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Behavioral Economics and Social Exclusion

Can Interventions Overcome Prejudice?

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Abstract

Behavioral economics recognizes that mental models—intuitive sets of ideas about how things work—can bias an individual's perceptions of himself and the world. By representing an ascriptive category of people as unworthy, a mental model can foster unjust social exclusion of, for example, a race, gender, caste, or class. Since the representation is a social construction, shouldn't society be able to control it? But how? This paper considers three interventions that have had some success in developing countries: (1) *Group deliberation* in Senegal challenged the traditional mental model of female genital cutting and contributed to the abandonment of the practice; (2) *political reservations for women and low castes* in India improved the way men perceived women, the way parents perceived their daughters, and the way women perceived themselves, but have not generally had positive effects on the low castes; and (3) *reductions in the salience of identity* closed performance gaps between dominant and stigmatized groups in experiments in India and China. Spoiled collective identities need to be changed or made less prominent in order to overcome social exclusion.

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Behavioral Economics and Social Exclusion
Can Interventions Overcome Prejudice?*

Karla Hoff‡

> Human beings can live, and human liberty can exist, only within a system of norms, meanings, and roles; but in any particular form, these things can impose severe restrictions on well-being and autonomy.
>
> Cass Sunstein (1996, 911)

In many societies, broad segments of the population are barred from full human rights and full participation in society: they are "socially excluded" (World Bank 2013). Social scientists seek to understand the mechanisms by which social exclusion occurs in order to determine how it can be mitigated. Rational actor models assume that individuals see all their options objectively, reason without bias, know what is in their self-interest, and act accordingly. Thus the dismantling of exploitative structures and formal barriers that certain groups face in markets, education, and neighborhoods are "all" that is required to end social exclusion. In contrast, behavioral economics recognizes that people are not always rational. It brings in insights from psychology and sociology that institutions have a "schematizing power" (Bruner 1990, 58; DiMaggio 1997, 271). Mental models that people absorb from past institutions can distort perceptions in ways that reproduce social exclusion long after the formal barriers have been removed. Spoiled collective identities need to be repaired to overcome social exclusion.

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Consider, for instance, discrimination against blacks in the United States. The rational phenomenon of "statistical discrimination" occurs when accurate, group-level estimates of difficult-to-observe characteristics—such as productivity, faithfulness, or the quality of leadership—provide information in assessing individuals' traits. An irrational phenomenon occurs when despite the facts, a social group is considered unworthy. A legacy of American slavery is a modern-day "spoiled collective identity" for African Americans that perpetuates systematic disadvantage (Loury 2002, 60-61). When résumés with equal qualifications are submitted in job applications, candidates with names associated with African Americans are less likely than candidates with names associated with whites to be viewed as qualified (Bertrand and Mullainathan 2003). When actual people present themselves to apply for low-wage jobs, African American applicants *without* criminal record are offered jobs at a rate that is not significantly higher than the hiring rate for white applicants with identical résumés but *with* criminal records (Pager, Western, and Bonkowski 2009). Jail sentences for vehicular manslaughter are shorter when an African American is killed than when a white is killed. Since the race of the victim may be random, the shorter jail sentences can be interpreted as a racial bias (Glaeser, Sacerdote, and Scheinkman 1996). When Prohibition produced high incarceration rates for whites, many people viewed the law as harmful, leading the United States to repeal Prohibition (Kyvig 1979). But when current U.S. laws against drug use produce high incarceration rates for African Americans, many people view the outcomes as consistent with the spoiled identity of African American, and the laws are little changed.

Human mental processing power is much more limited than rational actor models assume. Real individuals rely on automatic thinking and mental shortcuts for much thinking and decision making. Potentially thousands of details could be observed at any given moment, but people have limited powers of observation. Mental models – including categories, concepts, identities, causal narratives, and worldviews – are cognitive representations, often shared among members of a community or society, that affect where people direct their attention and how they structure information: the models provide default assumptions, means of categorizing perceptions, and causal narratives and associations that help individuals make sense of the world. Most of the time, people think automatically and intuitively, not deliberatively; and there is a strong link between automatic thinking and perception (Kahneman 2003, 2011; Gennaioli and

Shleifer 2010). Both involve the construction of meaning of which the perceiver is generally unaware. He imagines that he is responding objectively to the situation.

The interpersonal and intergenerational transmission of cultural models gives them life beyond the circumstances that originally gave rise to them. This can explain why past structures of power, by shaping social constructions, can have persistent effects on perception.

As Loury (2002, 37) asks, if a representation attributed to a group, such as a race, gender, caste, or class, is a human product—a social construction—then shouldn't humans be able to control it? Can humans intervene to give people new mental models or to alter which mental models are activated in a particular context, in such a way that individuals judge each other more fairly and act more fully on their opportunities? This paper considers three interventions that have had some success in developing countries. It elaborates on themes of behavioral development economics in the *World Development Report 2015* (World Bank Group 2015). But first a brief primer on cognition is in order.

A primer on cognition

Psychologists, neuroscientists, and economists have been converging on a new understanding of the brain's functioning.[1] Humans use a dual process to make decisions—fast, intuitive thinking as well as slow, controlled thinking. Psychologists describe the two modes metaphorically as two distinct systems in the mind: System 1 is the *automatic system*, and System 2 is the *deliberative system* (see Kahneman 2003). In most situations, people use automatic thinking reflexively unless provoked to check their thoughts deliberatively.

Automatic thinking makes implicit use of mental models to process information. Shared mental models may include concepts, identities, prototypes, stereotypes, causal narratives, and worldviews. The cultural understandings within an individual may rest on neuronal connections

[1]Surveys are Nisbett and Norenzayan (2002) and Camerer, Loewenstein, and Prelec (2005). Demeritt and Hoff (2015) consider the applications to behavioral development economics.

that are not easily undone. When neurons are consistently activated by co-occurring features of experience, the connections among the neurons are strengthened:

> Thereafter, if one of those neurons is activated, it will be more likely to activate another in that group…. These neural changes determine the pathways through which activation spreads until a particular response is evoked. The synaptic changes that make this happen cannot be erased like sentences from a text...
>
> [O]nce a network of strongly interconnected units has been created, it fills in ambiguous and missing information by activating all the units in an interconnected network, even those not directly stimulated by current experience..., reinforcing our original expectations… (Strauss and Quinn 1997, 90)

When the mental models that individuals use are well-adapted to the task at hand, they make individuals better off: "Time and energy are saved, rumination and doubt are reduced, and nothing important is lost" (Ross and Nisbett 1991, 77; see also Todd and Gigerenzer 2000). But mental models can lead people to make systematic mistakes. Automatic cognition is not optimizing:

> what our attention is drawn to, what we focus on, what we recall is not always what is most necessary or needed for optimal decision making. Some critical information is ignored; other—less relevant—information receives undue attention because it stands out. …By governing what we are thinking about, [automatic thinking] shapes what we conclude, even when we are thinking hard (Shleifer 2012, 10).

Automatic thinking may be at the root of the poor opportunities of particular social groups. It could help explain, for example, patterns of racial and gender discrimination in the job market if what stands out to prospective employers are not a job-seeker's qualifications, but his membership in a stigmatized group.

Even irrelevant aspects of context can affect judgments. In a test of implicit attitudes, individuals were asked whether they preferred Group 1 or Group 2, where Group 1 were well-liked African American athletes, and Group 2 were disliked white politicians (Mitchell, Nosek, and Banaji 2003). Respondents liked Group 1 more than Group 2 when the context emphasized members' *occupation*, but liked Group 2 more than Group 1 when the context emphasized members' *race*. In other words, the subjects reversed their preferences for the groups when the

context primed a different aspect of group membership. Categories influenced the valence of individual exemplars. The findings imply that automatic attitudes are contextually driven and flexible.[2]

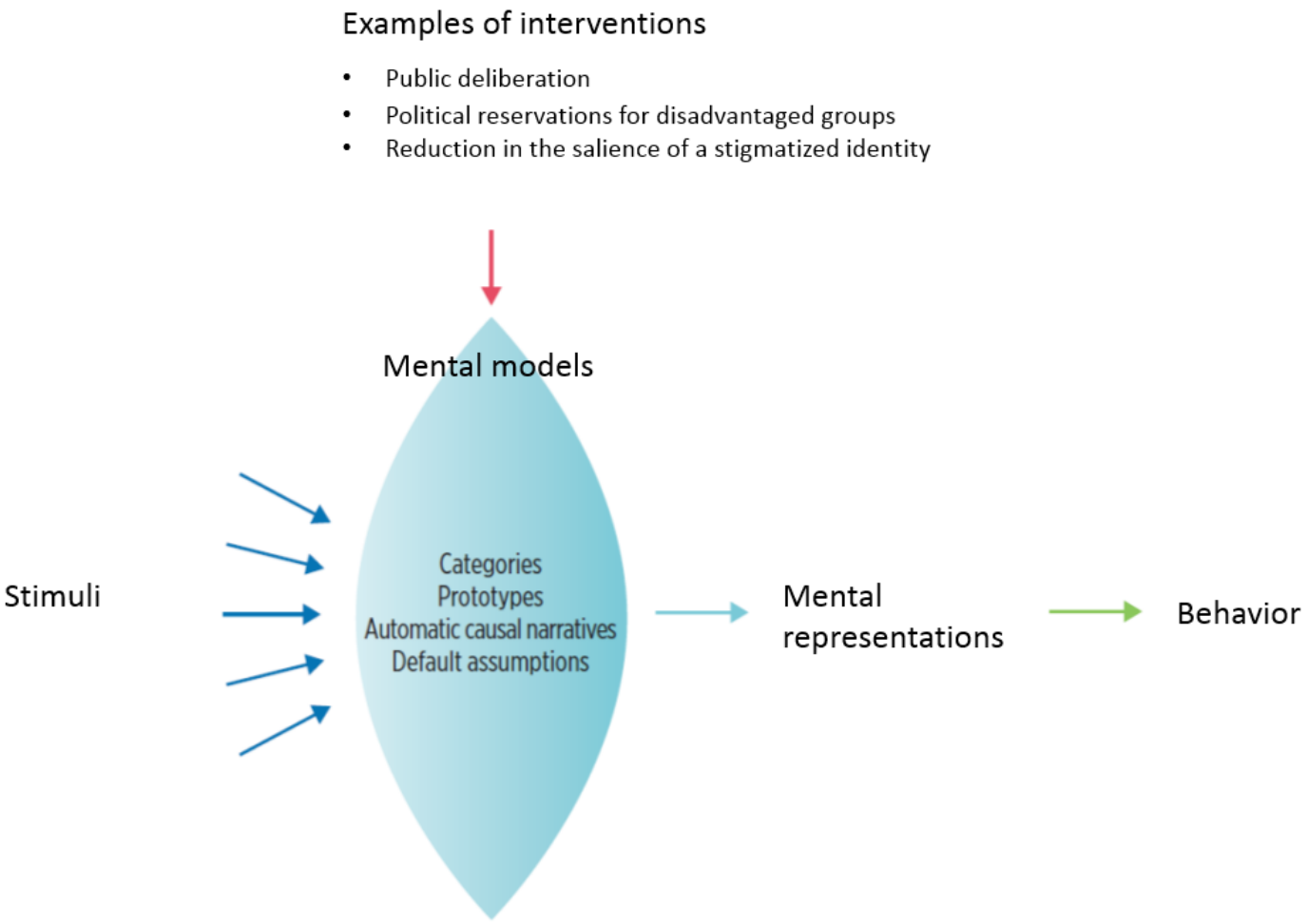
Context activates one or another mental model, which influences how individuals behave and thus the environment individuals collectively create. The environment and mental models are jointly determined.[3] Standard economics, based on rational actor models, overlooks this close interrelationship and does not take into account the role of schematized thinking (that is, thinking shaped by mental models) in the process of social change.[4] In contrast, sociologists emphasize that widely shared behaviors have a "schematizing power" and "the psychology of mental structures provides a microfoundation to the sociology of institutions" (Bruner 1990, 58): *society and its institutions rest on cognitive foundations* (DiMaggio 1997).

This paper discusses three kinds of interventions that have had some success in developing countries in reducing social exclusion. In the first two interventions, success entails creating a new mental model. In the third intervention, success entails changing the extent to which a given mental model is activated. Figure 1 represents the argument in a simple way.

[2] For other similar findings, see Lane and others, 2007.
[3] This point is related to earlier work in the rational actor model that showed how institutions and beliefs about the world can be jointly determined. For instance, Piketty (1995) showed that the belief that earnings largely reflect effort, not luck, affects political institutions (the welfare state), which can then lead to choices (low work effort) such that the belief is never refuted even if it is false. The focus here, in contrast, is on the joint determination of *mental models* and *institutions*— in particular, institutions of social exclusion. Beliefs can be biased and they play a larger role in behavioral economics than in the rational actor model. In the former but not the latter, beliefs influence information processing and can produce "equilibrium fictions"—a world created and sustained by schematic cognition (Hoff and Stiglitz 2010).
[4] Notable exceptions are Greif (2005) and North (2005).

Figure 1. Interventions to change mental models that influence behavior

People automatically use mental models to structure and interpret their experiences and guide their behavior. Interventions can create new mental models or change which model is activated in a given context. This paper focuses on the three types of interventions, shown in the figure.



Intervention 1. Group deliberation

Prior beliefs can create blinders in reasoning. Group deliberation has the capacity to improve reasoning. Such deliberation is particularly relevant in the case of reasoning about social constructions that no individual can change on his own. For example, is a mother who educates her daughter a bad or foolish parent? Is it natural for young girls to bleed extensively or does it

occur as a result of female genital cutting (FGC)? Are women leaders generally low quality? This section begins by summarizing the evidence behind the claim that beliefs can create biases in reasoning. Then it considers biased reasoning related to FGC and shows that group deliberation in Senegal reduced the biases and laid the foundation for the abandonment of female genital cutting.

In cognitive science, reasoning means an inference at the conceptual level in which a new mental representation (a *conclusion*) is consciously produced and the previously held representations (*premises*) that warrant it are also consciously entertained. An important limitation to reasoning is *confirmation bias*, the tendency to search for, interpret, and remember information in a way that supports one's initial beliefs.[5] Mercier and Sperber (2011) argue that the primary function of reasoning is to win arguments, not to improve knowledge: when individuals have some initial intuition or hypothesis, reasoning is used not to evaluate the initial intuition but to find justifications for it. An individual's beliefs shape what the individual pays attention to, what he remembers, and how he interprets a situation. An individual's beliefs can shape what information he "rationalizes away," so that initial beliefs can be difficult to dislodge even when the data would seem, objectively, to refute them. People often mistakenly believe that their use of reasoning is helping them make better decisions when, in fact, it is being guided by an irrational loyalty to initial beliefs and a tendency to discount, misinterpret, forget, or avoid information that does not support them. The irrational loyalty to one's beliefs is an asset in an argumentative context because it makes the individual good at discovering weaknesses in the arguments of others. As long as the deliberators seek the truth and there is some diversity of beliefs among them, the group can engage in a highly efficient division of cognitive labor. If one person proposes view A and another person counters with view B, each will specialize in the pros of his own view and the cons of the other's view.

Experiments reviewed by Mercier and Sperber show that deliberation among people who want to learn the truth leads to more efficient outcomes than individual thinking does: "Reasoning should produce its best results when used in argumentative contexts, most notably in

[5] Rabin and Schrag (1999) present a model of confirmation bias in which individuals with strong prior beliefs may *never* update their beliefs.

group discussions" (Mercier and Sperber, p. 61). Reasoning in groups, as long as there are differences in the intuitions of the members of a group, can serve epistemic goals. One class of experiments compares performance in group versus individual settings in tasks for which there exists a demonstrably correct answer. In the most widely used task, the percentage of correct answers under individual performance was 10 percent but rose to 80 percent under group performance. In the groups, truth wins; as soon as one participant has understood the problem, he can convince the group that his solution is correct. Often the performance of the group is better than that of its best member, as several participants may be partly wrong and partly right. Even large monetary incentives do not improve performance in these tasks. It is the group setting that elicits a high level of performance in the outcome of reasoning.

Group deliberation can provide a forum in which dissenters from a prevailing way of thinking can discuss beliefs about nature that tend to be taken for granted and therefore that many people have not examined critically. Group deliberation can also raise awareness of inconsistencies in symbolic systems that individuals, reasoning on their own, would be unlikely to notice. But group deliberation is not a panacea; it could also result in heightened commitment to a particular way of thinking and make "deviant" symbolic systems dangerous for an individual to possess. The next section describes a success case in which group thinking changed reasoning that had justified the widespread practice in Senegal of female genital cutting.

Case study: The abandonment of female genital cutting in Senegal

Beliefs play a much larger role in behavioral economics than in standard economics. In behavioral economics, beliefs shape what is perceived, which means that there is much more for groups to deliberate about than merely their own or others' self-interest. This section discusses the abandonment of female genital cutting (FGC), a form of social exclusion that is still practiced in many parts of the world. In Senegal, group deliberation changed perceptions and overcame biases in reasoning and so changed the social meanings that supported this practice. While FGC has been practiced for centuries, it was abandoned in a single generation in many parts of Senegal.

Mackie (2003) and others report several features of FGC in Senegal:

— It is very widely practiced in many communities.[6]

— It is supported and transmitted by women across generations.

— It is believed to ensure female chastity and fidelity.

— It is believed to promote women's health and fertility.

— It can promote proper marriage and family honor and enhance the status of the woman.

Biased perceptions and reasoning help to maintain the practice of FGC. Writing about complications of infibulation in Islamic northeast Africa, Hicks (1996, 73) observes:

> Women do not even correlate subsequent physical discomfort, pain, and related gynecological and obstetric problems with having been circumcised. Such physical problems are perceived as being the common lot of women. This is because the problems are, to one degree or other, prevalent among the majority of infibulated women; they are not viewed as unusual. Logically then, neither the act of infibulation nor related sequelae (unless requiring emergency treatment) are high priority issues for women in these societies.

Writing about events in a Fulani village in Senegal, Mackie (2003, 147-148) notes:

> On hearing of the causal relationship from a source they considered credible…it took (a group of local women) thirty minutes of discussion to decide that the causal claim was correct. They reviewed local history and suddenly realized that incidents of death, haemorrhaging, and infection were immediately associated with [FGC], and they broke down and wept. One woman told me that she had her daughter who had haemorrhaged seriously stand next to a girl of the same age who was taller by about a foot. "She's never been the same since the cutting," I was told. "Before she ran around all day and played and since she's been quiet and dull."

Parents want to protect their children. At the same time, a broadly shared ideal among many communities in Senegal was that parents should have their daughters cut, and that parents should marry their sons only to girls who had been cut. The nongovernmental organization Tostan organized discussions within small, fixed groups for two or three years (Cislaghi, Gillespie, and Mackie 2014). Generally, discussions within a fixed group of individuals

[6] It is not always true that a community practices FGC almost universally or not at all. In work in progress in the Sudan, Sonja Vogt, Charles Efferson, and Ernst Fehr find large variation across villages in the extent of FGC, ranging continuously from very few women to almost every woman. The determinants of FGC in the Sudan are under investigation.

occurred two or three times a week. A trained facilitator employed by Tostan led discussions in each group about human rights. For individuals in this area, a period of reflection was needed to understand FGC as a violation of rights to life, health, and bodily integrity. Mackie reports in his field notes a discussion from one group meeting:

> A Bambara group was told the story of Chinese footbinding by their nonformal education facilitator. The participants thought it was horrifying that parents would do such a thing to their children. The facilitator responded that Europeans looked on the parents who do FGM/C [female genital mutilation/cutting] in the same way. "No, no, no," the participants responded. "We do this to help our daughters." "So did the Chinese," the facilitator said. (Mackie field notes, quoted in Mackie and Lejeune 2009, 21)

Group deliberation led to a process of questioning by fostering a change in perceptions. It led to the recognition of the inconsistencies between one belief (that one should foster children's well-being) and another (that girls should be genitally cut). Once the recognition occurred, a coordination problem emerged in intermarrying communities. To solve it required organizing commitments for the collective abandonment of the practice within the community. There were thus two critical stages to abandon a strong community norm of FGC: (1) group deliberation on perceptions and beliefs and (2) coordination of actions within the intermarrying community.

Intervention 2. Political affirmative action

In the rational actor model, perceptions are objective and autonomous; each thinker is a sovereign individual. The theory cannot account for the collective, classificatory frameworks within which individuals choose. The anthropologist Mary Douglas (1986) argues that institutions teach people how to "see," how to "think," what sets of things are "similar," and what are the important categories. Institutions operate not only as patterns of activity, but also as symbolic systems (Friedland and Alford 1991). A given society may be characterized by multiple and inconsistent symbolic systems, but individuals may not be aware of the inconsistencies (Swidler 1986). A policy that temporarily mandates inclusion of a group might change the prevailing mental models and reduce social exclusion. Two case studies of policies

are presented below. The first describes a successful intervention. The second describes one that has not been successful, at least not in the short run.

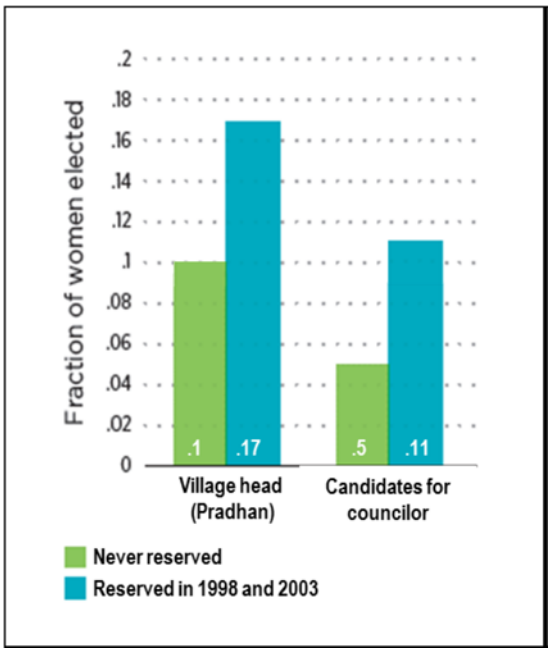
Case study of a success: The effect of political affirmative action for women in West Bengal, India

A 1992 amendment to the constitution of India made it mandatory for state governments to reserve for women in one-third of the villages the position of village head (*Pradhan*). The Indian state of West Bengal began implementing the amendment in 1998. West Bengal randomly assigned the reservation across villages.

What were the results? There is no evidence that reservations for women lowered the quality of governance, but much evidence that exposure to women *Pradhans* changed mental models in ways that reduced the social exclusion of women (Beaman and others 2009, 2012). The experience of living under a woman *Pradhan* erased the prejudice, on average, of male villagers against women leaders by many measures--an Implicit Association Test, the evaluation of political speeches, and the assessment of the quality of actual village *Pradhans*. The experience of living under a female *Pradhan* reduced the gap between parents' aspirations for sons and daughters. In villages that had women leaders, parents' expectations for their daughters were higher, and girls have gone to school longer and had somewhat fewer hours of housework. After the reservations ended in a village, women have run for political office in higher percentages and in many cases won the elections, as shown in figure 2.

The greater presence of female political representatives produced a surprising change in women's reporting of crimes against women and also in the police responsiveness to such crimes (Iyer and others 2012). This occurred even though *Pradhans* have no jurisdiction over these matters. The increased reporting by women of crimes against them appears instead to reflect a change in their perceptions of the costs—psychic and otherwise—of reporting the crimes.

Figure 2. The fraction of women elected in free elections



Source: Beaman and others (2009)

Is the success of political affirmative action for women generalizable to other socially excluded groups? The 1992 amendment to the constitution of India also made it mandatory to choose a member of a low caste (a former untouchable caste) as *Pradhan* in a fraction of the villages of each state. It might be that elevation of members of a stigmatized group to a position of power will change the exclusionary mental models only if there is some indirect tie or analogy that provides a basis for a new representation. Such analogies might have been available for women in India: They have roles of preeminence as mothers-in-law and as gods. In contrast, high-caste individuals are not likely to encounter any obvious source of analogies to roles of preeminence for low castes. The next section focuses on behaviors in public schools that became worse as a result of political reservations for the low caste as village *Pradhans*.

Case study of a failure (to date): The effect of political affirmative action for former untouchable castes in north India

For thousands of years, the low castes of India—historically called untouchables and today called Scheduled Castes (SCs)—were institutionally excluded from basic social, political, and economic rights. They were denied access to temples and schools, forced to live in segregated quarters of the villages, and denied the right to own assets and enter most occupations. In some parts of India, untouchables could not even walk through higher caste neighborhoods. After the independence of India, an end was put to the legal recognition of the rules of caste, but the social behavior of high castes is today still largely governed by the norms of the caste system.

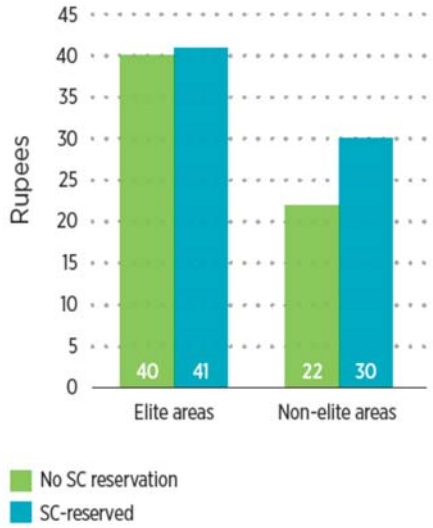
What can one expect from political affirmative action in village governments for the low castes? The research findings discussed next, based on Pandey (2005, 2010), are from a different state of India than the research findings, discussed above, on political affirmative action for women. The two sets of findings use different outcome measures. Thus the findings are not directly comparable. Nonetheless, they suggest that political affirmative action for a stigmatized group need not mitigate its social exclusion but can actually lower the quality of the public services that the group depends on.

The state of Uttar Pradesh had two distinct sets of land tenure institutions under British colonial rule: *elite control areas* (*elite areas*, for short) and *non-elite control areas* (*non-elite areas*, for short). In elite areas, the landlords were responsible for paying the land tax to the British colonial authority. The landlords had a free hand to exercise political, economic, and judicial authority over the villages. In contrast, in non-elite areas, the cultivators were responsible for paying the land tax to the British colonial power, and the authority of the landlords was much more circumscribed. The land tax was abolished after India's independence, but the legacy of elite control is still evident in the greater political presence of individuals from dominant classes in local government. Local governance and public school outcomes are worse in villages situated in regions with a history of elite control.

Pandey's evaluation of the impact of political affirmative action for SCs focuses on the impact on public schools because most SC families depend on public schools, and most high-

caste families do not.[7] Her evaluation occurred in 2002-2003--within the second election term after SC affirmative action came into effect. In this period, oversight and control over village schools began to be devolved to village governments. In many random visits to schools, Pandey collected data on teacher effort and attendance at school and on student learning outcomes. By all these measures, SC reservations lowered the quality of the public schools. Teacher effort and the performance of students declined, fees exacted by teachers increased, and less stipend money reached SC students. The negative effects were significant mainly in non-elite areas. In these areas, reservations significantly increased excess fees charged per student, from 22 to 30 rupees—see figure 3. In contrast, in elite areas, where excess fees were already 30 percent greater than in non-elite areas, reservations made no change in the level of excess fees charged per student (about 40 rupees, equivalent to one U.S. dollar and close to the daily wage for unskilled labor).

Figure 3. The effect of SC political reservations on excess fees charged to students



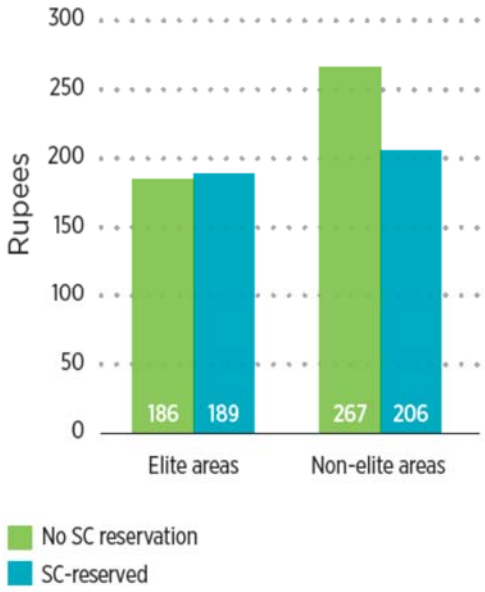
Source: Pandey 2005.

Note. Excess fees are the difference between average fees paid by students and the legally required fees.

[7] In 2002-2003, 42 percent of children in public schools were SC, while only 15 percent were high caste, even though the shares of each caste were about the same (24 percent for SC and 27 percent for high caste in the sample villages).

Figure 4 reports the scholarships paid to SC students in SC-reserved and non-reserved villages. The level of the scholarship is set by the state government, but the village teachers administer it. Like figure 3, figure 4 shows that in elite areas without the reservation, teachers were more corrupt than in non-elite areas. Scholarships paid to SC students in elite areas were only 70 percent of the level paid in non-elite areas. In elite areas, reservation again had no effect. But as before, reservations worsened corruption in non-elite areas. Scholarship payments fell on average by 23 percent in reserved, non-elite areas.

Figure 4. The effect of SC political reservations on average scholarships paid to SC students

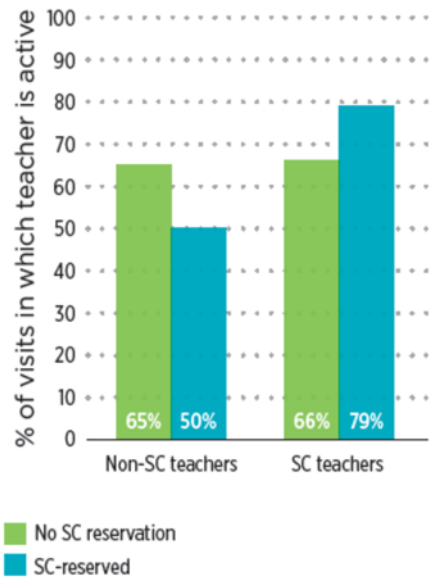


Source: Pandey 2005.

Figure 5 considers the fraction of teachers who actively teach during random visits to the schools. Again the significant effects occurred only in non-elite areas. For simplicity, the figure shows only the results for the non-elite areas and distinguishes SC from non-SC teachers. Reservations reduced teacher effort for non-SC teachers: in non-reserved areas, they were active 65 percent of the time; but in reserved areas, they were active only 50 percent of the time. In contrast, reservation increased effort by SC teachers from 66 percent to 79 percent. Regression

results, not shown here, indicate lower test scores in SC-reserved villages compared to non-SC reserved villages in non-elite areas. There is no difference due to reservation in elite areas.

Figure 5. The effect of SC political reservations on teacher effort in non-elite areas



Source: Pandey 2005.

To summarize, village governments and public schools are dysfunctional to a greater degree in elite than in non-elite areas. SC reservation is not associated with worse outcomes in elite areas, but neither is it able to reverse the poor quality of outcomes. In the non-elite areas, SC-reserved villages compared to non-reserved villages end up with worse schools and greater corruption. Worse governance is possibly due to intimidation of the SCs and their economic dependence on the high castes. With minimal land ownership, SCs commonly depend on high-caste landed households in the village for employment (Lieten and Srivastava 1999). Sixty percent of low-caste *Pradhans* report facing physical violence, threats, and manipulation of votes during their elections and believe that other village council members did not cooperate with them.

Teacher absenteeism is facilitated by a nexus between local elites and teachers who share common caste and class background. A large proportion of teachers comes from the high castes and owns land. In the sample, 83 percent of the teachers are of castes higher than SC and only

17 percent are SC. The average land area owned by a teacher is 2.44 acres, compared to only 1.81 acres for a low-caste village council head.

There is no direct evidence on perceptions to compare to the evidence in the preceding discussion of affirmative action for women. But the evidence on governance provides no reason to believe that, at least in the short run, exposure to "powerful" SCs – that is, to SC *Pradhans*—changed the perceptions that high-caste individuals held of SCs. The increase in effort by SC teachers in reserved villages is one hopeful sign, but there is insufficient evidence to explain why it occurred.

Intervention 3. Changing the salience of social identity

For interpreting a situation, individuals may have multiple mental models, including multiple social identities, and they are not necessarily consistent with each other. Which mental model an individual uses may depend on seemingly irrelevant features of the context. Thus, changes in context that would have no influence in the rational actor framework can be effective interventions.

Social identities are activated depending on (1) the individual's perception of the situation in which he finds himself and (2) the relevance he attributes to his social identity as a factor in the situation (Okamura 1981). The pioneering studies of the effect of priming identity on performance find that merely checking a box to indicate race before taking a standardized test lowers the performance of African Americans but has no effect on whites' performance (Steele and Aronson 1995, 1998). The "race prime" appears to raise the consciousness of negative stereotypes among African American students. "Stereotype threat" reduces performance: "Participants who experience stereotype threat spend more time doing fewer items less accurately" (Steele and Aronson 1998, 423).

Lab-in-the field experiments: Social identity primes in India and China

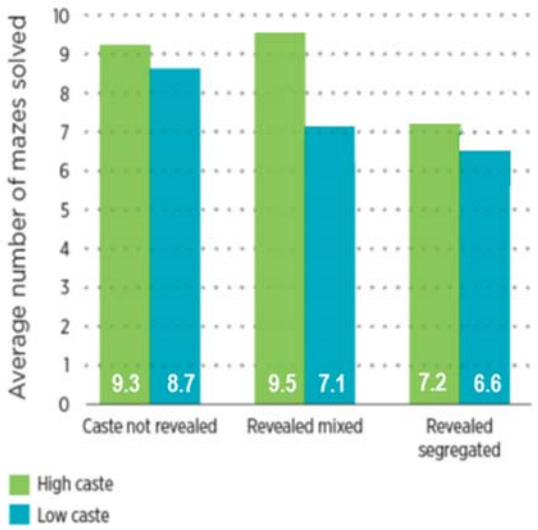
A feature of the Indian caste system that makes it well-suited to identifying the effect of social identity is that caste is fixed by birth and the meaning of caste categories is not in doubt. High-

caste individuals are traditionally considered socially and intellectually superior in all respects to low-caste individuals (Scheduled Castes, or SCs). Evidence of a new social order is today visible to every schoolchild in the measures to encourage SCs to enroll their children in school and to participate in the political process. Yet SC children are still likely to encounter the traditional order of caste and untouchability in their own experiences, in the fables they learn, and in the continued discrimination, insults, and atrocities against upwardly mobile members of low castes.

Hoff and Pandey (2006, 2014) assessed the effect on children's intellectual performance of (1) making caste identity public and (2) in addition, segregating children by caste. (Segregation of high and low castes is an obvious mark of civic privileges and disabilities (Jodhka 2002).) Participants in the experiment were junior high school boys. In groups of six, the participants were asked to solve mazes under monetary incentives. Participants were randomly assigned to one of three conditions: The control condition included three high-caste and three low-caste boys in a session but did not make caste identity public (Caste Not Revealed). The second condition also had three high-caste and three low-caste boys in a session, but caste identity was made public (Revealed Mixed). The third condition was the same as the second, except that the group of six students in the session were *only* high-caste boys or *only* low-caste boys (Revealed Segregated).

The control condition showed that low-caste boys solve mazes just as well as high-caste boys; see figure 6. However, publicly revealing caste in mixed-caste groups created a significant, 23 percent caste gap in total mazes solved in favor of the high castes, controlling for other individual variables. The low-caste boys may have felt, "I can't or don't dare to excel." Publicly revealing caste in caste-segregated classrooms—which is a marker of high-caste entitlement—depressed the performance of both high-caste and low-caste boys, and again their performance was statistically indistinguishable. If segregation evokes a sense of entitlement to the high caste, the high-caste boys may have felt, "Why try?"

Figure 6. The effect of identity primes on performance: Caste in India

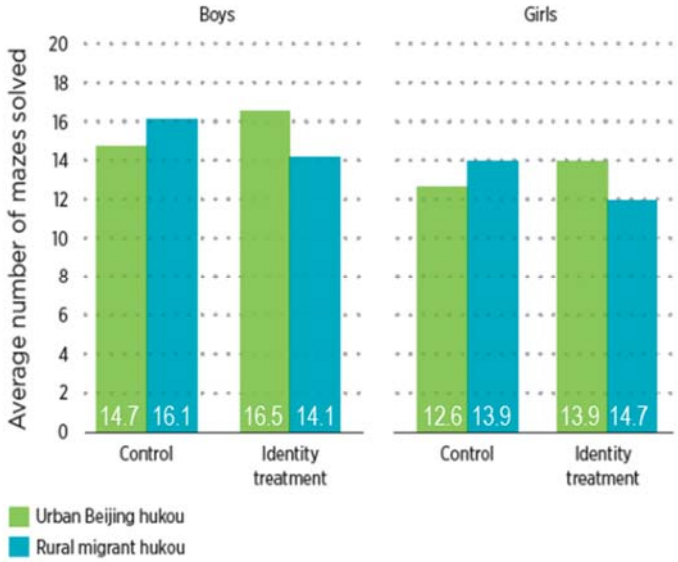


Source: Hoff and Pandey 2014.
Note: The data report the sum of mazes solved in two 15-minute rounds under piece-rate incentives. The caste gap in performance is statistically significant with 95 percent confidence in the Revealed Mixed treatment.

The experiment was replicated in China (Afridi, Li, and Ren, forthcoming), although in this experiment the identity treatment was stronger: It described the stereotype associated with the stigmatized social identity. The experimental subjects in China were elementary school children in grades 3–6 drawn from two social categories: (1) a socially privileged category who were from households legally classified as urban Beijing households, and (2) a disadvantaged category who were from households legally classified as rural non-Beijing. The household registration system in China, known as *hukou*, classifies citizens based on the birthplace of either their parents or grandparents. Those categorized as urban residents of the city in which they live are favored in housing, jobs, access to schools, and public benefits. Those who are categorized as rural migrants are disfavored in all these respects. Unlike categories of gender, caste, or class, the categories under the household registration system are a transparent administrative creation. However, they have been reinforced through four decades of differential treatment under Chinese law. Will cueing the categories in the classroom affect students' performance?

As in the study in India, in the study in China there was no significant gap between the performance of the high- and low-status groups in the control treatment, in which identity was not revealed. But making *hukou* identity salient significantly reduced the performance of the low-status category, both absolutely and relative to that of the high-status category, for both boys and girls (see figure 7). The examples from India and China illustrate the power of social constructions—caste and *hukou*—to "make up people." Performance can depend sensitively on cues to social identity that would be irrelevant under a rational actor model.

Figure 7. The effect of identity primes on performance: *Hukou* in China



Source: Afridi, Li, and Ren, forthcoming.

Note: The caste gap between boys with urban Beijing and rural migrant *hukou i*s significant with 95 percent confidence only in the Identity treatment, for both boys and girls. The declines are significant for those with rural migrant *hukou* in the Identity treatment (both for boys and girls). The treatment effects on the performance of children with urban Beijing *hukou* are not significant.

Conclusion

Beliefs play a larger role in behavioral economics than in rational actor models. Mental models shape what an individual pays attention to, how he perceives a situation and its meaning, what he remembers, and how able he is to perform. Historical institutions that

excluded individuals from human rights or participation in society on the basis of ascriptive characteristics can have persistent effects on mental models and thereby reproduce social exclusion even after the formal barriers have been abolished. Mental models can be powerful and should be targets of policy intervention when they contribute to social exclusion.

This paper discussed three types of interventions. Intervention 1—group deliberation—contributed to the abandonment of female genital cutting in Senegal. Intervention 2—political affirmative action—improved outcomes for women in India but not for the low castes, at least not in the short run by the available measures. In public schools, on which the low caste disproportionately depend, the reservation of village head for a low-caste individual actually increased corruption and high-caste teacher absenteeism and lowered student learning. Intervention 3—reducing the salience of a stigmatized identity—eliminated a performance gap between the stigmatized and dominant groups.

A behavioral intervention not discussed here are programs that mix rich and poor children. This intervention has had some success. In India, when pre-school children at the 95th percentile of income were mixed in their schools with children at the 25th percentile, the rich children became more pro-social and generous towards other children (Rao 2013). Personal interactions in school between rich and poor children also caused the rich children to discriminate less against poor children, measured by their choice of teammates in an incentivized sports contest, and led them to socialize more with poor children outside school.

This paper draws on insights from psychology, sociology, anthropology, and neuroscience that violate the rational actor model, but this is not to imply that it does not remain of central importance. Behavioral and rational actor perspectives complement each other. By highlighting the diversity of factors that perpetuate social exclusion, behavioral economics broadens the set of possible interventions to reduce it. Increasingly, welfare programs try to address both structural and behavioral factors in social exclusion.[8]

[8]See, for example, Carneiro, Galasso, and Ginja 2015.

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