benefits of particular choices, we need to understand how norms arise. Individuals typically have little control over the content of a particular norm and seemingly no ability to push society from one norm to another. This raises the specter of a collective action problem, that we will have no way for society to coalesce around a beneficial norm. In that framework, direct interventions by the government in norms—norm management in Cass Sunstein’s phrase—appears to be a plausible response.

Agent-Based Computer Simulations

This then is the question: when will the separate actions of individuals give rise to appropriate norms? Is there a substantial risk that bad norms will emerge? I will try to provide one answer to this question, and will do so using a relatively new analytic tool, agent-based computer simulations. These simulations extend quite naturally insights from game theory into larger and more interesting environments. To get at this, start with the following game:

<table>
<thead>
<tr>
<th></th>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Left</strong></td>
<td>1,1</td>
<td>0,0</td>
</tr>
<tr>
<td><strong>Right</strong></td>
<td>0,0</td>
<td>b,b</td>
</tr>
</tbody>
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**Payoffs: (Player 1, Player 2)**

We have two players, each of whom faces two options. If both players play “left,” each player will receive a payoff of 1. If both choose “right,” each will receive a payoff of b. If they do not make the same choice—one plays “left” while the other plays “right”—they get nothing. This is known as a coordination game, for reasons that are probably obvious. The players want to coordinate their choices, and depending on the value of b, will want to coordinate on left or right. In all of the models considered here, b > 1, so they will want to play “right.”

The strategies left and right are obviously quite abstract, but we could translate this game quickly into any number of relevant situations. In the prenuptial agreement game, the strategies are “don’t ask” and “ask.” Neither player wants to be the only one asking for a prenuptial agreement—it might be seen as a lack of commitment to the marriage—so the prospective partners want to coordinate successfully. In a community dominated by a discrimination norm and the players are two employers, neither employer wants to break from the norm unilaterally to hire the group suffering the discrimination. If the employers act together, the community can’t play one against the other. Coordination matters here as well. I will stay quite abstract but you should see the situations that the general case tracks.

Standard game theory has very little to say about how this game will be resolved. Neither player has a single-best choice—a dominant strategy in game theory lingo. If Player 1 plays left, Player 2 wants to play left, and vice versa; if Player 1 plays right, Player 2 wants to play right, and vice versa. Neither player has a single best strategy to play. Both (left, left) and (right, right) have a special significance. They are Nash equilibria, meaning that neither player would want to switch strategies given the other player’s strategy. Nonetheless, we have no good way of choosing between these equilibria. But this small situation isn’t of great interest to us, and moving to a larger number of players may improve our chances of finding an outcome. To do this, I will embed this game in a spatial framework, and will lay out a 101 x 101 grid, giving rise to 10,201 players:

![Diagram 1](image)

Player X interacts with her immediate eight neighbors. She plays the coordination game we saw before with each, but she only plays one strategy per round. She makes one choice—left or right—and that choice is played in the games with each of her eight neighbors. What Player X gets—her payoff—is determined by her choice and that of her neighbors. If she played left and each of her neighbors played left, she would get a payoff of 8. If one of those neighbors played right, X’s payoff would drop to 7, and so on. Note also that there are no boundaries here, notwithstanding the picture. Players at the top are treated as neighbors of the players at the bottom, at the left edge with those on the right edge.

This lays out the game and its setup. Next, we need to specify a choice rule for the players. Assume that each player uses the same rule: in the next round, the player will adopt the strategy that did the best, as measured by how her strategy performed and how her neighbors did. So the player looks at the payoffs obtained by herself and her eight neighbors, figures out which is highest.
and adopts the strategy played by that player. Obviously, this scheme doesn't work in the first round—there are no prior payoffs to evaluate obviously—so strategy choices will be assigned at random.

**Modeling Norm Competition**

We are ready to jump in; look at Figures P1 to P6. These are snapshots from the simulation run on my computer. I set \( b = 1.05 \)—recall that this measures the benefit of coordinating on the beneficial outcome—and started with an initial mix of 50% playing left and 50% playing right. This is the mix of blue and red that you see in Figure P1. (In the first round, left players are coded as blue, right as red.) I let the model run round-by-round: calculate payoffs given the choices made by the players, let the players switch choices given how they did and how their neighbors did, calculate payoffs for the new choices, let the players switch again, etc. Figures P1 to P6 show snapshots of the evolution of the norms of this particular society.

Look at Figure P2. Many players have stayed with their first round strategies (these are the red and blue players), but many have switched (the yellow players switching from left to right, and the green players switching from right to left). For these players, they saw one of their neighbors doing better with a different strategy, and they switched to that strategy. Run the model another round and consider Figure P3. Organization is emerging. We have well-defined clusters of blue and red players. There still is ongoing change (again the yellow and the green), but much less than in the prior round. Run another round and consider Figure P4, then Figure P5 and finally Figure P6. Rather quickly the model converges: players stop switching strategies, and we have clusters of players playing both strategies. (To play this simulation live, go to www.law.uchicago.edu/Picker/lawschoolrecord.html.)

Stop and assess this. We haven't done very well here. From a social standpoint, we would like everyone to play "right." That is the strategy that results in the highest payoff (recall that \( b = 1.05 \)), and yet we have a bunch of folks playing "left" together, which is the inferior strategy. Moreover, where red and blue players abut, they are failing to coordinate at all, and therefore get 0 from their interactions. What we would really like to see is an all-red board, but we are a long way from that. Nonetheless, this isn't too surprising. The value of getting to the right equilibrium is low—1 vs. 1.05—and the initial starting conditions do not tilt the tables in favor of one of the equilibria.

Tweak the parameters and see what happens. Bump \( b \) up to 1.25 and again assume that left and right are initially played in equal numbers. Figures P7 to P12 show six snapshots of the evolution of this model. All we have done is increase the value of coordinating on the second equilibrium, and now the model converges to the social optimum. Success! But we shouldn't spend too much time congratulating ourselves or our players. Simply increasing \( b \) to 1.25 isn't enough to assure convergence to the good outcome. Let 80% of the players start with the left strategy and 20% with the right, and consider the five snapshots of the model given on the color plate as Figures P13 to P17. Once again, the model fails to converge completely.

These examples give a flavor for the range of behavior that arises in the model. To get more systematic, I set \( b = 1.65 \) and ran sets of 100 simulations of the model for different initial densities. The results are set forth in Figure 1. To be clear on the meaning of the figure, I ran 100 simulations of the model with \( b = 1.65 \) for each of the initial densities shown along the x-axis (9900 simulations total). Three possible results are captured in the three graphs of Figure 1. All of the players could converge on playing right ("Red"); all could converge on left ("Blue"); some could converge on left while others played right ("Mixed").
The graphs chart the number of times each possible outcome occurs in the 100 simulations for each initial value. So, if we start with 1% of the players playing left and 99% playing right, then in 100 times out of 100, the play of the game converged on the right-right (or all-red) equilibrium. In contrast, if we start with 99% of the players playing left and 1% playing right, then in 100% of the cases we converged on the inferior left-left equilibrium.

Neither of these results is particularly surprising. What is more interesting is to note how robust the good equilibrium is. Even if we start in tough conditions—say with 80% of the players playing left and 20% playing right—we still converge on the good equilibrium in 100% of the cases. As we push the initial density of players playing the inferior choice ever higher though, we run into problems. Some fraction of the simulations converge to the inferior equilibrium. By the time we reach just a bit more than 89% playing left initially, the graphs cross; as many simulations converge on the bad equilibrium as converge to the good equilibrium. Eventually, for higher initial densities of left players, the rout is complete, and all of our simulations converge to the inferior equilibrium. The shape of these graphs is characteristic of a phase transition in physics or a model of punctuated equilibria in biology. The system has two natural equilibria and shifts from one to the other occur over a very narrow band. The combination of a standard coordination game and some neighborhood effects results in this phase transition.

So far we have looked at nearly 10,000 simulations of a 10,000 player model for a single value of \( b = 1.65 \). The next step is to understand how these results change as we alter \( b \). Set \( b = 1.55 \) and re-run the model.

There are five distinct bands of behavior and two different phase transitions. The existence of three different steady-state regions and two phase transitions is an important change from the prior analysis. Convergence on all-blue or all-red means that we eventually see only one norm in use in the society. The good norm drives out the bad norm (or vice versa). We do see both norms in use out of equilibrium, but only until we transition to fixed, uniform play. In contrast, when we reduce \( b \) just slightly, we now see a region in which we have two norms at work, in perpetuity.

This is all good news. We see a good chance of successful coordination on the right norm. The model converges quite nicely to the superior equilibrium even in the face of tough starting conditions. In real situations, we might think of the initial choice of strategy as indeed random. This example says if these choices are essentially coin flips—a 50/50 chance—the model will always converge to the right norm. Even if the choice is substantially biased against the good strategy, we still converge on the best norm. And my intuition says that the bias should run in favor of the good strategy if players are choosing between both strategies at the same time.

We should continue to reduce \( b \) to see how behavior changes. It turns out that we can remain fairly confident that the model will converge on the good norm so long as \( b \) is at least 1.15. To be sure, the chance that
we will end up elsewhere, in one of the mixed play outcomes or the all-blue outcome, is rising, but even with $b = 1.15$, so long as not more than 60% of the players play left initially, we will converge on the good norm. But there is a sharp break between 1.15 and 1.14. The probability of ending up in the good norm equilibrium in all cases plummets. The best bet here is that we will end up in a mixed play region. We will see both norms extant in the society, and perhaps in significant numbers. And this result holds as we move $b$ towards 1.

The broad interpretation of these results is that when there are shared values about norms, under a broad set of assumptions, my model societies exhibit strong self-organization. When norms are competing — when two norms are in play simultaneously — the individuals in the society successfully coalesce around the Pareto-superior norm. This is not to say that the good norm is invariably reached or that we cannot influence whether the good equilibrium obtains. The set of starting conditions that leads to the superior norm depends on the scope of connectedness among neighbors, the information available to neighbors in making decisions, and the rules they use to assess the information available to them. Each of these is a possible instrument for action by the government. In contrast, the results suggest that we should be less sanguine about sequential norm competition, as occurs when a new norm arises to compete with an old, entrenched norm. There is good reason to think that the old norm will continue, notwithstanding that its useful life has expired.
Seeding Norm Clusters

If we take the model literally, there is a more direct route open to the government: seed norm clusters. Given a cluster of the right size—for example start with 6 red players clustered together in a sea of 10,195 blue players—the model will converge to the appropriate social equilibrium, even if the absolute number of players of the strategy in issue is almost zero. Look at the development of the model as seen in the six snapshots of its evolution in the Figures P18 to P23.

Gerry Mackie provides a striking example of the power of seeding norm clusters in an account of the end of footbinding in China. Mackie argues that footbinding should be understood as a convention at work in the marriage market. China appears to have been locked into this convention for centuries, notwithstanding recognition of the harmful consequences of the practice. Despite this, the practice vanished in a generation. Mackie cites data showing, for example, that in Tinghsien, 99% of the women were footbound in 1889, 94% in 1899 and virtually none in 1919. This dramatic shift is easily understood as a rapid shift from an inferior to a superior equilibrium, a norm cascade as we have described it.

What accounts for the change? Local missionaries in China established the first antifootbinding society in 1874. Families pledged that they would not footbind their daughters and that they would not let their sons marry the footbound. This local convention created sufficient density to make it self-sustaining—this is our norm cluster—and these clusters grew until the old convention was overrun. This is a dramatic example of the power of seeding norm clusters, but it also emphasizes that the government need not play a unique role in creating these clusters. Any number of groups can play this role, government to be sure, but so do charities and for-profit entities.

The idea of norm seeding is a low-risk strategy. If the government seeds an inefficient cluster, it will die, and little will be lost. If, though, the new norm is superior to the old norm, the artificially-created norm cluster will thrive and spread. This suggests that the government should embrace test policies or norms in particular local contexts as a way of testing whether a superior approach can take root and spread.

Even though we play almost every day during the year, the Norms are missing some basic elements of a team. We have no logo, no uniforms, no national TV contract. Most importantly, these days, sports teams are first and foremost marketing machines. Now that our team is in place, we are looking for folks who would like to hook up with the Norms, to share in the excitement of a winning team. This is a chance to step beyond being just a donor to your alma mater, a chance to be—you guessed it—an Official Sponsor of the Chicago Norms. Dean Douglas Baird awaits your call.

Paul and Theo Leffmann Professor of Commercial Law, The University of Chicago. Much of this is taken from Randall C. Picker, Simple Rules in Complex World: A Generative Approach to the Adoption of Norms, 64 U Chi L Rev 1225 (1997).

