

The Third Function of Law Is to Transform Cultural Categories

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Abstract

How does law change society? In the rational actor model, law affects behavior only by changing incentives and information—the command and coordination function of law. Under the view that humans are social animals, law is also a guidepost for social norms that regulate behavior—the expressive function of law. This paper proposes a third function of law—the schematizing function—based on cognitive research that shows that individuals cannot think without categories. Law makes possible new kinds

of exemplars, role models, and social interactions that give people prototypes that transform the categories they use, thereby reframing their options and influencing their behavior. This paper illustrates the schematizing power of law with examples from field and natural experiments. Like the one-two punch in a boxing match, the command and schematizing functions of law together can change society in situations where the command function alone would be ineffective or backfire.

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The Third Function of Law Is to Transform Cultural Categories*

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The Third Function of Law Is to Transform Cultural Categories

To categorize is to render discriminably different things equivalent, to group objects and events and people around us into classes, and to respond to them in terms of their class membership rather than their uniqueness.

Jerome Bruner, Jacqueline Goodnow, and George Austin. *A Study of Thinking* (1956)

How does law change society? In the rational actor model, law affects society only by changing individuals' incentives and information—the *command and coordination function* of law. Under the view that individuals are social animals with an innate desire to follow social norms and punish norm violators, law is also a guidepost for social norms—the *expressive function* of law (Sunstein 1996). We propose a third function of law under the view in cognitive science, psychology, and cognitive sociology that individuals are boundedly rational and cannot think without categories and other schemas, many of which are cultural.¹ The categories mediate individuals' experience of the world. Law, by making possible new kinds of social interactions, prototypes, and role models, can transform cultural categories. The categories have framing effects; they influence behavior by enabling or constraining perception, associations, and aspirations. We call this the *schematizing function* of law.

¹ A seminal paper is Markus (1977) and an overview is Zerubavel (1997).

The evolution of beliefs about how people make decisions is evident in the US judicial history of racial segregation.² In *Plessy v. Ferguson* (1896), racial hostility was treated as based on nature: “Legislation is powerless to eradicate racial instincts,” argued Justice Brown. Fifty years later, in *Brown v. Board of Education* (1954), Chief Justice Warren argued that segregation shapes individuals’ self-schemas (their sense of themselves):

To separate [Black children] from others of similar age or qualification solely because of their race generates a feeling of inferiority as to their status in the community that may affect their hearts and minds in a way unlikely ever to be undone.

Another 50 years later, Justice Breyer argued in a dissent to Chief Justice Roberts that segregation perpetuated racism:

The context here is one of racial limits that seek, not to keep the races apart, but to bring them together...segregation policies did not simply tell schoolchildren ‘where they could and could not go to school’ ...they perpetuated a caste system rooted in the institutions of slavery and 80 years of legalized subordination.³

Behavioral science research supports the views of Chief Justice Warren and Justice Breyer. Based on their experiences, communities create cultural categories. Activated cultural categories constrain (or enable) how people are able to think of themselves and others. At the stroke of a pen, law issues a command but does not change how people think, and yet law makes possible experiences and exposure that over time do exactly that.

This essay has two main arguments, an analytical one and a policy one.

² This history is reviewed in Turner (2015).

³ *Parents Involved in Community Schools v. Seattle School District No. 1* (2007).

Analytical argument

The analytical argument is informed by many fields, particularly research in psychology, sociology, and philosophy on schemas (or, equivalently, mental models). The main points are these:

1. *We cannot think without categories.*⁴ The categories we use shape perception and construal. Categories are often essentialized (Rothbart and Taylor 1992; Haslam, Rothschild, and Ernst 2000; Mahalingam 2003). Categories for living creatures influence beliefs about how it is natural and appropriate for members of the category to behave (Goffman 1967) and implicit theories about how the world works.
2. *By exposing individuals to new kinds of social situations, exemplars, and potential role models, law can in a time frame relevant to policy makers, change cultural categories and the contexts that activate them in ways that legitimize changes in legal rights.* Categories are largely defined by prototypes (Rey 1999, Smith and Medlin 1999).

⁴ The world presents the person with an infinite array of discriminable objects. Experts estimate, for example, that we can distinguish over 100,000 colors – and perhaps as many as 7 million (Calkins, 1993; Myers, 1995). Yet were we to treat each distinguishable color or object as unique we would soon be overwhelmed. “[T]he resolution of this seeming paradox—the existence of discrimination capacities which, if fully used, would make us slaves to the particular—is achieved by man’s capacity to categorize” (Bruner *et al.* 1956, 1).

Exposure to new exemplars can change the meaning of a category and the self-image of its members; law has a *schematizing function*.⁵

3. *The cultural categories learned in a society in which ascriptive groups have unequal rights promote behaviors that make group inequality persist long after the abolition of the unequal formal rights.* The historically relevant forms of thought (Berger and Luckman 1967; Boyd and Richerson 1988; Bruner 1990; Sen 1992; Nisbett and Cohen 1996; DiMaggio 1997; Nunn 2012; Hoff and Stiglitz 2010) and the accessible exemplars (Kahneman and Tversky 1973; Tversky and Kahneman 1973) conditions cultural categories.

Institutional practices constitute people into categories with particular meanings, and the categories influence how people see themselves, how they behave, and how they are treated. So pernicious and stigmatizing are some group stereotypes that they “get inside the heads” of members of the stigmatized groups and undermine their performance and their efforts to improve their lives (a survey is Hoff and Walsh 2018). Negative stereotypes impair performance in school settings (Steele and Aronson 1995; Hoff and Pandey 2006, 2014), the job application process (Linos, Reinhard, Ruda 2017), and the workplace (Davies, Spencer, Steele 2005). Some discrimination against groups is based on rational calculation (*i.e.*, statistical discrimination; see

⁵ The schematizing power of institutions is emphasized by the sociologists Berger and Luckmann (1966), Friedland and Alford (1991), and DiMaggio (1997); the anthropologist Douglas (1973, 1986); and the psychologists Bruner (1990, 58), Nisbett and Cohen (1996), and Markus and Kitayama (2010). These scholars showed that institutions influence cognition. We are indebted to their work.

List 2004), but there is evidence that does not fit well with this account and is explained better by the effect of cultural categories on attention, interpretation, and preferences (Goldin and Rouse 2000, Bertrand and Mullainathan 2004, Shayo and Zussman 2011, Alesina and La Ferrara 2014, and Bartoš *et al.* 2016).

Beyond the instrumental harms that a stigmatized identity may cause, it matters for intrinsic reasons (Anderson 1999, Wolff and De-Shalit 2013, Wolff 2014): “Lack of respect, though less aggressive than an outright insult, can take an equally wounding form. No insult is offered another person, but neither is recognition extended; he or she is not seen as a full human being whose presence matters” (Sennet 2003, 3).

Laws that are very distant from popular views can be ineffective or backfire. Kaushik Basu (2018, 57) uses the theory of games to argue that if law is enacted to try to direct a society to an outcome that could not have been an equilibrium in the absence of the law, it “is doomed to not be implemented.” Two dramatic examples are laws in India that were intended to help women but caused many women and girls to die. In colonial India, enforcement of the right of widows to inherit property from their husbands strengthened the norm of widow immolation (*sati*) (Kulkarni 2017). In the period for which data are available, 1815-1821, the enforcement of inheritance rights for widows led to an average increase per district of between 115 and 437 widow immolations (the mean number of immolations in a district was 153 where districts gave widows inheritance rights, and 25 where they did not). The group most strongly opposed to inheritance rights for widows were the Brahmins. An increase in the proportion of Brahmins in a district of one percentage point led to an average increase of between 56 and 102 in the number of widows burnt on the funeral pyre of their husbands. In modern India, legislation of equal

inheritance rights for daughters and sons has increased female foeticide, excess female infant mortality, and son-biased fertility stopping (Bhalotra, Brule, and Roy 2017; see also Rosenblum 2015). Kulkarni concluded from his work on colonial India that “egalitarianism requires egalitarians.”

Policy argument

The policy argument of this essay is that law can indirectly bring about a change in cultural categories and other schemas; in turn, this can change societies. A category is largely defined by prototypes (Rey 1999, Smith and Medlin 1999). We will show that widespread exposure to new exemplars and social patterns changes the meaning of a category. It can also change the contexts that activate particular cultural categories.

Starting from a stable system with “matched” institutions and cultural schemas (Lieberman 2002), to use law to change society requires a one-two punch, defined as “two forces combining to produce a marked effect.”⁶ The two forces are a change in rights and prohibitions (the *command and coordination function* of law) and a change in experience or exposure that creates cognitive foundations for the new rights (the *schematizing function* of law). Like the one-two punch in a boxing match, the two forces independently might have little impact but together could have a large impact.

⁶ Online *Merriam-Webster Unabridged*.

A one-two punch often requires the enactment of multiple laws, but there are exceptions. One exception is the 1993 Norwegian law that reserved four weeks of parental leave for fathers. Fathers who took the paternity leave usually did this when the child was about 10 months old, an age when a child forms attachments. The leave affected the evolution of parents' roles in the household: It increased paternal care for the children 15 years later (Cools, Fiva, Kirkeboen 2015). The Norwegian provision exercised all three functions of law: (i) the command function—firms were *required* to offer the quota of paternity leave, (ii) the expressive function—the law *expressed* as a social value that a father should bear some child care responsibility, and (iii) the schematizing function—the experience of paternity leave had a durable effect on gender roles in the household and on beliefs about what a “good father” is (gender *schemas*).

PART I: THE MECHANICS OF MENTAL MODELS

Boundedly rational people (that is, all of us) use the beliefs they absorb from experience and exposure as a ‘data structure’ to process and categorize subsequently received information. Beliefs used in this way are called *mental models* or *schemas* (Axelrod 1973, Brewer and Treyns 1981, Brewer and Nakamura 1984, and DiMaggio 1997). Bartlett (1932, 201) provides one of the earliest accounts of a schema: It is "an active organization of past reactions, or of past experiences, which must always be supposed to be operating in any well-adapted organic response." Schemas include categories, identities, and causal narratives. They give us presuppositions about how the world is and how it works. In many cases, our use of mental models to process information is automatic and subconscious (Bargh and Pratto 1986).

Categorical thinking influences how we allocate our attention and facilitates the use of concepts, identities, stereotypes, and narratives to animate our mental lives (Carey 2009). Whereas society plays no part in how the *rational actor* thinks, society plays a key part in how *humans* think: “The schematic mental structures that help us make sense of what we perceive... are usually based on intersubjective, conventionalized typifications”; we “‘see’ [the world through] *sociomental* lenses grounded in particular social environments” (Zerubavel 1997, 31; emphasis in original). Since cultural categories are persistent, the social environments of long-distant ancestors may influence how individuals perceive the world.

Suppose that institutions arbitrarily forced a group of persons (called a “race” or “caste”) into the bottom rungs of society. Later, the state formally abolished those arrangements but failed to change customs. The cultural categories that underlie the customs might persist indefinitely. North (2005, 52) argues that the “interaction of beliefs, institutions, and organizations in the total artefactual structure makes path dependence a fundamental factor in the continuity of a society.” The basic idea is not new. Tocqueville (1990 [1835], 357) wrote in *Democracy in America* that the real problem among the moderns is that of altering the customs, not the law.

Three sources of categorical thinking operate over very different time periods. Over millions of years, evolutionary processes have embedded representational capacities in humans. Over generations, sociocultural processes have created repertoires of cultural mental models. In a lifetime, a person creates idiosyncratic mental models (Carey 2009, 447-448; Zerubavel 1997). The focus of this essay is on the sociocultural space, where “the social order operat[es] on individuals’ minds.... Institutions have [a hold] on our processes of classifying and recognizing”

(Douglas 1986). Repertoires of categories and other concepts evolve in response to the social patterns and exemplars to which social groups are exposed (Smith and Medin 1999) and are transmitted across generations.

In contrast to the rational actor, humans do not make judgments on the basis of a concatenation of small pieces of information, but rather with respect to how the information fits within the categories and other mental models in their minds: “[P]eople simplify reality by storing knowledge at a molar, inclusive level rather than squirreling away, one-by-one, all the original individual experiences in their raw forms, which would be pure data-driven processing” (Fiske and Taylor 2008, 93).

Recognition of the influence of cultural mental models on cognition sheds new light on the domain of choice. In standard economics, actions are a function of incentives and endowments; and preferences are treated as given, not endogenous:

$$\text{Actions} = f(\text{incentives, endowments}). \quad (1)$$

Behavioral economics introduces two additional sets of variables: *(i)* the context of decision-making (what is salient or cued) and *(ii)* mental models for processing information, which vary across individuals because they differ in experience and exposure. A boundedly rational individual does not perceive his full set of opportunities and cannot imagine his full set of possible lives. In a given context, the subset of things he perceives and considers depends on the mental models that are activated. The framing of the options also influences preferences in the moment of decision. Taking into account the additional variables that influence behavior extends the function to a broader set of observables:

$$\text{Actions} = g(\text{incentives, endowments, context, experience and exposure}). \quad (2)$$

Laboratory experiments illustrate the value of extending equation (1) in this way. In the prisoner's dilemma game (PD), a player has a choice between generously cooperating with others or acting selfishly. In a PD experiment with US college students, half the subjects were told that they were playing the "Wall Street Game," and the other half were told that they were playing the "Community Game" (Lieberman, Samuels, and Ross 2004). Sixty-seven percent of the players cooperated when they were told they were playing the "Community Game," but only 33 percent cooperated when they were told they were playing the "Wall Street Game."

A recent experiment in Germany reveals that experience also has a substantial effect on preferences (Kosse, Deckers, Pinger, Schildberg-Horisch, and Falk, 2019). The subjects in the field experiment were disadvantaged children in Germany. The experiment provided some of the children with a volunteer mentor for one year to give the child the experience of "an unrelated and highly prosocial attachment figure taking responsibility and devoting effort and time with him/her." Two years after the program ended, laboratory experiments that reveal prosocial preferences (for example, the dictator game, discussed in Part II) showed a significant increase in prosociality in the treatment group relative to the control group.

In equation (2) we included as an independent variable "experience and exposure" rather than mental models, since policy can control the former but not the latter. Policy only indirectly influences the repertoire of mental models. A randomly assigned roommate in college (Boisjoly et al. 2006), success in the application of a citizen of Pakistan for a visa to travel to the Hajj (Clingingsmith, Khwaja, and Kremer 2009), and emissions of Globo soap operas in one's municipality in Brazil (La Ferrara, Chong, and Duryea 2012) exposed individuals or

communities to new people or fictional characters, who influenced their judgments of what was acceptable and desirable. But policy did not control the schemas that individuals created or used.

Recognizing that perception and preferences are influenced by the categories in people's heads greatly expands the set of equilibrium outcomes in an economy. "[L]arge-scale social change may be caused by large-scale, more-or-less simultaneous frame switches by many interdependent actors," the sociologist Paul DiMaggio (1997, 280) argues. The remainder of this part of our essay uses two examples to demonstrate the explanatory power that mental models can have. Part II of our essay illustrates the power of law and policy to change cultural categories.

Example 1. Mental models of gender produce inequality in a laboratory game

In industry and academia, there is a low proportion of women at the top ranks, and a high proportion of women at the lower ranks. One factor contributing to this polarization is the way women and men allocate their on-the-job time between tasks that affect career advancement and tasks that do not. For example, in for-profit firms, high-promotability tasks are revenue-generating; low-promotability tasks include orienting new employees and organizing a Christmas party. In universities that emphasize research, high-promotability tasks are research-related and low-promotability tasks are advising undergraduates. Many people feel a sense of obligation to spend some time on tasks that help their organization at the cost of advancing their careers but, as Babcock *et al.* (2017) show, in US industry and academia it is women who disproportionately do the tasks with low promotability.

Why? To investigate this, Babcock *et al.* invented a game. The game is simple. The participants in each experimental session (US college students) are seated in one large room, each with his or her own computer, and play the game for 10 rounds. At the beginning of each round, the players in a session are randomly divided into new three-person groups. Interactions are anonymous and one-shot. Every player is subject to the same rules. A player can volunteer to “invest.” As soon as one group member volunteers or two minutes have elapsed (whichever came first), the round ends. Table 1 shows the payoffs.

Table 1. Payoffs per round in the volunteer-to-invest game

	If no one volunteers to invest	If someone, for example, Person A, volunteers to invest
Person A	\$1	\$1.25
Person B	\$1	\$2
Person C	\$1	\$2

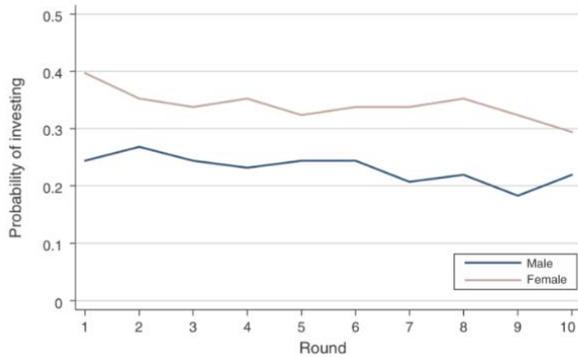
A player’s investment increases the payoff of every member of the group, but by a lesser amount to the investor than the non-investors. Players thus have a material interest to volunteer to invest for the low-rewarded task only if they believe that the other two players in the group will not volunteer to invest.

Nearly every player in every round waited to see if *someone else* in the group would volunteer. Most investments were made in the last two seconds of a round.

The results in mixed-gender sessions (which were about half men and half women) were that the women volunteered almost 50 percent more often than the men. Figure 1 shows that in

every round, the probability among women that someone invested was substantially greater than the probability among men.

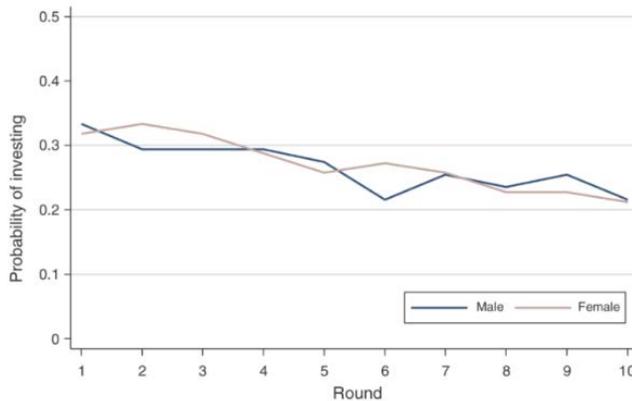
Figure 1. In mixed-gender sessions, females volunteer more than males for the low-rewarded task



Source: Babcock *et al.* 2017

Does the gender difference in behavior reflect differences in traits? Should one conclude from these results that women are nicer than men? No. When the experiment was run in single-gender sessions, so that participants knew that they were grouped only with members of their own sex, men and women were equally likely to volunteer to invest (see Figure 2):

Figure 2. In single-gender sessions, there are no gender differences in the probability of volunteering for the low-rewarded task



Source: Babcock *et al.* 2017

Since no gender difference exists between the single-gender groups, the gender gap in the mixed-gender sessions cannot be driven by gender differences in generosity. Neither do expectations of social sanctions explain the result, since the game is one-shot.⁷ What can explain the results are cultural categories and the social norms embedded in them. One possible explanation is that both men and women expect women to volunteer for the low payoff. The convergence of expectations leads them to coordinate on an outcome that reproduces traditional gender inequality. Another possible explanation is that women *want* to conform to gender norms by taking the low-rewarded task. “The social meaning of a woman’s refusal may be a refusal to engage in her appropriate gender role... prevailing norms help constitute inequality,” as Sunstein (1996, 2043) notes in the context of the gender division of domestic work.

This experiment illustrates in a bare-bones way a situation that likely prevails throughout industry and academia. It shows that gender-equal rules do not alone suffice to provide equality of opportunity to men and women. It is also necessary to change mindsets.

⁷ If a game is not one-shot, impartial formal rules are no guarantee of gender equality because individuals may impose informal sanctions in later interactions. An experiment by Gottlieb (2016) is illustrative. Provision of a civics course to the population in some localities in Mali was designed to increase participation in civic life, particularly by women. In fact, it *increased* the participation of men in civic life and *decreased* that of women. The civic course increased social awareness of the importance of civic participation, which meant in their culture that this was “a man’s job.” Male relatives and village elders sanctioned women who engaged in civic activity, which decreased their engagement. As one man in Mali said, “Women have nothing to do with civic or political activities ... they should only busy themselves with taking care of their home—that’s their place” (p. 102).

Example 2. Narratives of the alleged crimes of Blacks were a weapon of the US Southern elite after the Civil War

If a law is enacted that gives rights to an out-group at the expense of an in-group, often the latter will not be passive. If it is well-organized, it is likely to fight back. One strategy it may use is to spread hatred against the out-group. This entails a transformation of cultural categories. The history of racism after the US Civil War is a harsh example.

Until the beginning of the 19th century, the institution of slavery was the law of the land in the US. Most slaves and most slaveholding families were in the South. Slaves provided the agricultural labor that produced much of the wealth of the Southern economy. In the mid-19th century, the US government sought to prohibit slavery in the territories that had not yet become states. This led some states in the deep South to secede, which provoked the Civil War. After the US won the war, amendments to the Constitution abolished slavery and guaranteed Black people “equal protection under the law.”

The Southern White elite staunchly opposed the extension of political rights. It pursued a strategy that made it very difficult for Black people to exercise their new rights. The Southern White elite fostered hatred of Black men with stories of the alleged murders and rapes they had committed. “Because of a ‘daily barrage of Negro atrocity stories,’ the familiar image of an inferior but not malign Black was replaced by the image of a lustful, violent, aggressive Black who had been guilty of crimes against Whites (and would commit them again, given the chance)” (Glaeser 2005, 67; see also Faust 1981). Glaeser (pp. 48, 68) shows the time series of expressions of anti-Black hatred: “hatred was low before the Civil War, rose in the Jim Crow period, and then muted after World War I.” The Southern White elite represented as simple

justice acts of terrorism against Black men who tried to exercise their rights to vote, hold office, and work for themselves (Budiansky 2008).

We draw on the theory of games to illustrate in a very simple way some factors at play. Figure 3 shows the strategy sets of two actors— the US government and the Southern elite – beside the rows and above the columns. The figure shows the utility of each player inside the cells (with the US government’s payoff coming first).

Each player chooses a strategy to maximize its utility. Whatever the Southern elite’s strategy, the US government’s best choice after the Civil War was to give equal political rights to Black men. That reflected the evolution of attitudes in the North during the course of the war and the large contribution that slaves had made in fighting the war.

The figure shows how US policy triggered a change in the strategy of the Southern White elite. Since it could not eliminate the possibility of equal rights, creating racial hostility based on the representation of Black men as evil and untrustworthy yields the Southern elite its highest payoff in this game. Comparing across columns in row 2 the elite’s payoffs shows that promoting hatred of Black people was its preferred option. The game thus predicts (i) a shift in Black stereotypes, (ii) a steep reduction in Black utility compared to their best option under equal political rights with an ideology of racial equality, and (iii) low utility in aggregate.

Achieving the US goal in Reconstruction of political racial equality would have required two kinds of intervention: the provision of equal legal rights *and also* measures to give racial equality a cognitive foundation, making it immoral to resist. Attitudes that made oppression of Black people morally repugnant to Whites might have overcome the elite’s economic self-interest. But the mental models to support such attitudes were not widely held in the South.

Providing land, access to capital, and education to the Black population –“40 acres and a mule” was US policy until the assassination of President Abraham Lincoln (Foner 1988, 69-71; Gates 2019). Such a policy would have created new prototypes of Black men and new social patterns that might have legitimized the extension of political rights.

Figure 3 A game that depicts elements of the interaction between the US government and the Southern White elite during Reconstruction

		Southern White elite		
		Promote the ideology of racial hierarchy	Promote hatred and distrust of Black people	Promote the ideology of racial equality
<u>US government during Reconstruction</u>	Do not give equal political rights to Blacks and Whites	0, 10	-1, 3	5, 0
	Give equal political rights to Blacks and Whites	5, 5	1, 8	10, 2

The Southern elite’s ability to incite hatred of Black people after the Civil War can be understood as its ability to change the meaning of race. Even many poor Whites, who would have benefitted from an increase in agricultural wages, came to hold more racist views. “The North won the Civil War,” Bryan Stevenson observed, “but the South won the narrative war” (Klein 2017). To put it another way, the South won the war over cultural categories. The new

cultural categories that incited hatred of Black people were the cultural foundation for Jim Crow laws, which were not abolished until the Civil Rights Act of 1964.

Acharya, Blackwell, and Sen (2016) show that economic factors in the immediate post-bellum period predict racial ideology in the South today. In the Southern counties that in 1860 had a *higher* proportion of slaves (and hence higher dependence on slave labor), White people are today more likely to express racial resentment and oppose affirmative action, compared to White people who live in otherwise similar counties that had *lower* population shares of slaves. Anti-Black attitudes faded earlier in areas with a lower historical dependence on slave labor, as well as in areas that recovered swiftly through agricultural mechanization from the economic shock of emancipation.

Counties with higher historical levels of slave ownership also had higher rates of Black lynchings: A 10-percentage point increase in slave ownership is associated with an increase of two lynchings per 100,000 residents. Evidence that this relationship is causal is that across counties of the US South, the suitability of the land for growing cotton predicts current levels of White racial hostility and opposition to affirmative action.

In sum, in the post-bellum period, powerful groups created new narratives and other mental models that blocked the effective extension of political and economic rights to Black people. The US government made only limited efforts to change beliefs about race that had prevailed before the Civil War or the threatening narratives about Black men that the Southern White elite constructed after the Civil War.

PART II: LAW CAN TRANSFORM CULTURAL CATEGORIES, WITH EMANCIPATORY EFFECTS

In this Part, we show that law can have emancipatory effects by transforming cultural categories. The means for doing this is to make possible new kinds of social interactions and to expose people to new exemplars and role models.

To put this function of law in context, consider first the expressive function of law. Lawrence Lessig (1995) and Cass Sunstein (1996) showed that law affects behavior beyond deterrence: Law makes a statement about what is right or wrong, and law may change agents' beliefs about what *others* approve or disapprove of. A law enforced with only a trivial fine can have a substantial impact through its effect on preferences and beliefs about what other people do and think (second-order expectations). Funk (2007) demonstrates the expressive power of laws of the cantons of Switzerland that made voting compulsory. Fines for violating the law were generally less than \$1. Swiss cantons abolished the legal obligation to vote at different points in time. Despite the negligible sanction under the law for not voting, repeal of the laws in a canton reduced voter turnout on average by 6-10 percentage points (the estimate depends on the assumptions made in the estimation).

Tankard and Paluck (2017) provide the first experimental evidence demonstrating a causal relationship between a legal decision and perceived social norms. Comparing attitudes before and after a change in a law can be misleading since passage of a law or a court decision that permits (prohibits) some action is more likely where people view the action more (less) favorably. Tankard and Paluck avoided this problem by experimentally manipulating

individuals' beliefs that the Supreme Court would legalize same-sex marriage. The results showed that a stronger belief that the Court would legalize same-sex marriage increased second-order expectations about what other people think. In 2015, the Supreme Court did legalize gay marriage. Survey evidence on perceived norms before and after the decision mirrored the experimental results.

The expressive function of law operates primarily on the external, normative order, whereas the schematizing function of law operates on the internal, cognitive order. A second difference between the two functions is that the first is a direct control and the second is indirect. The expressive function is something that government controls directly because a law states what is right and what is wrong. In contrast, the schematizing function is an indirect control; government does not control what beliefs an individual will absorb from new social patterns and what prototypes of a category will be most accessible to an individual. Figure 4 illustrates the three functions of law.

Figure 4. Three functions of law (1) *Command and coordinating function*—To define rights, duties, and prohibitions. (2) *Expressive function*—To fortify or change social norms, the *exterior, normative order*. (3) *Schematizing function*—To provide cognitive foundations of institutions and norms, the *interior, cognitive order*.



Command and
coordinating
function



Expressive
function



Schematizing
function

Cultural schemas, as noted above, can persist indefinitely. The location of pogroms in the 14th century during the Black Death predicts anti-Semitism centuries later (Voigtlander and Voth 2012). To illustrate this relationship, consider the two small German towns of Konigheim and Wertheim. They are six miles apart and had Jewish settlements before the Black Death. Konigheim did not witness a pogrom during the plague, but Wertheim did. Six centuries later, in 1928, the Nazi Party received 1.6 percent of votes in Konigheim in 1928; in Wertheim, the party received 8.1 percent.

Below, we present four examples in which law and policy gave individuals experiences and exemplars that changed cultural categories. The results were to (i) make more legitimate the extension under longstanding constitutional provisions the equality of rights of men and women, (ii) reduce discrimination against the poor, and (iii) increase the probability of upward mobility.

Political reservations for women transformed mental models of gender

Philosophers once believed that individuals associated with a concept necessary and sufficient conditions. For example, for a square the conditions are plane figure, four equal straight sides, and four right angles. This is the Classical View in the philosophy of concepts. In contrast, the modern view in philosophy is that people use prototypes and exemplars to define concepts (Rey 1999; Smith and Medin 1999). Kahneman and Tversky (1973) present many kinds of evidence that humans conceptualize in terms of prototypes and exemplars, since they are more accessible than abstract conditions.

The Constitution of India of 1950 gave men and women equal political rights, but in the following decades, few women ran for political office in local or state government. Even fewer were elected. In villages in India, it is commonly observed that “[w]omen are taught from childhood to confine themselves to household tasks and help men in the family occupation” (Dandekar 1986, 68). Villages had few exemplars of local female leaders with the exception of wives of former village heads who were elected to permit their husbands effectively to extend their terms in office.

A 1993 amendment to the Constitution of India reserved the position of village head (*pradhan*) for a woman in one-third of villages in India, randomly selected before each election. Through many measures of the impact on the state of West Bengal, Beaman *et al.* (2009, 2012) show that the political reservations reduced prejudice against women leaders and led people to see women in new ways. To evaluate prejudice against women leaders, villagers were asked to listen to speeches involving village leaders and to rank them on a scale of effectiveness. The content of the speeches was always the same, but the gender of the speaker was randomized. (This test is an example of the Goldberg paradigm.) The speeches were adapted from actual village meetings. Respondents in the control villages (without reservations for women) ranked female leaders lower than male leaders in the speeches. So too did respondents in villages with five years of exposure to a woman as head of the village council. But after seven years’ exposure, men’s bias against women leaders vanished.

A second measure was Implicit Association Tests (IATs), which ask respondents to categorize a series of terms. Scores depend on accuracy and speed. One test used the following pairs of categories: man or woman, leadership activities or domestic tasks. An individual would

categorize each term into the left or right column on a computer monitor. Sometimes the categories would be grouped congruently with gender stereotypes—

Woman	Man
Domestic tasks	Leadership activities

and sometimes incongruently:

Woman	Man
Leadership activities	Domestic tasks

The difference in accuracy and speed between the two conditions is a measure of the strength of the stereotype. Exposure to female leaders through reservations weakened the stereotype. That is, it increased the ability of men to associate women with leadership activities.

A third measure to evaluate the impact of political reservations for women was villagers' evaluation of the *pradhan* of their own villages. For villagers who were exposed for the *first* time to a woman *pradhan*, evaluations were less favorable than evaluations by villagers with a male *pradhan*. But for villagers exposed for the second time to a woman *pradhan*, evaluations of the woman *pradhan* were no less favorable than evaluations of a male *pradhan*. This finding is consistent with the implication of the Goldberg and IAT experiments— seven years of exposure to a woman *pradhan* had changed villagers' perceptions of women as leaders. But it does not prove that, since the second-term women could have been more qualified than the first-term women.

The strongest evidence that exposure to women *pradhans* changed cultural categories in a way that reduced the cultural barriers to women to exercise their legal right to hold political office is that in free elections following a period of political reservations, women were more likely to run for office and female candidates were more likely to win. The rational actor model

can explain this, but it cannot explain the results of the Implicit Association Test (since for the rational actor, thinking entails no costs). An alternative theory that can explain both sets of results is that individuals think with cultural categories, and exposure to women leaders changed individuals' understandings of what a "woman" and a "leader" are. People have vivid pictures of what a category of person is like; the pictures organize their understandings (Swidler 2001, 36 and note 10).

The philosopher Georges Rey argues that "what competent users of a concept know are typicalities.... The necessary and sufficient conditions of the Classical View simply do not appear to play a role in people's actual acts of categorization" (1999, 281). Individuals rely heavily on stereotypical information. Stereotypes exaggerate small differences between groups.⁸ The evidence suggests that in India, two rounds of political reservations gave villagers sufficient exposure to local women leaders to change the concepts of "good leader" and "woman." In particular, a good leader can be a woman.

Concepts influence preferences. If cultural categories of women change, preferences of females and attitudes towards females are also likely to change. Beaman *et al.* (2012) show that they did. Compared to villages without a politically reserved woman leader, seven years' exposure to reserved women leaders caused teenage girls to be less likely to want to become a housewife, less likely to want their in-laws to determine their occupation, more likely to want to put off marriage till after the age of 18, and more likely to want a job that required more

⁸Bordalo *et al.* (2016) demonstrate this experimentally.

education. Similar changes in the parents' aspirations appear to translate into changes in how parents treated their children. It reduced slightly the gender gap in the amount of time that teenage sons and daughters spent on housework. These changes are interpreted as changes in preferences, not opportunities, since the evidence suggests that the reservations did not affect the educational and labor market opportunities of females.

The 1993 amendment to the Constitution of India reserved for women in *all* villages one-third of the positions in the village council, which governs the village. Different states of India began applying the law in different years, which facilitates identification of its impact. Iyer *et al.* (2012) find a large upward trend in *registered* crimes against women after a state applied the new law, and yet no evidence of an increase in *actual* crimes against women. Evidence from many sources supports the conclusion that the increase in registered crimes was due largely to an increase in the number of female victims of crimes willing to report the crimes to the police, and an increase in the number of police officers willing to record the crimes. In the long run, the increase in reported crime should provide equal legal deterrence to crimes against men and women.

The evidence on the impact of political reservations for women suggests that it changed village culture. The change in culture permitted women to take advantage of their guarantee under India's Constitution to the equal protection of the laws. This effect of political reservations on culture did not, however, generalize to the Scheduled Castes (the former Untouchables). India's constitution abolished untouchability ("its practice in any form is forbidden"), and the same constitutional amendment that created political reservations for women also created political reservations for Scheduled Castes (SCs). There is not—at least not

yet—any evidence that SC political reservations affected the meaning of being low caste for most Indians. The evidence so far available shows that the presence of a reserved SC *pradhan* induced a backlash from the high castes in North India. Priyanka Pandey (2005) visited public schools in North India at random times. In villages with an SC-reserved *pradhan*, she found that high-caste public school teachers stole more of the scholarship money from SC students and were more often absent. The mean level of student achievement decreased. A possible interpretation is that the law triggered a backlash by the high-caste teachers—they tried to put SCs “in their place.”

A question on India’s Rural Economic and Development Survey of 2006 is: “Have you, or any member of your family, been prevented from entering any street within the village because of your caste now?” Victoire Girard (2018) studied the impact of five years of SC reservation on discrimination, as measured by the responses to this question. In 2006, 45 percent of all SC respondents said Yes to this question. The survey results show that during their tenure as village leaders, SC reservations reduced caste-based discrimination against SCs by 10 percentage points. However, the effect did not persist after the SC reservation ended.

SCs in India are deeply stigmatized. For many centuries and even in many villages today, the isolation between SCs and upper castes has been extreme. Starting from an extreme position, it is perhaps not surprising that, at least based on the information we have now, political reservations for SCs did not create meaningful change in the cultural category SC. We have argued that two kinds of measures (two “punches”) may be needed for law to bring about social change. But there is no assurance that a second punch, by providing new kinds of exemplars,

will be successful in changing cultural categories. Indeed, it could trigger another backlash. The process of using law to bring about societal change can be long.

Desegregation of elite private schools transformed wealthy children's mental models of poor children

An in-group's limited understanding of an out-group is a factor that drives discrimination (Allport 1954; Pettigrew and Tropp, 2006; but see Enos (2014) for a different finding). Gautam Rao (2009) shows that interactions in a cooperative context between rich and poor students in New Delhi elite private schools reduced rich students' discrimination against poor children and made the rich students more generous.⁹

The Delhi government leases land to many private schools in perpetuity at highly subsidized rates. In exchange, the law mandates that the schools serve "weaker sections" of society. The law was not enforced until a Delhi High Court ordered almost 400 private schools to reserve one-fifth of their seats for students from poor households (with partial compensation

⁹ Rao also evaluated the impact on academic achievement by the rich students. He conducted tests of learning in English, Hindi, and math. He finds marginally significant decreases in rich students' English language scores and no effect on Hindi, math, or a combined index over all subjects. The increase in rich students' understanding and empathy for poor children thus came at a very low cost in academic achievement.

provided by the state). The decision required the schools to admit a random selection of applicants from poor households and to integrate the scholarship students into the classes of the non-scholarship students. Beginning in 2007, rich students (typically from above the 95th percentile of the consumption distribution in Delhi) shared classes with students who were on average, at the 25th percentile of the distribution.

In Delhi, most children enter school at the age of 4 and remain in the same school through the higher grades. The court order applied only to new admissions of children. Beginning in either 2007 or 2008, depending on the school, cohorts of students in the affected schools were made up of 20 percent poor students. By using controls for fixed differences among the schools to which the court order applied, Rao identifies the impact of desegregation (the “treatment”).

A sequence of activities and games permitted Rao to compare the behavior of treated and untreated students. Students at the elite schools were invited to participate in weekend activities to help fundraise for a charity serving disadvantaged children. Treated students were 10 percent more likely to volunteer than non-treated students.

Rao had the children play dictator games. This is a game that economists use to measure generosity towards anonymous others. In a dictator game, there are two players—a dictator and a recipient. The dictator is given an endowment (in this case, it was \$0.20, which is 10 Indian rupees). The dictator has to decide how to split the endowment between himself and the recipient. Treated students shared 45 percent more of their endowment than non-treated students.

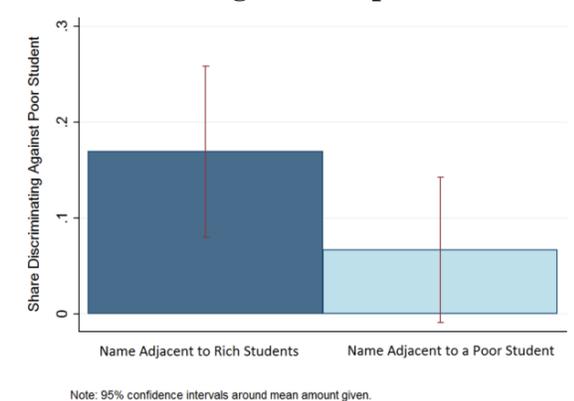
To study discrimination, Rao created a relay race with prize money. Before the experiment began, students (whom we will call “team leaders”) watched each child run a series of one-on-one sprints, which revealed how fast a child could run. Then the team leaders, who were not going to run themselves, chose the runners whom they wanted on their team. Among children whom they could recruit, if a poor child was a faster runner than a wealthy child, the leader faced a trade-off: If he chose the fast but poor child, the likelihood of winning a prize increased, but he might have less fun interacting with this child than with an alternative child. If he chose the slow but rich child, the likelihood of winning the prize declined, but he might have more fun interacting socially with someone who was in an income class similar to his own.

The treatment reduced discrimination. Exposure to poor students at school reduced by half the proportion of wealthy students who discriminated against poor children. Among “untreated” wealthy students, 23 percent discriminated against poor children: They would select a wealthy child when a poor child had shown himself in the first-round race to be faster. In Figure 5, we identify the mechanism that led rich students with poor classmates to discriminate less.

The private schools form “study groups” of 2-4 students to work cooperatively to solve problems in math, reading, and crafts. In some schools, the groups are formed by clustering names that appear together in the alphabetical list of a class; that is, Aarav would be grouped with Aditay and Arjun. This makes the grouping of a rich child with a poor child a quasi-natural experiment; it depends on the accident of how closely their names appear on the alphabetically

ordered list.¹⁰ For schools that use this alphabetical method to form student groups, Rao contrasted the behavior of the treated rich students whose names are adjacent to only rich students' names with rich students whose names are adjacent to poor students' names. Figure 5 compares the level of discrimination of wealthy students with and without a name adjacent to poor students. The figure shows that it was the close interaction provided by being in a study group with a poor student that caused the large change in discrimination. Wealthy students in study groups made up of only wealthy students were more than twice as likely to discriminate as wealthy students in study groups with poor students.

Figure 5. Interaction of wealthy students with poor students in study groups reduces discrimination against the poor



Source: Rao (2019)

¹⁰ Except if wealthy and poor people with different traits give their children names with systematically different starting letters, with the result that some fair-minded and generous wealthy children are more likely to have an initial letter in their first name as the initial letter of a poor child. This is improbable.

A short-term cash transfer program had sustained effects on investment in children

Poverty affects the qualities that others believe a person has, and the experience of poverty affects how an individual perceives himself (Fell and Hewstone 2015). Many Americans hold a stereotype that the poor are low in competence and warmth (Fiske et al. 2002), and it can lead them to treat poor people with contempt (Cuddy, Fiske, and Glick 2007). The self-schemas of the poor can make them feel stigma and shame. In a global survey of people living in poverty, respondents emphasized the humiliations:

One deeply felt deprivation is not being able to do what is customary in the society ... not being able to entertain visitors or enjoy social life ... shame from not having toilets for visitors, or money to buy a coffin for burying a relative ... In Etropole, Bulgaria 'people who cannot afford warm clothes for the winter go to work. Then they come back and stay at home under a pile of blankets, shivering with cold. They don't go out. They are ashamed to meet other people. If they run into a friend and are invited for a drink, they must refuse. So they would rather not go out at all' (Narayan et al. 2000, 38).

Shame is associated with depleted self-efficacy (Baldwin, Baldwin, and Ewald 2006). The psychological dimensions of poverty make it more challenging for the poor to improve their lot.

Exposure to high-achieving role models can sometimes help people develop self-efficacy (Bandura 1997) and increase their productivity (Henrich and Broesch 2011). But poverty tends to put such role models out of reach, since many residential neighborhoods and social networks are income-segregated. As a result, poor people often naturalize the situation they are in (Dalton et al., 2016; Macours and Vakis, 2014; Tanguy et al., 2014; Duflo, 2012; Ray, 2006; Appadurai, 2004). Then they do not aspire to change it.

Aspirations are conceptualized as both a preference and a capacity (Appadurai 2004; Duflo 2017). Aspirations depend on the social reference points that individuals set, which influence their expectations (Dalton et al. 2016).¹¹ Vicariously experiencing upward mobility of social referents who are perceived to be like oneself raises the capacity to aspire. Inequality that is so high that society is polarized by class—most people are either poor or well-off and few are middle income—reduces the access of the poor to networks with slightly better-off peers. This can lower the aspirations of the poor and the effort they make to escape poverty, which can entrench the unequal income distribution (Genicot and Ray 2017).

In poor communes in Nicaragua, a conditional cash transfer program raised aspirations by bringing poor individuals into regular contact with upwardly mobile peers. In 2006, the Ministry of the Family in the Government of Nicaragua implemented a one-year conditional cash transfer program (CCT) to help poor people cope with financial strain and promote upward mobility. It targeted six municipalities in a region that was plagued by drought. By lottery, it divided the 106 communities within the municipalities into a treatment and a control group (56 treatment, 50 control). All poor households in the treatment communities were eligible to receive the cash transfer. To identify poor households, the government conducted a means test. Ninety percent of all households (about 3,000 households) were eligible. The cash transfer was conditional on parents' investing in their children in three ways: (1) maintaining children's

¹¹ The reference points drawn from the values, behaviors, and accomplishments of “an individual’s cognitive world will form an individual’s *aspirations window* (Ray 2006). A very low window leads to inertia, and a very high window to frustration. Aspirations and effort are jointly determined, and low aspirations and low effort can reinforce each other in a community.

primary school attendance, (2) bringing children to health services, and (3) participating in local events on topics such as nutrition practices and job skills.

In the treatment communities, the government held a public assembly to explain the logistics of the program. If there were more than 30 eligible households, multiple assemblies were arranged. During the assemblies, women were asked to volunteer for the position of *promotora* –a leadership role designed to improve information and compliance with the program. Volunteers to be *promotora* had to be approved by the assembly. Each *promotora* was assigned a group of roughly 10 beneficiaries living close to her. At the end of each assembly, all the beneficiaries – including the *promotoras* – participated in a second lottery to determine who would get additional support. There were two additional types of support: (i) vocational training or (ii) a \$200 lump-sum grant conditional on the individual’s writing a business plan and investing the \$200 in her own business^{12,13} (Macours, Premand, and Vakis 2012). The authors compared the pure control (the 50 communities that received no treatment), the groups that received the cash transfers but did not receive the productive investment grant, and the groups that received the productive investment grant as well as the cash transfers.

The design of the study enabled the researchers to experimentally assess second-order effects of the packages that leaders (including the *promotoras*) received -- that is, the effect of

¹² For instance, an investment for a seamstress might be a sewing machine.

¹³ The financial support was substantial: The total of the transfers under the CCT was almost one-fifth of average household income. The investment grant was more than one-third of average annual household income.

village leaders' treatment status on the non-leader beneficiaries).¹⁴ Just like the regular beneficiaries, the *promotoras* had a one-third chance of receiving the investment grant. Since a typical assembly had four leaders, there was substantial variation across assemblies in the share of leaders that received the largest package. (This was not the case for non-leaders, where approximately a third of the beneficiaries in all assemblies got the largest package.)

Understanding the second-order effects of the leaders' benefit packages is important because the *promotoras* played a central role in the program. Interviews conducted during and after the program found that the *promotoras* took ownership of the goals and messages of the project and encouraged the other beneficiaries to invest in their children's nutrition and education. Leaders had on average five years of education, beneficiaries had only three. For the leaders who received the productive investment grant, the higher education levels were likely to help them manage their new, non-agricultural activities.

The impact evaluation of the program two years after it had ended gives evidence that the leaders served not just as communicators during the one-year program, but also as powerful role models for the other beneficiaries after it had ended (see Table 2). Households exposed to the leaders who received the investment grant invested more in their children and had higher expectations and aspirations for their children. In assemblies where all of the leaders had received the investment grant, school expenditures increased by 49 percent and school absences declined by 21 percent. The children of beneficiaries with one additional leader in their

¹⁴ In defining leaders, the authors bundled the leadership positions created by the program (the *promotoras*) and other women that held leadership positions within the community. They are not mutually exclusive, since many health coordinators and teachers volunteered to be *promotoras*.

assembly who had received the investment grant had 0.4 days fewer school absences per month and 16 percent higher school expenditures. The two-year impacts on school investment of the interactions between beneficiaries and leaders who had received the investment grant are at least as large as the impacts during the program implementation (Macours and Vakis 2016).

Table 2. Social interaction effects on human capital investments and aspirations two years after the Nicaragua CCT program ended

	Control	Intent-to-treat effect	Intent-to-treat interacted with percentage of leaders with the investment grant
<i>Human capital investments</i>			
Percent attending school (7–18-year-olds)	0.777	-0.008	0.045
Number of days absent from school (7–18-year-olds)	6.341	0.197	-1.506*
School expenditures (7–18-year-olds)	493.4	-68.8	310.9***
Share of food expenditures for vegetables and fruit	0.0581	0.001	0.022***
<i>Education and aspirations</i>			
Years of education attained by 2008	3.12	-0.171	0.7***
Desired years of education	13.29	-0.09	0.946**
Desired professional occupation	0.5	-0.015	0.115*
Expected professional occupation	0.023	0.002	0.035**

Note: This is based on intent-to-treat estimators from Table 2 of Macours and Vakis (2016). The share of leaders measures the share of female leaders with the productive investment package over all female leaders in a beneficiary's registration assembly. The data for school attendance and school expenditures are individual-level data for all children of age 7-18 years in a household. The data for food expenditures are household-level data. Excluded from the data are households with female leaders. Highest and lowest 0.5 percent of outliers in expenditures are trimmed. Robust standard errors in parentheses, corrected for clustering at the community level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Why were the effects of the CCT persistent? Two years after the program ended, the former program participants were getting no financial support from the program. It is likely that any special knowledge of the *promotoras* would already have been passed on to the group members. The authors provide evidence that *the leaders shifted the mental models of the program beneficiaries*. Exposure to leaders with the larger package raised parents' expectations that their children would move into a professional or skilled salary job. One additional such leader in the community increased parents' expectations that their children would become professionals by nearly 50 percent. An increase from *no* leaders in their neighborhood with the \$200 grant, to *all* leaders in their neighborhood with that grant, increased aspirations by more than one-fifth of a standard deviation. This suggests that mental models are not just "an overlay" on basic psychological processes, but a dimension that constitutes a person's psychology (see DiMaggio and Markus 2010).

An honorable mention awarded to a student increased his/her classmates' predicted earnings, too

Brazil has a low overall education level. It is increasing at a very slow rate. At the current rate, it would take Brazil an estimated 260 years to attain the OECD average proficiency in reading and 75 years to do that in mathematics (World Bank 2018). Can the schematizing function of law help? A government program in Brazil shows that it can. Successful role models in a student's class increase educational investments and achievements of high-ability students.

A government institute for research in mathematics runs a math competition, the Brazilian Math Olympiad in Public Schools (OBMEP). It is open to 6th- to 12th-grade students in all public schools. It is advertised in the schools and on television, and about 18 million students take part in the competition each year. Around 800,000 advance to the second round, where they are nationally ranked. The top 3,000 performers win gold, silver, and bronze medals. The 30,000 students in the next tier receive honorable mentions.¹⁵

The impact of the honorable mention is the focus of a study by Diana Moreira (2017). Two features of the award make it possible to identify the psychological effects on peers of the winners of honorable mentions. First, the participants who receive an honorable mention receive no other benefit—no monetary prize, mentoring opportunities, or training. Second, the winners' names are listed on a publicly available website and there is a strict cut-off. No information is publicly disclosed on the performance of those who do not win an award (although the researcher had this information). All 30 classmates remain together in all subjects for the school year, which increases the salience of having a classmate who is a winner. By comparing cases in which a student just barely *did* get an honorable mention with cases in which a student was just under the cut-off and so *did not* get an honorable mention, one can assess the causal impact of the receipt of the award on the recipient and on his/her classmates as if it were a natural experiment. The small differences in the scores of the narrow winners and losers can be attributed to random luck.

¹⁵ The number of awards differs across years. The figures reported here are for 2009, the first year in the sample used by Moreira (2017).

Comparing classrooms with narrow winners and narrow losers—that is, people of similar math ability who differed in luck—Moreira investigates the effect of the award on the subsequent performance of the award winners and their classmates. Not surprisingly, winning the award boosted the performance of the winners. The surprising finding is that the award had meaningful spillover effects on the classmates. The average effect on *subsequent* Math Olympiad performance of being in a class with a student awarded an honorable mention was one-fifth as large as the effects on the winner. The effect on college enrolment was large: There was an 11 percent increase in the enrolment rate of classmates in selective colleges, which would predict an increase in the annual earnings of the approximately 30 classmates (taking into account the college wage premium and the dropout rate in selective colleges) of 1170 reais. In terms of 2009 US dollars, that is \$630 per year for the classmates of one honorable mention winner.

Moreira also considers the distribution of benefits. The award affected performance margins that are relevant for students at the top of the ability distribution—performance in the Math Olympiad, performance in college admission exams, and enrollment in selective colleges. The award had no impact on margins relevant to other students—school drop-out rates, grade attainment, and low-stakes standardized test scores.

Moreira finds no support for some alternative explanations for the impact on classmates of a narrow winner compared to a narrow loser. For example, the award did not affect how students were tracked in classes: Stronger classmates were not more likely to be put into classes with the winner.

Moreira views *self-perception* as the core mechanism for the performance effects on classmates. Daily exposure to the honorable mention winner in one's class makes salient a new self-schema. It changes the high-ability classmates' belief in their own abilities to reach high goals, which promotes their educational effort and their selection of good colleges.

CONCLUSION

This essay has proposed a third function of law. Besides command/coordination and the expression of social norms, a function of law is to transform cultural categories. Law has the potential to do this by making possible new kinds of social interactions and the emergence of new kinds of prototypes. We focused particularly on laws that expand equal rights to new groups. Such laws have cognitive prerequisites. Through its schematizing function, law can help satisfy them.

The economist Deirdre McCloskey (1998) imagines a heckler defending the assumption in standard economics that the decisionmaker is the rational actor:

Give me a break: I'm not in the business of explaining all behaviour. I propose merely to explain some portion, and in many cases a large portion.

This would be a fair objection to adopting a more realistic model of human decision-making if changes in the sociocultural environment did not affect judgment and behavior or if, in the problems under consideration, judgment and preferences were more stable than material constraints. But much evidence suggests that laws that change experiences influence perception, preferences, and aspirations. The laws change how people process information. The human actor is not, as assumed in standard economics, an autonomous thinker with stable preferences

who can imagine all possible states of the world and make the best choice among all his opportunities. The human actor is a boundedly rational creature who cannot think without categories. The social patterns and environments that laws and policy create cause people to form certain categories and affect which ones are salient in a given context.

Voluntary compliance with law depends on its legitimacy. In general, a longstanding social pattern will have some legitimacy, since even oppression becomes normalized over time. This can make it difficult to use law to bring about the large societal changes needed to end social exclusion and reduce inequality. Starting from a situation in which the laws of a society are manifestations of broadly shared beliefs, a change in law that does not make sense within the cultural frames of a powerful group will appear to them as illegitimate. The meanings that members of the group give to certain categories (*e.g.*, gender, race, caste) will undermine how the new laws are used and enforced. Recall our initial example of laws in India that mandated inheritance rights for widows and daughters. In the absence of cultural beliefs in gender roles aligned with the new inheritance laws, and without non-instrumental limitations on the choice of means, the effort to help females through new law hurt them. It led to greater deaths of widows and daughters and to female foeticide.

But lawmakers do not have to wait passively for the day when outside forces change hurtful cultural categories. Lawmakers can enact provisions that may change cultural categories in the medium run by changing the environments people are exposed to. Law and policy can create environments in which new kinds of social interactions occur and new prototypes emerge that lead individuals to internalize cultural categories aligned with equality of rights across gender, race and social class. We gave examples where law and policy achieved this. We also

gave examples where changes in the legal superstructure that did not match cultural categories generated a backlash; a powerful group shifted the categories in ways that impeded long-run societal change.

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