The effects of social identity on aspirations and learning outcomes

A field experiment in rural India

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Abstract

This paper investigates whether identity affects aspirations, beliefs, and real outcomes. Using experimental variation to reinforce existing identity-primes in subjects' environments in rural India, I find that gender and caste primes can significantly affect long run aspirations and beliefs. To look at effects on real outcomes, I combine an education intervention, and surveys over multiple periods, to find that identity-primes do affect test scores for certain social groups. Finally, using a unique feature of the survey design, I propose an instrumental variable approach to show that larger differences between aspirations and actual ability lead to negative effects on eventual outcomes.

JEL codes: I30, J16, O12, Z13

1 INTRODUCTION

Individuals in a society almost always belong to one (or more) social group, and form a sense of *social identity* - a sense of belonging to the social world[1]. Starting with the work of Akerlof and Kranton (2000)[2], economists have started to study, both theoretically and empirically, the effects of one's identity[3] on economic preferences and behavior. Another, relatively newer strand of literature explores the role of beliefs and aspirations about one's future economic outcomes and well-being (Mullainathan, 2004; Ray, 2006). While research in the other social sciences, and social psychology in particular, have hypothesized that one's social identity may play a crucial role in the formation of one's beliefs, aspirations (about one's future outcomes) and eventual outcomes[4], economists have only recently begun to explore this idea (Beaman et al., 2012). Economic disparities between social groups have been documented for decades, some of which may partly be explained by discrimination in the labor market (Bertrand and Mullainathan, 2004). However, there is limited evidence on whether identity has a more direct, psychological effect on economic outcomes. This paper presents the first direct tests of whether social identity affects aspirations, beliefs and eventual (real) outcomes. In addition, using a unique feature in the survey design, it also provides estimates for the casual effects of having high aspirations, on eventual outcomes.

I focus on two specific forms of social identity, namely, caste and gender, and conduct a field experiment in rural India where these are the two most salient social categories in society. The experiment was conducted with approximately 1000 adolescents (and parents for a subset) across 19 schools in a rural district in India, to test whether caste and gender identity affect long run (hypothetical) and short run (both hypothetical and real) outcomes for these subjects. Benjamin et al. (2010) point out that while testing any causal effects that a specific social identity might have on behavior is problematic, social psychology gives us a way to introduce exogenous variation in the salience in one's

1. The seminal work in social psychology by Tajfel and Turner (1979), defines social identity as the portion of an individual's self-concept derived from perceived membership in a relevant social group.

2. While work related to social identity in the economics literature began with Becker's "economics of discrimination" (Becker, 1957), this literature did not start to consider its potential, direct effects on preferences and behavior until only about fifteen years ago

3. In economics, the terms "identity" and "social identity" have been used interchangeably, and I will do so as well in this paper. These two terms do however, have distinct meanings in social psychology; for a discussion, see Jasso (2002).

4. For examples of this work, see Oyserman (2008) and Oyserman and Destin (2010)

identity. This methodology introduces *primes* to make a particular social category of an individual temporarily salient, thereby moving the individual's preferences or behavior closer to his or her group's social norm[5]. I use this priming methodology, but importantly, I exploit environmental cues within the subjects' everyday environment that already exist, to prime either caste (jati[6]), or gender identity through "priming questionnaires". The region is particularly rich in visual cues in one's environment, which highlight differences across genders as well as castes[7]. The priming questionnaires used in this study consisted of questions that made subjects' caste or gender identity salient by asking (and thereby reminding) them about such features in their immediate environments, thereby simply *reinforcing these already-existing primes*. Therefore the specific question we will get closest to answering using this particular method of priming identity is: do identity-primes that already exist in one's environment affect the outcomes of interest?

Two experiments were conducted with the same sample. The design of the first experiment was similar to other work in the experimental literature on priming identity in that subjects were primed once, and their outcomes (based on hypothetical questions) were recorded soon after. For this experiment, subjects were asked about long run aspirations and beliefs related to future life outcomes. The second experiment was conducted with the same sample, and subjects were primed with respect to the same social category as that in the prior experiment. In order to look at the effect of identity on real outcomes, I focus in particular, on learning outcomes, as measured by test scores.

In order to look at effects on real outcomes, I created and implemented a learning camp to provide Math classes at school for a period of approximately ten weeks for these children, in partnership with three non-governmental organizations (NGO's). These classes formed the basis for the second experiment. The setting for this second experiment

5. All experimental work in the identity economics literature uses some form of this methodology.

6. The word jati is often used interchangeably with caste, though the latter may also refer to a broader social construct called *Varna*, which is made up of multiple communities, or sub-castes. It is well documented that caste affiliation in everyday life, and in socio-economic networks takes the form of these communities or *jatis*, rather than the broader concept of *Varna* (Kothari, 2004). For this paper, I will refer to these *jatis* as castes, and provide a description of how each of these castes was classified as "low" or "high" according to the well-known *Varna* system.

7. These cues include differences in types of traditional attire and jewelry between castes as well as genders, spatial segregation in how castes locate themselves within a village, segregation in seating arrangements between the genders as well as castes at village meetings, differences in occupations between castes and genders, and so on. These features of the everyday socio-economic life in the village play a key role in the re-enforcement and persistence of caste- and gender-based social norms (Unnithan-Kumar, 1997).

departs from the identity priming literature in a number of significant ways. First, subjects were primed and hypothetical outcomes (test score aspirations and beliefs) were recorded over multiple periods, over about ten weeks. Second, real outcomes (test scores) were also recorded over multiple periods: in the first period, subjects' beliefs and aspirations about test scores were elicited, and subjects in the identity priming treatments were also primed in this period. A test was held *several days* after this was done, while classes were held on the relevant topics in the interim. Test score realizations occurred a few days later in the next period, and subjects' beliefs and aspirations for the next test were elicited at this time. This process repeated itself over the ten weeks, and the entire experiment was conducted in a non-laboratory, field setting (as described in detail in the later sections in the paper)[8].

The experimental design was such that it allows us to separately estimate the effects of identity-primes for children, and for parents. Subjects were randomly assigned to seven equal-sized groups: four of the seven groups con- sisted of child-only subjects, and the remaining consisted of parent-child pair. Two of the child-only groups consisted of adolescents for whom gender or caste was primed, respectively. Another two groups consisted of adolescent-parent pairs, for whom gender or caste was primed, respectively, and where the parent was the primary respondent, while the child was present. The remaining groups consisted of child-only or parent-child "neutral" groups, who were asked questions orthogonal to identity in lieu of the priming questionnaire the treatment subjects were given. The last group consisted of "pure control" subjects, who were not given any type of questionnaire. So for these subjects we only have test scores, but not measures of aspirations or beliefs.

The first two sets of findings are related to the effects of priming gender and caste, using the already existing primes in subjects' environments[9]. I find that making gender salient using the gender primes that already exist in female subjects' environments, negatively

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8. The protocols and timing for this process were specifically designed to mimic the timing of outcome realizations, and beliefs and aspirations formation, in real life, where a period begins with an initial outcome realization, and the formation of aspirations and beliefs. Subsequently, the individual makes a decision to exert effort, and has an outcome realization in the next period, at which time aspirations and beliefs for the next period are formed, and so on.

9. The hypotheses tested in this paper follow the registered trial on the AEA trial registry. I do not report further heterogeneous effects in the paper even though looking at effects separately for high caste females, or low caste males, might be interesting, since other studies (Cassan, 2014; Cassan and Vandewalle, 2017; Field et al, 2010; Munshi and Rozenzweig, 2006) indicate that gender norms are often caste-specific.

affects their perceived returns to completing high school. In particular, primed female subjects report expecting about a 65 percent lower income after completion of high school relative to non-primed female subjects. There is no evidence to suggest however, that gender primed female subjects have lower aspirations or beliefs for other life outcomes, as measured by z-scores calculated using multiple aspirations and beliefs questions about long run, life outcomes that were asked. For male children, priming gender positively impacts boys' beliefs about their life outcomes, as well their beliefs about returns to completing high school. And consistent with findings from the first experiment, female children in the second, dynamic experiment, report significantly lower test score aspirations as well as beliefs. The lower aspirations and beliefs, however, do not appear to affect test scores.

For the caste primed treatments, first, I find that these primes induce subjects to state higher aspirations and beliefs for long run, life outcomes, but that there is no evidence here to suggest that low caste subjects' stated beliefs or aspirations are affected by the primes that were introduced. Consistent with this, in the second experiment, high caste subjects report higher test score aspirations, beliefs, and show significant improvements in test scores, when in the primed treatment.

I also find that while parental involvement positively affects stated aspirations and beliefs, it has no significant effects on test scores. These effects, however, are driven entirely by parents of male children.

A shortcoming in the emerging literature on aspirations is that there is currently no evidence of the causal effects of having "high" or "low" aspirations on actual outcomes. Any results of priming (or other interventions) on test scores (or other outcomes), are reduced form estimates, and it is not clear whether effects on outcomes (if any) operate through having high or low aspirations (or beliefs). Utilizing a unique feature that was incorporated into the design of the surveys used to elicit aspirations and beliefs over the multiple time periods of the second experiment, I am able to identify the impact of having very "high" aspirations on test scores. I propose an instrument using the *order* in which the beliefs and aspirations questions were asked, where this order had been randomized[10]. I find that it is indeed the case that the order has an effect and in particular, when a subject is asked the aspiration question *second*, he/she is reports a test score aspiration that is significantly higher than that for other subjects. Instrumenting the difference

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10. This had been done to ensure that any effect of being asked about beliefs or aspirations either first or second, would be controlled for in the analysis.

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between the aspiration and test score realization by whether the respondent was asked the aspiration question after the belief question, I find a 0.158 standard deviation lower test score for a one point difference between the subject's stated test score aspiration, and his/her last test score realization. This suggests that having aspirations that are higher than one's (usual) ability may have negative effects on eventual outcomes.

This paper contributes to three emerging literatures in economics. First, it contributes to the literature on identity economics that studies how people's conceptions of themselves, and of what they are supposed to do given prevailing social norms, affects their economic lives. Akerlof and Kranton (2000) was the first paper to explore this possibility by proposing a utility function that incorporates identity as a motivator for behavior, and incorporates it as an argument in the utility function. The model demonstrates how identity may affect individual interactions, and shows implications for gender discrimination in the workplace, the economics of poverty and social exclusion, and the division of labor in the household. Other theoretical work in this literature (e.g., Benabou and Tirole, 2011) has similarly modeled individuals having disutility from deviating from their relevant social group's norm. On the empirical side, gender differences have been found in competitiveness (Gneezy et al., 2003; Croson and Gneezy, 2009; Buser et al., 2014), time and risk preferences (Benjamin et al., 2010), and investment decisions (Jianakoplos and Burnasek,1998)). Studies that have used the priming methodology to study the effect of identity on behavior have reached the following broad conclusion: when an individual's social identity is made salient, she will behave differently from someone with the same identity in a treatment group, where identity was not made salient. This may be due to the desire to a social group's norms, or it might be conformance to either negative or positive stereotypes that exist about one's socila category. For instance, in an experiment conducted in rural villages in northern India, Hoff and Pandey (2006)[11] find that a boy belonging to a low caste performs worse on a test when his caste is publicly announced prior to the test, whereas a boy from the same caste and taking the same test will perform better when his caste is not made public[12].

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11. Note that this and related experiments on caste in India have focus entirely on boys. However, gender also plays a crucial role in how caste identity manifests itself. To my knowledge, my study is the first to offer evidence for all social groups (high and low castes, as well as girls and boys) in a field setting.

12. Another related paper by Rao (2014), which does not use priming, but rather investigates what happens when children from different socio-economic backgrounds are put in the same classroom in an urban setting, finds that students exhibit greater prosocial behavior when in a classroom that exposes them to interactions with classmates from a different socio-economic background.

The second emerging body of literature in economics that is most relevant to this study is that which explores the determinants of aspirations, and the role that aspirations could potentially play on eventual outcomes (for example, Bernard et al., 2014; Beaman et al., 2012; Genicot and Ray, 2012). In line with the work in the goals literature in social psychology (Heath et al., 1999) and more recent work in economics on expectations (Koszegi and Rabin (2006)), Genicot and Ray (2012) model aspirations as reference points. In their model, one's initial wealth level shapes one's aspirations for future economic outcomes, which in turn affect the incentives to invest or exert effort today. This in turn, affects wealth in the next period. Thus aspirations and income distributions evolve jointly, and it is conceivable that at very low wealth and aspiration levels, individuals may get stuck in an aspirations-based poverty trap. Similarly, someone with aspirations that are too high will revert to a lower equilibrium over time. My study links this idea to the recent work in identity economics, by testing how one's social identity, instead of one's wealth, moves one's aspirations and beliefs away from what these would have been without identity considerations[13]. Finally, using an instrument variable approach, I am able to provide evidence for negative effects of having aspirations that are too high.

This paper also contributes to the literature on how beliefs about one's own or one's child characteristics affects schooling decisions and investments in education (Jensen, 2010; Nguyen, 2008). This growing body of work explores the extent to which individuals have incorrect perceptions about the returns to education, and how interventions (for instance, through the provision of information) might de-bias these beliefs in order to increase investments and improve learning outcomes. Parents' aspirations for children may also be driven by prevailing gender norms, and parental influence prove to be a critical driving force in shaping a child's own expectations and goals, as well outcomes (Buchman and Dalton, 2002). This could occur through two broad channels. First, parents may divert resources towards or away from a particular child based on the child's gender. Second, a parent's encouraging (or discouraging) attitude towards the child that results from the salience of the child's gender identity, may affect a child's motivation and eventual outcomes. There has been no work, to my knowledge, that investigates the

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13. Relatedly, in the anthropology literature, Appadurai (2004) posits that one's social identity may play a significant role in shaping one's beliefs about one's own potential, life goals and eventual economic outcomes. He introduces the notion of the *capacity* to aspire, and argues that prevailing social norms may make certain groups of disadvantaged individuals less likely to *aspire* for future well-being, thereby leading to underinvestment and lower effort today, leading to poorer economic outcomes in future.

determinants of downward biased beliefs and poor outcomes in education. By focusing on the specific case of social identity in my experiment, I am able to test the causal role of identity in determining both adolescents' and parents' beliefs (and aspirations) about future (long run), and learning (short run) outcomes.

The results in this paper are also relevant for policy. In India, for instance, where caste and gender remain the most salient forms of social identity[14], inequality in economic well-being and human capital accumulation between the genders and castes remains to this day (Dreze and Sen, 2004; Deshpande, 2011), and the only policy tools that has been employed to try to address this problem is that of affirmative action. While affirmative action policies have indeed been shown to improve outcomes along certain dimensions (Chattopadhyay and Duflo, 2004), the findings here suggest that such polices may not be enough, since even in the presence of equal opportunities, the salience of one's social identity may lead to individuals having biased beliefs about their ability to improve their economic well-being, thereby affecting effort or investments, and eventual outcomes.

The remainder of this paper is organized as follows: Section 2 describes the design, the outcome measurements, and the experimental protocols. Section 3 reports the results for both experiments, including the instrumental variable results that investigate the effects of having high aspirations on test score outcomes. Section 4 concludes.

2 EXPERIMENTAL SETTING AND DESIGN

2.1 The Setting and The Choice of Primes

The study was conducted between fall 2013 and summer 2014, with about 1000 adolescents and their parents (for a subset) in 19 villages in the state of Rajasthan, India. Like most of South Asia, social segregation and discrimination based on both caste and gender is common in the region (Deshpande, 2011; World Bank, 2001; Unnithan-Kumar, 1997). The region is particularly rich in visual cues in the environment, which highlight differences across genders as well as castes, and these play a key role in the re-enforcement and persistence of caste- and gender-based social norms prevalent in people's everyday

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14. This is true not only in rural areas that are typically less developed, but also true among economically well off communities in urban areas. For example, Banerjee et al (2009) show that marriages are still mostly endogamous (that is, individuals marry within their own caste) even among educated urban households.

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lives (Unnithan-Kumar, 1997). It was these already-existing "primes" from the subjects' environments that were used to create questions for priming gender or caste identity for the study. This was done for several reasons. First, note that while the goal of priming is to achieve variation in the salience of a particular social category, in order to see effects on outcomes, it is important from an ethical standpoint to not create negative experiences for subjects as a result of the exercise. Second, introducing artificially strong priming methods in order to be able to see significant effects on outcomes, even if these do not, in fact, exist in the environment, is less likely to be externally validity. Thus, using the primes that already exist in the subjects' environments allows us to address each of these issues[15].

Heterogeneity in attire was the first feature exploited to formulate questions on priming both gender and caste identity. For instance, men belonging to different social groups wear different colored turbans, and women belonging to different social groups wear different types of blouses and skirts[16]. There also exists heterogeneity in the types of jewelry worn across the genders both across and within social groups. The second major feature that seems to reinforce group identity is the considerable segregation in the way that social groups locate themselves within a village[17]. Similarly, there are many other ways in which various castes differentiate themselves. For example, throughout India, and particularly in rural areas, castes are typically endogamous, and in Rajasthan, there exist distinct features in everyday life that set these groups apart: in addition to types of clothing and dwellings within a village, where individuals belonging to these groups seat themselves at village meetings, what types of occupations individuals belonging to specific castes take up etc. are all distinct, and common knowledge for locals. Therefore the precise question we will answer using this research design and this particular method of priming identity is: *do prevailing primes that already exist in the immediate environment due to persistent norms, affect the outcomes of interest?*

Each subject's caste group was classified as "low" if their caste belonged to the *Shudra*, which according to the Caste (or *Varna*) System, is the lowest, and had traditionally con-

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15. Each of the priming questions was vetted by the personnel from the partner NGO to ensure that they would not be offensive in any way.

16. Appendix B provides figures with examples of differences in attire between genders, and between castes.

17. For instance, both children and adults from a particular caste, who live in one area of the village, do not typically venture into an area that is demarcated for a different caste. Similar norms exist throughout most of rural India.

sidered the untouchable class. Appendix A provides the details of how each caste from the 19 villages was classified into this low caste, using village level surveys[18]. Table 2 provides estimates for the differences in means for individual and household level characteristics for the study sample[19]. We note that low caste subjects have lower test scores (by 0.2 standard deviations), are less likely to have girls enrolled in grade 8, have lower education levels for women in the household, belong to larger households, and are more likely to be engaged in agriculture.

2.2 The Experiments

Villages closest to the district headquarters, Pali, were chosen for the experiment, until a sample of around 1000 students was reached, leading to 19 villages being included in for experiment. The sample consisted of all children in grades 6 though 8 enrolled in the village school[20]. For logistical reasons, the villages for the study were chosen according to (i) proximity to the Pali district capital, and (ii) whether the village had an upper primary school along with a volunteer teacher. All villages were within a 100 kilometer radius of the Pali district capital and within a 200 kilometers of each other. One co-educational school that contained grades 6 to 8 was chosen from each of these villages and the final sample for the study consisted of approximately 1000 children. Children were then randomly assigned to the control and treatment groups for two experiments: one being in a static setting with hypothetical, long run outcomes, and the second being in a dynamic setting, with real outcomes (test scores).

The study sample consisted of all adolescents enrolled in a study school in grades 6 through 8, and no students or parents refused consent to be part of the learning camp and the study. Students were randomly assigned to seven equal-sized groups as illustrated in Table 1: four of the seven groups consisted of child-only subjects, and the remaining consisted of parent-child pairs.

18. The discussion in Appendix A further uses a second village survey done at the hamlet level (a smaller unit within th village), to construct measures of "voice" and "decision-making power" for each caste in the sample, and verifies that it is indeed the case that "low" castes are indeed less likely to have "voice" or decision-making power.

19. Note that the smaller sample size for the household characteristics is not due to attrition, but due to the fact that about 13 percent of the subjects were siblings from the same household within the sample. All the empirical specifications in the analysis control for whether the subject had a sibling in the study.

20. The number of students in graded 6 through 8 in the final 19 villages summed up to 1015 when the random assignment was done.

Two of the child-only groups consisted of adolescents for whom gender or caste was primed, respectively. Henceforth, we will refer to these treatment groups Tgender Child, and Tcaste Child. Another two groups consisted of adolescent-parent pairs, for whom gender or caste was primed, respectively, and where the parent was the primary respondent, while the child was present. Henceforth, let us call these Tgender Parent-Child and Tcaste Parent-Child.

The control groups corresponding to the treatments above, consisted of subjects, whose identity was not primed, but on whom a "neutral" questionnaire was administered. This questionnaire consisted of questions orthogonal to identity, such as the local weather, animals found in the wild, and so on. The control group for the child-only groups (Tgender Child and Tcaste Child) consisted of adolescents on whom the neutral questionnaire was administered – let us call this group Tneutral Child. Similarly, the control group for the parent-child paired treatments (Tgender Parent-Child and Tcaste Parent-Child), consisted of parent-adolescents pairs on whom the neutral questionnaire was administered – let us call this group Tneutral Parent-Child.

The final group consisted of adolescents that was grouped together with, and treated in an identical manner as subjects in Tneutral Child, but only for the first (static) experiment (as described next). Thus Tneutral Child consisted of twice the number of subjects in Experiment I (290) as the other groups (145 each). However, for the second, dynamic experiment, this final group served as a "pure" control group, wherein they were not asked any hypothetical questions about aspirations or beliefs, but only attended classes and took the tests. This final group allows us to see if simply being asked about beliefs and aspirations has an effect on outcomes (test scores), but comparing Tneutral child, and the Pure Control groups. Both experiments are described in the next two subsections.

An exhaustive list of all students in grades 6 through 8 from school rosters was collected in Fall 2013, followed soon after by a household survey. Subjects were not told about the longer study at this time. Experiment I was implemented in the middle of January 2014[21], and the learning camp classes, and Experiment II began soon after.

Appendix Table C.1 provides p values for an F-test of joint significance on baseline covariates. Since the effects of priming must be tested separately for high caste and low caste subjects (for caste priming), and for males and females (for gender priming), I also

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21. There was a gap of about a month between the household surveys and the start of intervention due to local elections and school examinations that were being held at the time.

report the results of balance tests within each of these groups, in Appendix C.

2.2.1 Experiment I: A Static Setting with Hypothetical Outcomes

The goal of the first experiment was twofold: first, I test whether caste or gender identity affects aspirations and beliefs about one's own (or child's) future economic outcomes. The goal of the first experiment was to look at the effects of priming social identity on long run (life) outcomes. Subjects were asked about their life aspirations and beliefs: namely, (i) how much monthly income they would aspire to earn in future (or what aspiration a parent has for the child), (ii) what level of education they would aspire to complete (or what aspiration of educational attainment the parent has for the child) and (iii) what type of occupation they would aspire to be in (or what aspiration the parent has for the child's occupation). Subjects were also asked about corresponding beliefs for each of these hypothetical outcomes, and this entire set of hypothetical questions was asked right after subjects were primed in the primed treatments, or asked neutral questions as in the neutral groups.

For the child-only groups, Tneutral Child, Tgender Child, and Tcaste Child, the child was the primary respondent. Priming (if any) and surveys for these subjects were conducted at school, with the child as the only respondent. In contrast, for the implementation of the questionnaires in groups involving parents (Tgender Parent-Child, Tcaste Parent-Child, and Tneutral Parent-Child), both parent and child were present together, and the questions were addressed to the parent. However, parents could consult their child while answering any of the questions.

Gender Primes Subjects were asked eight questions that were intended to prime the adolescent child's gender identity. A sub-sample of questions that were used to prime gender is provided below:

a) Would you say that both girls and boys should study in school together, or should class be held separately?

b) Can you describe the differences in the kinds of clothes that men and women wear on special occasions such as weddings?

c) Would you prefer to be taught by a male teacher or a female teacher?

The questions were identical, but framed slightly differently when the primary respondent was the parent (Group 2). In that case, for example, question (c) from above was

framed as follows: *Would you prefer your child be taught by a male teacher or a female teacher?*

Caste Primes Similarly, a sample of questions used to prime caste is listed below:

a) *What is the traditional dress worn by the people of your caste[22]?*

b) *Do families belonging to different castes live in your village?*

c) *Which caste/s do people from your caste marry into?*

Neutral Groups Before they were asked questions about their beliefs and aspirations, subjects from the neutral groups were asked a set of questions that were orthogonal to identity (or cultural norms more generally). A sample of questions that were used to ask subjects neutral questions, is provided below:

a) *Do a lot of tourists visit this area?*

b) *Does this region get a lot of rain?*

c) *Can a lot of peacocks be seen around here?*

Hypothetical Long Run Outcomes

After subjects were primed, they were asked a number of questions about their long run life aspirations and beliefs in the child-only groups. For the parent-child paired groups, the parent was asked for their beliefs about, or aspirations for, their child.

Since several questions were asked about long run outcomes, I construct a z-score using the long run aspirations and beliefs questions, to create a Long Run Aspirations Index, and a Long Run Beliefs Index, respectively. Each z-score consists of the subject's responses regarding monthly income at around age 35 (measured in Indian Rupees), educational attainment (measured in terms of years of schooling), occupational choice (responses were coded into "high" and "low" skill), and whether or not the subject believes, or aspires to living in a city instead of the village.

The survey also asked subjects how much they expect to earn monthly (in Indian Rupees), if they were to complete high school[23]. This variable measures the perceived returns to completing high school that subjects report. In the analysis, I consider the logarithm of the reported Rupee value as the outcome variable. This question was asked

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22. Other than the word jati, a word that is used locally to refer to ones caste is samaaj and is considered inoffensive. This is what was used in the surveys as well

23. Note that all subjects in the study are in grades 6 through 8, which, while not too far from twelfth grade, is a crucial time when a fraction (especially girls) starts to drop out.

at the very end, and was the only question that was not related to long run aspirations or beliefs.

As an illustration of how these questions were actually framed, I provide the questions related to educational attainment below.

Case I. Elicitation of aspirations and beliefs about educational attainment to adolescents; case where aspiration is elicited before belief.

[**Aspiration**] What is your aspiration for the level of education you will attain - that is, what level of education do you aspire to complete?

[**Belief**] You just told me that you aspire to complete .... level of education. What do you believe will happen - that is, what level of education do you believe you will be able to complete?

Case II. Elicitation of aspirations and beliefs about educational attainment to parent-adolescent pair (parent is primary respondent, but child is present); case where belief is elicited before aspiration.

[**Belief**] What do you believe will happen - that is, what level of education do you believe [Child's name] will be able to complete?

[**Aspiration**] You just told me that you believe that [Child's name] will be able to complete .... level of education. What is your aspiration for [Child's name]'s educational attainment - that is, what is your aspiration for the level of education you would like [Child's Name] to complete?

It is important to note here that the *order* of the belief and aspiration questions were randomized to be able to identify, and control for, any potential systematic differences in responses due to the order[24].

2.2.2   Experiment II: A Dynamic Setting with Real Outcomes

While one may be able to elicit aspirations and beliefs about an individual's long run future outcomes, observing actual realizations of these outcomes is a challenge. In order to look at how gender and caste identity affect actual realizations of outcomes in addition to the corresponding aspirations and beliefs, I focused on the specific case of learning outcomes.

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24. As we will see in the results, there was indeed a significant effect on the aspiration responses (but not beliefs) due to the ordering

The Learning Camp

To do so, I created and implemented a learning camp at each of the nineteen study schools with the support of two NGO's. First, Pratham (in Delhi) helped in the creation of the learning content and testing tools for the learning camp. This consisted of a learning booklet, workbook, teaching aids, tests, and, homework assignments. Second, Educate Girls, the primary partner for the experiment, provided teachers from their extensive network of volunteers teachers, who were then trained to teach the classes with learning materials created for the experiment. Permission was obtained to hold the classes in school during school hours, for about three hours each week. A pre-test was conducted before the classes began, and Table 3 shows the summary statistics of the pre-test scores, for each of the social groups: male-low and high caste, female-low and high caste, where we see that high caste males have the highest average test scores.

The timing of when classes were held, when tests were taken, when feedback was provided, and when subjects were primed, is crucial to the design of this experiment. The content of the learning camp was therefore created keeping in mind the experimental design. The topics for the learning camp divided into multiple topics, and the content for structure in such a way, as to ensure that each topic would be taught over approximately ten to twelve days. Students were then tested by the research team at school on each topic at the end of each of these ten-day periods. Before each test was conducted, the research team administered a survey asking the adolescents (or parent-adolescent pairs) about their goals and expectations for the upcoming test. Subjects in assigned to the "priming" groups were primed right before being asked about aspirations and beliefs.

The test consisted of 5 questions worth 3 points each, and tests were graded immediately afterwards. All tests were graded by graders hired and trained by the research team. Subjects were told their (or their child's) score on the previous test when they were surveyed, before being asked about aspirations and beliefs about the next test.

There were seven tests conducted during the learning camp, and test score aspiration, test score belief, and eventual test score were recorded seven times through the duration of the learning camp[25]. The research team tracked these classes by conducting random spot checks to ensure that the requisite amount of time had been spent on each topic before a

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25. At the end of the learning camp, follow-up surveys were conducted to collect information on friendship networks for the study sample, as well as information on parental involvement in learning activities at home

test was actually conducted for that topic. Figure 1 illustrates the timing of the surveys, classes, and tests. The protocols and timing for this process were specifically designed to mimic the timing of outcome realizations, and beliefs and aspirations formation, in real life, where a period begins with an initial outcome realization, and the formation of aspirations and beliefs. Subsequently, the individual makes a decision to exert effort, and has an outcome realization in the next period, at which time aspirations and beliefs for the next period are formed, and so on.

Remedial Classes. Even though we would expect that on average subjects would weakly improve on test scores as a result of having attended the free learning camp, it is important to note that steps were taken in order to counteract any potential negative effects of being primed. In addition to subjects being debriefed in detail at the end of the experiment, remedial classes were set up for any students that appeared to not have improved their performance as much as the average student in the relevant control group. The volunteer teachers were trained to be especially encouraging during these remedial sessions, and students received stickers and stars for effort.

A sample of questions on beliefs and aspirations are presented below. Aside from test scores, these aspiration and belief questions form the basis of the main outcomes for this second experiment.

Hypothetical and Real, Short Run Outcomes

Questions related to subjects' test score aspirations and beliefs were asked a few days prior to the actual test was conducted at school. The examples below illustrate how these questions were framed.

Case I. Elicitation of aspirations and beliefs about test score to adolescents; case where the aspiration is elicited before the belief.

[**Aspiration**] What is your aspiration for the test score out of 15 points that will be held as part of the learning camp at school?

[**Belief**] You just told me that you aspire to obtain ..../15 points on the next test. What do you believe will happen - that is, what score out of 15 do you believe you will be able to obtain on the next test?

Case II. Elicitation of aspirations and beliefs about test score to parent-adolescent pair (parent is primary respondent, but child is present); case where the belief is elicited before the aspiration.

[**Belief**] What do you believe will happen - that is, what test score out of 15 do you believe [Child's name] will be able to obtain on the next test that will be held as part of the learning camp at school?

[**Aspiration**] You just told me that you believe that [Child's name] will be able to obtain ..../15 points on the next test. What is your aspiration for [Child's name]'s next test score - that is, what is your aspiration for the score out of 15 you would like [Child's Name] to obtain?

The order of the aspirations and beliefs questions was randomly assigned across subjects within each group., and each of the questionnaires either primed gender, or primed caste, or asked neutral questions, and randomly varied in whether the respondent was an adolescent, or a parent-adolescent pair. These questions were asked in the first part of the survey, just before subjects were asked for beliefs and aspirations.

Learning

I use test scores on tests that were conducted by the research team at school after each topic was taught, as the learning outcome. Each of the tests was worth 15 points[26]. Tests were graded by graders hired by the research team as soon as a round of tests had been completed. Subjects (only adolescent, or parent-adolescent pair, depending on the random assignment) were told their test scores soon after.

3   RESULTS

3.1   Priming Check

A survey was conducted several days after the end of both experiments, which included a question asking each subject to specify what questions they had been asked during the experiment, each time they were given their test scores by the surveyors, and asked about aspirations and beliefs. I create a dummy variable for responses that specify (i) gender-related topics, (ii) caste-related topics, and (iii) topics related to the weather, the learning camp, tourists, animals (and anything unrelated to local customs, gender, and caste). In Table 4, each of these three dummies is regressed on six of the treatment and control dummies, with the suppressed category as the neutral group, where the respondent

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26. The two tests taken at the start and end of the learning camp were worth 24 points each - these have been appropriately scaled for the analysis.

consisted of Parent-Child pairs (Tneutral Parent-Child)[27].

We see that the caste primed treatments were significantly more likely to report having been asked caste-related questions, and do not report being asked either more or less about any of the other categories. Similarly, the gender primed treatments were significantly more likely to report having been asked gender-related questions, and while not reporting being asked either more or less about any of the other categories. Finally, the neutral or pure control child-only groups are not more or less likely to report being asked either gender- or the caste-related questions, relative to the neutral parent-child group.

Since this survey question was asked several days after the experiment ended, and hence at least a week after the final round of priming was done, these results provide us with a check to make sure that caste and gender were indeed made salient to subjects in the caste and gender groups, respectively, and not the in other (comparison) groups[28]

3.2 Experiment I

This section describes the results from the first experiment, where, as described above, subjects were primed in a static setting and asked hypothetical questions about long run outcomes in their (or their children's) lives, moments after they were primed. The main empirical specification to identify the effects of priming identity on these long run aspirations and beliefs, is as follows:

$$y_{sgi} = \beta_0 + \beta_1 T^p_{sgi} + X'_{sgi}\gamma + \nu_{sg} + \varepsilon_{sgi} \tag{1}$$

where y_{sgi} is the outcome of interest for child i in grade g in school (village) s, T^p_{sgi} is a dummy for treatment assignment and takes value 1 if the child was assigned to one of the four priming treatment groups p, which is either Tgender Child, Tgender Parent-Child, Tcaste Child, or Tcaste Parent-Child, and X_{sgi} is a vector of individual level controls. ν_{sg} is a grade by school fixed effect, and ε_{sgi} is an individual specific error term. β_1 is then the effect of priming, which is the parameter of interest. The control group for the child-only

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27. The results hold irrespective of what suppressed category is used.

28. Surveyors circled all options that applied, and made note of any additional responses not already listed in the survey. A small fraction of subjects provided responses that mentioned having been asked about "local customs or norms". Both gender and caste primed groups were significantly more likely to provide this category as one of their several responses, with no effects for subjects in the neutral/control groups.

groups, Tcaste Child, and Tgender Child, is the group that was asked neutral questions in the first experiment. This corresponds to the groups titled Tneutral Child, and Pure Control in Table 1. Similarly, the control group for the parent-child groups, Tcaste Parent-Child, and Tgender Parent-Child, is the group that was asked neutral questions in the first experiment. This corresponds to the groups titled Tneutral Parent-Child in Table 1.

3.2.1 Gender

Results for priming gender for female children, and for priming gender for parent-child pairs (also for female children), are provided in Table 5, in Columns 2, 3, 5, and 6, while Columns 1 and 4 pool both gender primed treatment groups. We see that making gender salient by reinforcing gender primes that already exist in the subjects' environments, negatively affects their beliefs about how much they (their child) would be able to earn after completing high school. In particular, primed female subjects report expecting about a 65 percent lower income after completion of high school relative to non-primed female subjects, with a p-value of 0.013. The non-pooled estimate sizes, and p-values for the returns to completing high school suggest that the pooled results are driven primarily by effects on the responses given by the parents in the parent-child treatment group. There is no evidence to suggest that gender primed female subjects have lower aspirations or beliefs for other life outcomes, as measured by the corresponding z-scores calculated using multiple aspirations and beliefs questions about long run, life outcomes that were asked in the survey[29].

For male children, priming gender positively impacts boys' beliefs about their life outcomes, as well their beliefs about returns to completing high school. The results are presented in Table 6. In Column 5, we see that the life outcomes beliefs z-score increases by 0.17 standard deviations (p-value 0.042) when primed, and in Column 8, their beliefs about the returns to completing high school are 47.5 percent higher.

Taken together, there is evidence that the primes constructed from subjects' environments, do affect stated beliefs, but not necessarily aspirations about long run life outcomes.

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29. While some of the aspirations and beliefs for long run outcomes were individually significant (particularly, income), only z-scores for these are reported to avoid false positives arising from multiple hypothesis testing.

3.2.2 Caste

The results for priming caste are shown in Tables 7 and 8 for high and low caste subjects, respectively. The estimates in Table 7 show that both pooled and non-pooled estimates for life aspirations and beliefs are significantly higher for high caste subjects. For instance, for the pooled results, caste primes induce subjects to state aspirations, whose combined index is 0.22 standard deviations higher than non-primed high caste subjects (the corresponding p-value is 0.003). Similarly, their beliefs index is 0.15 standard deviations higher (the corresponding p-value is 0.02).

There is no evidence here to suggest that these subjects report different returns to completing high school when primed, or that low caste subjects' stated beliefs or aspirations are affected by the primes that were introduced (Table 8).

Therefore in contrast to the gender-priming results, high caste caste-primed subjects do report higher aspirations and beliefs when primed. This implies either that the gender primes that exist in the subjects' environments do not move their beliefs and aspirations about their future[30], unlike caste-based priming. This does not imply that a "stronger" priming method would not induce effects: the results here correspond to the specific primes used for the experiment, which intentionally only reinforced primes that already exist in the subjects' everyday lives (as described in Section 2.1).

3.3 Experiment II

This section presents the results from the second experiment that was conducted with the same subjects, over a period of approximately ten weeks, as described in Section 2. The empirical specification to estimate the effects of repeated priming over the duration of the learning camp, is as follows:

$$y_{sgit} = \beta_0 + \beta_1 T^p_{sgi} + X'_{sgi}\gamma + \nu_{sg} + \sigma_t + \varepsilon_{sgit} \tag{2}$$

where y_{sgit} is the outcome of interest for child i in grade g in school (village) s in period t, T^p_{sgi} is a dummy for treatment assignment to one of the four primed treatments (Tgender Child, Tcaste Child, Tgender Parent-Child, Tcaste Parent-Child). X_{sgi} is a

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30. For instance, due to "saturation", that is, these groups already feel significantly different from each other and their behaviors cannot be moved any farther (towards their group's norm or stereotype) by introducing these primes.

vector of individual level controls. ν_{sg} and σ_t are grade by school, and time period fixed effects, respectively, and ε_{sgit} is an individual and time specific error term. All errors were clustered at the individual level. The effect of priming is the parameter of interest, and is given by β_1. The control group for the child-only groups, Tcaste Child, and Tgender Child, is the group that was asked neutral questions in the second experiment. This corresponds to the group titled Tneutral Child in Table 1. For the test score outcome, however, the group that was asked no aspirations and beliefs questions in this second experiment, is also included as part of the control group[31]. The control group for the parent-child paired groups, Tgender Parent-Child, and Tcaste Parent-Child, the relevant control group is Tneutral Parent-Child.

3.3.1 Gender

Female children in the gender primed report significantly lower test score aspirations (by 0.173 standard deviations, and p-value 0.028), and lower test score beliefs (by 0.143 standard deviations, and p-value 0.048), as seen in Columns 2 and 5 of Table 9. The lower aspirations and beliefs, however do *not* seem to affect test scores. The estimates for effects on test scores are provided in Columns 7-9. All estimates have very large p-values, but importantly, the point estimates are very small, and all are, in fact, less than 0.04 standard deviations. Similarly, for the treatment group with the parent-child pair respondents, the priming gender does not affect any of the three learning-related outcomes - all point estimates are both economically and statistically insignificant.

The estimates for boys are presented in Table 10. While there seems to be no effect on aspirations for boys, there is some suggestive evidence (p-value about 0.06) that on average across all the time periods, beliefs about test scores falls for parent-child pairs by about 0.13 standard deviations. This is in stark contrast to the very same subjects' responses to life outcomes when primed in the first experiment, where there had been no effects of gender priming on the parent-child group. One explanation for these (marginally) negative results, is that the repeated test score realizations bias beliefs downwards more

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31. This was done for two reasons. First, this group is part of the learning camp, and we have records of their tests scores for each test. Second, there were no differences in test scores (either statistically or economically) between Tneutral Child and Pure Control. Appendix Table C.6 provides these results, where we see that simply being asked about aspirations and beliefs about every test on the learning camp did not, in fact, affect test scores. The coefficient estimates are so small that it is unlikely that we would see any meaningful differences even with a larger sample due to potential issues with power.

strongly towards more realistic numbers for the primed subjects, since "being right" over time, or performing better than stated expectations, might be important to subjects as well. The design, however, does not allow us to identify the exact mechanism for this marginally negative effect for the male gender primed group.

3.3.2   Caste

The results for priming caste are presented in Tables 11 and 12. Consistent with responses to the long run life outcomes, high caste subjects report higher test score aspirations, beliefs, and show an improvement in test scores. In particular, for the pooled treatment groups, the increase in test score aspirations is 0.15 standard deviations, while the corresponding beliefs increase by 0.2 standard deviations. Actual test scores rise by 0.14 standard deviations. Looking separately at each of the two caste primed treatment groups, the effects appear stronger for the child-only group. Table 12 demonstrates that there are neither economically nor statistically significant effects of priming caste on learning, for low caste subjects. These results are very consistent with the effects we saw in the static setting of Experiment I.

3.4   The Effect of Parental Involvement

The research design also allows us to investigate the effects of involving parents in school work, using the two "neutral" treatments that served as controls for the primed treatment groups. The first group consisted of child-only respondents, who were told their test scores over time, and also asked about their aspirations and beliefs using individual surveys conducted at school. The second group consisted of parent-child pairs, where the primary respondent for the aspiration sand beliefs was the parent, with the child present. Parents and children were jointly told the test scores realizations over time. Comparing outcomes for these two groups therefore allows us to test the effect of involving parents in this setting, specifically through the provision of information about the child (test scores), as well as their aspirations and beliefs about the child.

The model estimated to identify this effect is as follows:

$$y_{sgit} = \beta_0 + \beta_1 Tjoint_{sgi} + X'_{sgi}\gamma + \nu_{sg} + \sigma_t + \varepsilon_{sgit} \tag{3}$$

where the notation is the same as for the model presented in Section 3.2, and where

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Tjoint indicates a dummy for being in the parent-child neutral group. The results are presented in Table 13. Coefficient estimates are presented in the table for *Tjoint*, for a male dummy, and for Columns 2, 4, and 6, an interaction term between *Tjoint* and the male dummy are included to investigate heterogeneous effects by gender. First, we see that parents report significantly higher aspirations and beliefs for children, than do children for themselves. Interestingly however, the model with the interactions show that the results are driven entirely by effects on parents' *male* children. The estimates on female children are neither economically nor statistically significant. On test scores, there is some suggestive evidence that parental involvement may increase test scores for boys. We should note however, that while the point estimate is not trivial (0.13 standard deviations), the p-value is large (0.12).

3.5   Identifying the Causal Effects of Aspirations: an Instrumental Variable Approach

We finally turn to empirically investigating the causal effect of aspirations on outcomes. Identifying causal effects of aspirations on outcomes is very challenging because the exclusion restriction is typically never satisfied: any experimental variation that affects aspirations (or beliefs) may affect outcomes. For the same reason, using the experimental variation of the priming treatments as an instrument would be highly suspect, since there may very likely be a direct effect of priming on the test score outcomes.

Much has been theorized about the effect of having aspirations that are too high (or low), may have on eventual life outcomes (Appadurai, 2006; Beaman et al., 2012, Genicot and Ray, 2012). The theoretical literature on aspirations and their relationship with outcomes (see for example, Ray, 2002; Genicot and Ray, 2013) models aspirations and outcomes as having a non-linear relationship: aspirations that are too high (that is, relative to one's typical, or *achievable* outcomes), may lead to worse outcomes and lower aspirations in the next period, while aspirations that are close to one's typical outcomes may lead similar or improved outcomes in the next period. In the setting of this experiment, a natural way to capture the difference between one's aspiration and outcome realization is to simply take the difference between the (non-standardized) aspiration in a period t (for the outcome in period $t+1$), and the (non-standardized) test score realization in the same period t.

Identifying the causal effect of this difference on outcomes is once again challenging, but using a unique feature of the survey questionnaires that had been built into their design, I propose an instrument for this difference between one's aspirations, and actual, or achievable outcomes. Recall that in every survey that asked about aspirations and beliefs, the *order* in which the questions were asked had been randomized. This had been done to ensure that any effect of being asked about beliefs or aspirations either first or second, would be controlled for in the analysis. I find that it is indeed the case that the order has an effect: in particular, when a subject is asked the aspiration question *second*, he/she is reports a test score aspiration that is 0.12 standard deviations higher (p-value 0.003). This is reported in Column 1 of Table 14. On the other hand, the order does not affect stated beliefs as evidenced by Column 2 of the table. Further, Column 3 reports that being asked the aspiration question second affects the difference between the stated aspiration in period t, and the test score realization in period t by 0.511 points (where the average for this difference is about 6 for the sample). The p-value for this estimate is 0.000.

Column 5 of Table 14 presents the IV estimates, where the difference between the aspiration and test score realization is instrumented by whether the respondent was asked the aspiration question after the belief question. The IV estimate shows a -0.158 standard deviation lower test score for a one point change in the difference between the subject's stated test score aspiration, and last test score realization. This suggests that having aspirations that are higher than one's usual ability, *may* have negative effects on one's outcomes. Note that the instrument captures a rise in stated aspirations that was caused inadvertently by the survey design, and in this sense, the increase in aspirations may have been superficial[32]

4   Conclusion

This paper tests whether factors in the environment that prime social identity, affect one's aspirations, beliefs, and eventual outcomes. I use a *priming* methodology from social psychology, and used more recently in economics, to exploit environmental cues

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32. This begs the question: what does it mean to have "high" or "low" aspirations, and how might one determine what might be "optimal"? The literature on the measurement and definition of aspirations is still very new, and questions such as this are fruitful areas of future research.

within the subjects' everyday environment to prime either caste or gender identity, thereby introducing exogenous variation in the salience of one's social identity. I then elicit long run (life) aspirations and beliefs of subjects that consist of adolescents between the ages of 11 and 14, as well as that of parent-adolescent pairs in order to test the effects of parental influence. In order to look at real outcomes, I set up a ten week learning camp in the study schools, and use the timing of classes, tests, and surveys over multiple periods, to elicit short run aspirations, beliefs (about test scores), along with attendance and eventual test scores.

First, I find that making gender salient using the gender primes that already exist in female subjects' environments, negatively affects their perceived returns to completing high school, but aspirations or beliefs about longer run life outcomes. For male children on the other hand, priming gender positively impacts boys' beliefs about their life outcomes, as well their beliefs about returns to completing high school. Female children in the second, dynamic experiment, report significantly lower test score aspirations as well as beliefs. The lower aspirations and beliefs, however, do not appear to affect test scores. Second, we see that caste primes induce subjects to state higher aspirations and beliefs for long run, life outcomes, but there is no evidence here to suggest that low caste subjects' stated beliefs or aspirations are affected by the primes that were introduced. Consistent with this, in the second experiment, high caste subjects report higher test score aspirations, beliefs, and show significant improvements in test scores, when in the primed treatment. One reason for primes not affecting low caste subjects might be due to "saturation", that is, these groups already feel significantly different other groups, and their behaviors cannot be moved any farther (towards their group's norm or stereotype) by introducing these primes. This does not mean "stronger" priming methods are necessary in research designs since it is unclear that inducing effects through artificially strong primes would be externally valid, aside from the ethical concerns. All of the results presented here correspond to the priming questions that were specifically aimed at reinforcing primes that already exist in the subjects' everyday lives.

I also find that parental involvement moves aspirations and beliefs upwards, but only for boys. Finally, using a unique feature built into the survey design, I propose an instrumental variable to identify the effects of having aspirations that are higher than past outcome realizations. The estimates show that each additional 1 point (out of 15 points) difference between the stated test score aspiration and last realized test score, is associated

with a 0.158 standard deviation lower test score in the next period. This suggests that having aspirations that are higher than one's (usual) ability may have negative effects on one's eventual outcomes.

The findings in the paper demonstrate that factors in the social environment that prime one's social identity, do indeed affect individuals' beliefs about what they may be able to, or might aspire to achieve. This idea is also related to Sen's *capabilities* approach to studying economic development (Sen, 1985, 2001), which captures the idea that a fundamental requirement for economic well-being is to have the capability to formulate and pursue one's goals. It is not clear however, if having high goals or aspirations have unambiguosly positive results. The finding in this paper that having aspirations that are too high may have negative effects gives rise to new questions: for instance, how can we empirically identify what levels might be optimal for improving eventual outcomes for different individuals? The literature on the measurement and definition of aspirations is still very new, and while much has been hypothesized about what the effects of aspirations on eventual outcomes might be, this remains a fruitful area for future research.

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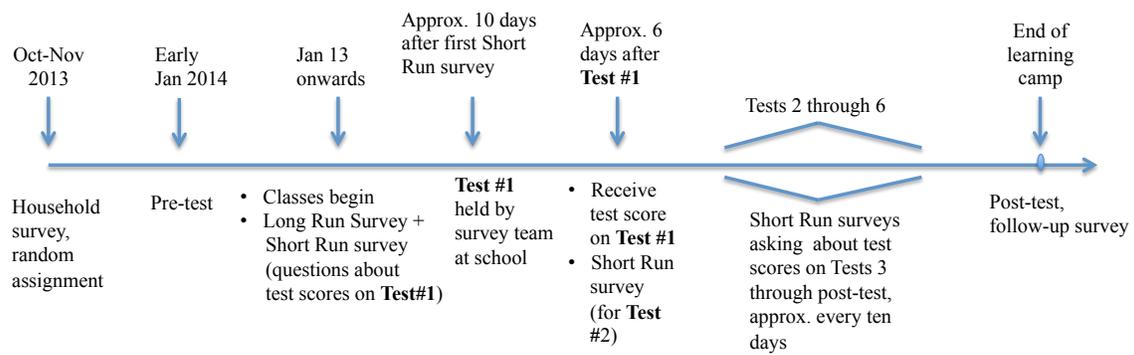
Figure 1: EXPERIMENTAL DESIGN: TIMING

Table 1: EXPERIMENTAL DESIGN: SAMPLE

Group	N	Experiment 1			Experiment 2		
		Parental Involvelment?	Aspirations & Beliefs Elicited?	Priming?	Parental Involvelment?	Aspirations & Beliefs Elicited?	Priming?
(1) Tgender Child	145	No	Yes	Yes, Gender	No	Yes	Yes, Gender
(2) Tgender Parent-Child	145	Yes	Yes	Yes, Gender	Yes	Yes	Yes, Gender
(3) Tcaste Child	145	No	Yes	Yes, Caste	No	Yes	Yes, Caste
(4) Tcaste Parent-Child	145	Yes	Yes	Yes, Caste	Yes	Yes	Yes, Caste
(5) Tneutral Child	145	No	Yes	No	No	Yes	No
(6) Tneutral Parent-Child	145	Yes	Yes	No	Yes	Yes	No
(7) Pure Control	145	No	Yes	No	No	No	No

Notes: This table provides details of the treatments and controls for each of the two experiments. For Experiment 1, Tneutral Child and Pure Control jointly formed the control group for Tgender Child and Tcaste Child; and Tneutral Parent-Child consistutes the control group for Tgender Paent-Child and Tcaste Parent-Child. For Experiment 2, Pure Control constitutes the control group for Tneutral Child to test if stating aspirations and beliefs about test scores affects test scores, while Tneutral Child constitutes the control for the identity primed child-only groups, Tgender Child and Tcaste Child. Similarly, Tneutral Parent-Child serves as the control for Tgender Parent-Child and Tcaste Parent-Child groups.

Table 2: Differences between Low and High Caste Subjects

	Sample Size	Difference (Low - High)	P-Value
Male Dummy	1015	0.0958	0.003
Standardized Pre-Test Score	958	-0.205	0.002
Dummy for Female in Grade 6	1015	-0.0223	0.371
Dummy for Female in Grade 7	1015	-0.00701	0.759
Dummy for Female in Grade 8	1015	-0.0665	0.003
Dummy for Male in Grade 6	1015	0.0491	0.052
Dummy for Male in Grade 7	1015	0.0249	0.332
Dummy for Male in Grade 8	1015	0.0219	0.392
Highest Level of Schooling for Male in Household	865	-0.129	0.555
Highest Level of Schooling for Female in Household	865	-0.498	0.03
Number of Household Members	865	0.266	0.089
Number of Children in the Household	865	0.111	0.227
Dummy for whether Household is Engaged in Agriculture	865	0.0674	0.04

Notes: This table shows the difference in means between low caste and high caste adolescents, for individual and household characteristics. The smaller sample for household characteristics is not due to attrition, but reflects the fact that about 13 percent of the sample constituted siblings within the sample.

Table 3: STANDARDIZED TEST SCORES BY SOCIAL GROUP

		Dependent Variable: Standardized Pre-Test Score		
	(1)	(2)	(3)	(4)
Female - High Caste	-0.145	-0.150	0.0325	0.0439
	(0.135)	(0.133)	(0.113)	(0.110)
Male - High Caste	0.114	0.0897	0.297	0.281
	(0.0807)	(0.0791)	(0.0691)	(0.0666)
Female - Low Caste	-0.289	-0.272	-0.0283	0.0187
	(0.0931)	(0.0913)	(0.0825)	(0.0784)
Fixed Effects	-	*Grade*	*Village*	*Grade X Village*
Dep. Var Mean	*0.00*	*0.00*	*0.00*	*0.00*
R-squared	*0.0175*	*0.0594*	*0.347*	*0.451*
Observations	*958*	*958*	*958*	*958*

Notes: Each column in a regression of standardized pre-test scores on a dumy for high caste female students, high caste male students, and low caste female students. Low caste males is the supressed category. Columns 2, 3 and 4 contain fixed effects as indictaed in the table. Standard errors are shown in the parantheses.

Table 4: PRIMING CHECK

Dependent Variable: Dummy for Whether Respondent said he/she was asked Questions about:	Caste	Gender	Weather, Tourism, Other
	(1)	(2)	(3)
Tcaste Child	0.172	0.0176	-0.0321
	(0.0416)	(0.0135)	(0.0534)
Tcaste Parent-Child	0.105	0.0191	-0.000530
	(0.0369)	(0.0132)	(0.0533)
Tgender Child	0.00144	0.0679	0.0856
	(0.0302)	(0.0223)	(0.0562)
Tgender Parent-Child	0.0229	0.0399	-0.0328
	(0.0307)	(0.0180)	(0.0523)
Tneutral Child	0.00711	0.0122	0.127
	(0.0311)	(0.0121)	(0.0566)
Pure Control	-0.0183	-0.00207	0.111
	(0.0289)	(0.00890)	(0.0554)
R-squared	0.160	0.0970	0.165
Observations	945	945	945

Notes: Each column is a regression for a dummy of whether the respondent said he/she was asked questions about caste (Column 1), gender (Column 2), or about the weather, tourism and other topics unrelated to caste, gender or local norms (column 3), during the experiment, on dummies for each of the treatment and control groups. The suppressed category is the neutral/non-primed group where the respondent consisted of Parent-Child pairs (Tneutral Parent-Child). Each regression contains controls for pre-test score, a gender dummy, a dummy for whether the respondent belongs to a low caste, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor and villageXgrade fixed effects. Standard errors are provided in parantheses.

Table 5: EXPERIMENT I: EFFECTS OF PRIMING GENDER ON FEMALE SUBJECTS

| | Dependent Variables: | | | | | | | | |
| | Long Run Aspirations Index | | | Long Run Beliefs Index | | | Log (1+Returns to HS) | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean Dep. Var.	-0.170	-0.161	-0.19	-0.161	-0.157	-0.22	8.144	8.838	7.737
Pooled Gender Treatments	0.0115			0.0440			-0.647		
	(0.0547)			(0.0473)			(0.0259)		
Tgender Child		0.0474			0.0657			-0.124	
		(0.0740)			(0.0700)			(0.254)	
Tgender Parent-Child			-0.0381			0.0250			-0.869
			(0.103)			(0.0774)			(0.544)
Observations	274	174	100	174	169	95	278	175	103
R-squared	0.315	0.424	0.622	0.424	0.456	0.673	0.421	0.6	0.745

Notes: Columns 1 and 2 have as their dependent variables, z-scores of subjects' long run aspirations, and beliefs, respectively. The dependent Column 3 is the logarithm of the preceived returns to completing high school. Each column is a regression of the listed dependent variable on either the treatment group with gender primed children (Columns 2, 5, and 8), or the treatment group with gender primed parent-child pairs (Columns 3, 6, and 9), or a regressor that pools both treatment groups (Columns 1, 4, and 7). The sample consists of female children. All specifications include the following controls: the pre-test score, a dummy for whether the respondent belongs to a low caste, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor and villageXgrade fixed effects. Standard errors are provided in parantheses.

Table 6: Experiment I: Effects of Priming Gender on Male Subjects

	Dependent Variables:								
	Long Run Aspirations			Long Run Beliefs Index			Log (1+Returns to HS)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean Dep. Var.	0.0680	0.047	0.101	0.038	0.0507	0.017	8.779	8.875	8.625
Pooled Gender Treatments	0.0629			0.0764			0.246		
	(0.0580)			(0.0594)			(0.174)		
Tgender Child		0.100			0.172			0.475	
		(0.0795)			(0.0837)			(0.211)	
Tgender Parent-Child			0.0764			0.0343			0.0427
			(0.0942)			(0.0866)			(0.359)
Observations	347	211	136	345	211	134	354	219	135
R-squared	0.328	0.419	0.631	0.285	0.453	0.576	0.244	0.374	0.501

Notes: Columns 1 and 2 have as their dependent variables, z-scores of subjects' long run aspirations, and beliefs, respectively. The dependent Column 3 is the logarithm of the preceived returns to completing high school. Each column is a regression of the listed dependent variable on either the treatment group with gender primed children (Columns 2, 5, and 8), or the treatment group with gender primed parent-child pairs (Columns 3, 6, and 9), or a regressor that pools both treatment groups (Columns 1, 4, and 7). The sample consists of male children. All specifications include the following controls: the pre-test score, a dummy for whether the respondent belongs to a low caste, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor and villageXgrade fixed effects. Standard errors are provided in parantheses.

Table 7: Experiment I: Effects of Priming Caste on High Caste Subjects

	Dependent Variables:								
	Long Run Aspirations Index			Long Run Beliefs Index			Log (1+Returns to HS)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean Dep. Var.	-0.0148	-0.029	0.008	-0.0265	0.004	-0.075	8.618	8.672	8.527
Pooled Caste Treatments	0.220			0.154			-0.220		
	(0.073)			(0.0656)			(0.271)		
Tcaste Child		0.183			0.188			-0.228	
		(0.0956)			(0.105)			(0.332)	
Tcaste Parent-Child			0.371			0.168			-0.370
			(0.148)			(0.118)			(0.518)
Observations	218	132	86	219	135	84	223	140	83
R-squared	0.332	0.445	0.741	0.367	0.448	0.696	0.432	0.633	0.783

Notes: Columns 1 and 2 have as their dependent variables, z-scores of subjects' long run aspirations, and beliefs, respectively. The dependent Column 3 is the logarithm of the preceived returns to completing high school. Each column is a regression of the listed dependent variable on either the treatment group with caste primed children (Columns 2, 5, and 8), or the treatment group with caste primed parent-child pairs (Columns 3, 6, and 9), or a regressor that pools both treatment groups (Columns 1, 4, and 7). The sample consists of high caste children. All specifications include the following controls: the pre-test score, a dummy for whether the respondent is male, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor and villageXgrade fixed effects. Standard errors are provided in parantheses.

Table 8: EXPERIMENT I: EFFECTS OF PRIMING CASTE ON LOW CASTE SUBJECTS

| | Dependent Variables: | | | | | | | | |
| | Long Run Aspirations Index | | | Long Run Beliefs Index | | | Log (1+Returns to HS) | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean Dep. Var.	-0.0423	-0.0559	-0.019	-0.0650	-0.0586	-0.075	8.477	8.632	8.238
Pooled Caste Treatments	-0.00715			0.00548			0.127		
	(0.0550)			(0.0511)			(0.204)		
Tcaste Child		-0.00372			0.0562			0.320	
		(0.0605)			(0.0679)			(0.213)	
Tcaste Parent-Child			-0.00730			-0.0597			0.00459
			(0.113)			(0.0954)			(0.374)
Observations	380	238	142	373	229	144	400	243	157
R-squared	0.294	0.41	0.549	0.266	0.323	0.462	0.243	0.418	0.552

Notes: Columns 1 and 2 have as their dependent variables, z-scores of subjects' long run aspirations, and beliefs, respectively. The dependent Column 3 is the logarithm of the preceived returns to completing high school. Each column is a regression of the listed dependent variable on either the treatment group with caste primed children (Columns 2, 5, and 8), or the treatment group with caste primed parent-child pairs (Columns 3, 6, and 9), or a regressor that pools both treatment groups (Columns 1, 4, and 7). The sample consists of low caste children. All specifications include the following controls: the pre-test score, a dummy for whether the respondentis male, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor and villageXgrade fixed effects. Standard errors are provided in parantheses.

Table 9: EXPERIMENT II: EFFECTS OF PRIMING GENDER ON FEMALE SUBJECTS

| | Dependent Variables: | | | | | | | | |
| | Test Score Aspiration | | | Test Score Belief | | | Test Score | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean Dep. Var.	-0.0952	-0.152	-0.036	-0.106	-0.161	-0.0476	-0.0426	-0.0351	-0.053
Pooled Gender Treatments	-0.0999			-0.0791			-0.0351		
	(0.0653)			(0.0646)			(0.0426)		
Tgender Child		-0.173			-0.143			-0.0265	
		(0.0779)			(0.0716)			(0.0473)	
Tgender Parent-Child			0.00263			-0.0119			-0.0244
			(0.0944)			(0.100)			(0.0725)
Observations	1668	852	816	1668	852	816	1993	1177	816
R-squared	0.222	0.339	0.244	0.256	0.378	0.256	0.258	0.315	0.277

Notes: Each column is a regression of the listed dependent variable on either the treatment group with gender primed children (Columns 2, 5, and 8), or the treatment group with gender primed parent-child pairs (Columns 3, 6, and 9), or a regressor that pools both treatment groups (Columns 1, 4, and 7). All test score aspirations, beliefs, and realized test scores are standardized. The sample consists of female children. All specifications include the following controls: the pre-test score, a dummy for whether the respondent belongs to a low caste, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor, time period, and villageXgrade fixed effects. Standard errors are clustered at the child level, and are are provided in the parantheses.

Table 10: EXPERIMENT II: EFFECTS OF PRIMING GEMDER ON MALE SUBJECTS

| | Dependent Variables: | | | | | | | | |
| | Test Score Aspiration | | | Test Score Belief | | | Test Score | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean Dep. Var.	0.0265	-0.0780	0.130	0.0176	-0.0694	0.103	0.131	0.130	0.132
Pooled Gender Treatments	-0.0557			-0.101			-0.0697		
	(0.0585)			(0.0596)			(0.0412)		
Tgender Child		0.0139			-0.0142			-0.0687	
		(0.0800)			(0.0752)			(0.0505)	
Tgender Parent-Child			-0.0824			-0.138			-0.0738
			(0.0637)			(0.072)			(0.0624)
Observations	2088	1036	1052	2089	1038	1051	2482	1430	1052
R-squared	0.222	0.302	0.270	0.269	0.392	0.288	0.290	0.339	0.293

Notes: Each column is a regression of the listed dependent variable on either the treatment group with gender primed children (Columns 2, 5, and 8), or the treatment group with gender primed parent-child pairs (Columns 3, 6, and 9), or a regressor that pools both treatment groups (Columns 1, 4, and 7). All test score aspirations, beliefs, and realized test scores are standardized. The sample consists of male children. All specifications include the following controls: the pre-test score, a dummy for whether the respondent belongs to a low caste, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor, time period, and villageXgrade fixed effects. Standard errors are clustered at the child level, and are provided in the parantheses.

Table 11: EXPERIMENT II: EFFECTS OF PRIMING CASTE ON HIGH CASTE SUBJECTS

| | Dependent Variables: | | | | | | | | |
| | Test Score Aspiration | | | Test Score Belief | | | Test Score | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean Dep. Var.	0.091	0.127	0.118	0.044	0.0611	0.125	0.139	0.195	0.108
Pooled Caste Treatments	0.154			0.209			0.140		
	(0.0762)			(0.0751)			(0.0539)		
Tcaste Child		0.180			0.220			0.115	
		(0.0988)			(0.105)			(0.0666)	
Tcaste Parent-Child			0.110			0.0961			0.140
			(0.115)			(0.118)			(0.0873)
Observations	1354	684	670	1355	685	670	1597	929	668
R-squared	0.244	0.295	0.297	0.249	0.335	0.273	0.27	0.315	0.327

Notes: Each column is a regression of the listed dependent variable on either the treatment group with caste primed children (Columns 2, 5, and 8), or the treatment group with caste primed parent-child pairs (Columns 3, 6, and 9), or a regressor that pools both treatment groups (Columns 1, 4, and 7). All test score aspirations, beliefs, and realized test scores are standardized. The sample consists of high caste children. All specifications include the following controls: the pre-test score, a male dummy, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor, time period, and villageXgrade fixed effects. Standard errors are clustered at the child level, and are provided in the parantheses.

Table 12: EXPERIMENT II: EFFECTS OF PRIMING CASTE ON LOW CASTE SUBJECTS

	Test Score Aspiration			Test Score Belief			Test Score		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mean Dep. Var.	0.0049	-0.0341	0.0433	-0.0069	-0.0366	0.0221	0.0612	0.0867	0.026
Pooled Caste Treatments	0.0373			0.0461			-0.0189		
	(0.0502)			(0.0522)			(0.0381)		
Tcaste Child		0.109			0.0863			-0.0305	
		(0.0757)			(0.0761)			(0.0505)	
Tcaste Parent-Child			-0.0463			-0.0220			-0.0226
			(0.0651)			(0.0706)			(0.0559)
Observations	2372	1175	1197	2370	1174	1196	2838	1645	1193
R-squared	0.178	0.216	0.233	0.232	0.276	0.291	0.294	0.305	0.354

Notes: Each column is a regression of the listed dependent variable on either the treatment group with caste primed children (Columns 2, 5, and 8), or the treatment group with caste primed parent-child pairs (Columns 3, 6, and 9), or a regressor that pools both treatment groups (Columns 1, 4, and 7). All test score aspirations, beliefs, and realized test scores are standardized. The sample consists of low caste children. All specifications include the following controls: the pre-test score, a male dummy, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor, time period, and villageXgrade fixed effects. Standard errors are clustered at the child level, and are provided in the parantheses.

Table 13: EFFECTS OF PARENTAL INVOLVEMENT IN EDUCATION

	Test Score Aspiration		Test Score Belief		Test Score	
	(1)	(2)	(3)	(4)	(5)	(6)
Tjoint	0.170	-0.00839	0.145	-0.0339	-0.00685	-0.0835
	(0.0606)	(0.0966)	(0.0590)	(0.0885)	(0.0446)	(0.0664)
Male Dummy	0.0147	-0.143	0.0655	-0.0925	0.0989	0.0311
	(0.0715)	(0.0911)	(0.0712)	(0.0902)	(0.0528)	(0.0681)
Tjoint*Male Dummy		0.319		0.320		0.137
		(0.122)		(0.118)		(0.0883)
Observations	1895	1895	1895	1895	1892	1892
R-squared	0.205	0.211	0.262	0.268	0.293	0.294

Notes: Each column is a regression of the listed dependent variable on the dummy for treatment group Tjoint, which consisted of neutral (non-primed) parent-child pairs and a male dummy, and controls (Columns 1, 3, and 5). The suppressed, or comparison group consists of children in the treatment with neutral (non-primed) and in the pure control group. Columns 2, 4, and 6 include an interaction of Tjoint and the male dummy. All specifications include the following controls: the pre-test score, a dummy for whether the respondent belongs to a low caste, whether they had a sibling also in the experiment, whether the aspiration question was asked first or second, and surveyor, time period, and villageXgrade fixed effects. Standard errors are clustered at the child level.
Standard errors are provided in parantheses.

Table 14: EFFECTS OF HAVING "HIGH" ASPIRATIONS ON OUTCOMES

	Dependent Variables:			
	Test Score Aspiration	Test Score Belief	Aspiration-Score Diff.	Test Score
	Reduced Form Estimates			IV Estimate
	(1)	(2)	(3)	(5)
Aspiration asked Second	0.120	0.00389	0.528	
	(0.0401)	(0.0424)	(0.111)	
Aspiration-Score Difference				-0.155
				(0.0780)
Standardized Pre-test Score	0.232	0.265	-0.128	0.260
	(0.000)	(0.000)	(0.025)	(0.000)
Observations	5598	5598	5536	5520

Notes: Columns 1-4 provide reduced form estimates, while Column (5) provides the instrumental variable estimate, using whether or not the aspiration question was asked second (that is, after the belief question) as the instrument. The Aspiration-Score difference is defined as the difference between the stated score aspiration in period t, and the test score realization in period t-1. All specifications include the following controls: the pre-test score, a gender dummy, and time period fixed effects. Standard errors are clustered at the child level, and provided in parantheses.

Appendix [For Online Publication]

APPENDIX A

The Classification of Castes

The Indian census classifies citizens into broad social categories. In particular, individuals from the so-called lower castes usually belong to one of three categories: Scheduled Caste (SC), Scheduled Tribe (ST), and Other Backward Castes (OBC). Other citizens are grouped under a "general" category. In the day-to-day lives of people however, there exist finer community groupings called *jati*. What caste or *jati* someone belongs to, is typically common knowledge, and one is able to easily infer someone's caste from their last name.

In order to classify the sample into "low" and "high" castes, and gain a better understand of each of the castes across the study villages, I conducted two village surveys that provided information on the social hierarchy of the castes residing in each of the villages. First, a survey was conducted with (i) a panchayat (village government) official and (ii) a school official (typically the headmaster or headmistress). These individuals are not all residents of the village, but work there, and know the village well. These village surveys consisted of questions related to the social ranking of each community. Importantly, the village survey administered to the two village officials asked about the caste classification for each caste, according to the centuries-long Hindu tradition of the *Varna*, or Caste System, which classifies each caste as either Brahmin, Kshatriya, Vaishya, or Shudra. Traditionally, Brahmins were considered the highest caste, followed by the Kshatriyas, then the Vaishyas, and finally, Shudras. For each caste within each village, I classify a particular caste as beling a "low" caste if both village officials classified that particular caste as the lowest (or "Shudra") caste[33]. The remaining castes are classified as "high", though to be accurate, these groups consist of all groups that are simply not part of the lowest (Shudra) group.

A second survey was conducted amongst residents of the village by picking one adult respondent from each hamlet within the village. These village surveys consisted of questions asking for a list of communities in the village that the respondent believes to have

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33. Inconsistencies between the officials were rare in any case.

(i) influence in decision making, as well as questions about (ii) which communities the respondent believes speak up the most at village meetings. In addition, the surveys collected information on the access to public goods within in each hamlet, which communities reside close together and share the same water source. I use the second set of village surveys conducted within each hamlet of each village to identify these communities that have greatest "voice" and "decision-making power" in the village[34]. To do this, I assign scores for "voice" and "decision-making power" as follows:

$$Voice_{i,j} = \frac{\sum_{k=1}^{H_j} I_V(k,\, i)}{H_j} \tag{4}$$

where $Voice_{i,j}$ corresponds to the measure of "voice" for social group i in village j. H_j is the number of hamlets in village j, and $I_V(k, i)$ is an indicator function that takes value 1 if the hamlet k respondent names social group i as one of the groups that speaks up the most at village meetings.

Similarly, a score for decision-making power was assigned as follows:

$$Decision_{i,j} = \frac{\sum_{k=1}^{H_j} I_D(k,\, i)}{H_j} \tag{5}$$

where $Decision_{i,j}$ corresponds to the measure of decision-making power for social group i in village j. H_j is the number of hamlets in village j, and $I_D(k, i)$ is an indicator function that takes value 1 if the hamlet k respondent names social group i as one of the groups that is most influential when it comes to making decisions for the village as a whole.

To check if the classification of castes used to divide the study sample into "low" and "high" categories, is consistent with actual perceptions and behaviors in the study villages, Table A.1. illustrates the relationship between this caste classification, and standardized measures of voice and decision making described above. We see strong relationships between these measures and whether a subject is classified as belonging to a low (*Shudra*) caste: in particular, belonging to a low (*Shudra*) caste is associated with a 0.5 standard

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34. A previous version of the paper used information from this survey to construct measures "voice" and "decision making authority", and used this to classify castes as high or low. While there is high correlation between such a ranking and the classification used in the paper (using the *Varna* system), the latter was chosen for the analysis since the system has been well known for centuries, is common knowledge throughout the country, and is therefore a more natural way to classify castes in the region.

deviation reduction in "voice", and a 0.32 standard deviation reduction in decision-making power (all p-values are 0.000). This exercise provides further support for the caste classification used in the analysis, and illustrates that even though the Caste (*Varna*) System was abolished decades ago, the traditional social hierarchies remain in place and persist to this day.

TABLE A.1. LOW CASTES HAVE LESS VOICE AND DECISION-MAKING POWER

Dependent Variable	Voice	Voice	Decision	Decision
	(1)	(2)	(3)	(4)
Low Caste Dummy	-0.400	-0.504	-0.267	-0.319
	(0.0687)	(0.0775)	(0.0714)	(0.0788)
Village Fixed Effects	No	Yes	No	Yes
R-squared	0.0366	0.0462	0.0170	0.0204
Observations	893	893	806	806

Notes: Each column in a regression of the measures of standardized "voice" (Columns 1 and 2) and "decsion-making power" (Columns 3 and 4), on a dummy for whethe the subject belongs to a low caste. Columns 2 and 4 contain village fixed effects. Standard errors are shown in the parantheses.

Appendix B

(a) Women

(b) A Man

Figure B.1. Differences Across Genders (in clothing)

(a) Caste 1

(b) Caste 2

Figure B.2. Differences Across Castes (in turban color)

Also note difference in clothing and jewelry (bangles) between the women in Figure B.1.a and those in Figure B.2..

APPENDIX C

TABLE C.1. BALANCE CHECK: FULL SAMPLE

Dependent Variable is Dummy for:	Tgender Child	Tgender Parent-Child	Tcaste Child	Tcaste Parent-Child	Tneutral Child	Tneutral Parent-Child	Pure Control
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male Dummy	-0.008	0.029	0.014	-0.027	0.004	-0.019	0.009
	(0.026)	(0.028)	(0.025)	(0.028)	(0.026)	(0.027)	(0.027)
Standardized Pre-Test Score	-0.012	0.010	0.009	-0.018	0.008	-0.007	0.011
	(0.013)	(0.013)	(0.013)	(0.012)	(0.012)	(0.011)	(0.013)
Dummy for Grade 7	0.006	-0.009	-0.012	-0.011	-0.008	0.013	0.020
	(0.030)	(0.029)	(0.028)	(0.030)	(0.029)	(0.028)	(0.029)
Dummy for Grade 8	-0.008	-0.020	0.003	-0.012	0.023	0.011	0.003
	(0.030)	(0.030)	(0.030)	(0.031)	(0.031)	(0.030)	(0.030)
Dummy for Low Caste	0.032	0.001	0.000	-0.014	-0.029	0.022	-0.012
	(0.025)	(0.026)	(0.025)	(0.026)	(0.026)	(0.025)	(0.025)
Highest Level of Schooling for Male in Household	-0.008	0.003	0.002	0.008	-0.002	0.005	-0.008
	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)
Highest Level of Schooling for Female in Household	-0.004	0.004	0.002	-0.000	-0.004	0.004	-0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Number of Household Members	0.004	0.003	0.003	-0.005	-0.002	-0.011	0.008
	(0.008)	(0.008)	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)
Number of Children in the Household	0.011	-0.003	-0.004	-0.004	0.011	0.002	-0.013
	(0.013)	(0.013)	(0.013)	(0.012)	(0.014)	(0.013)	(0.013)
Aspiration Question asked after Belief	0.000	-0.001	-0.010	-0.013	-0.009	0.014	0.018
	(0.024)	(0.024)	(0.023)	(0.024)	(0.024)	(0.023)	(0.024)
Dummy for whether Household is Engaged in Agriculture	-0.016	0.015	0.019	0.049	-0.004	-0.019	-0.044
	(0.025)	(0.024)	(0.023)	(0.025)	(0.024)	(0.023)	(0.024)
Observations	881	881	881	881	881	881	881
Dependent Variable Mean	0.148	0.144	0.136	0.146	0.146	0.136	0.143
P-Value of F-Test for Joint Significance	0.479	0.962	0.992	0.441	0.883	0.789	0.501

Notes: Each column of this table is a regression of a dummy for either a treatment or control group, regressed on individual and household characteristics. The last row of the table provides the p-value of the F test of joint significance for each regression. Robust standard errors are shows in parantheses.

TABLE C.2. BALANCE CHECK: FEMALES

Dependent Variable is Dummy for:	Tgender Child	Tgender Parent-Child	Tcaste Child	Tcaste Parent-Child	Tneutral Child	Tneutral Parent-Child	Pure Control
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male Dummy	-	-	-	-	-	-	-
Standardized Pre-Test Score	-0.010	0.011	-0.003	-0.013	-0.001	0.004	0.013
	(0.018)	(0.017)	(0.018)	(0.019)	(0.015)	(0.018)	(0.020)
Dummy for Grade 7	0.014	-0.048	-0.030	0.012	0.004	0.014	0.035
	(0.046)	(0.044)	(0.043)	(0.044)	(0.042)	(0.043)	(0.042)
Dummy for Grade 8	-0.042	-0.048	-0.033	0.028	0.043	0.018	0.034
	(0.044)	(0.046)	(0.044)	(0.048)	(0.049)	(0.049)	(0.042)
Dummy for Low Caste	0.042	0.005	-0.006	0.043	-0.043	0.027	-0.068
	(0.037)	(0.038)	(0.037)	(0.037)	(0.037)	(0.039)	(0.038)
Highest Level of Schooling for Male in Household	-0.005	0.005	-0.002	0.009	-0.008	0.008	-0.007
	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)
Highest Level of Schooling for Female in Household	0.006	0.013	0.014	-0.024	-0.005	0.004	-0.008
	(0.012)	(0.010)	(0.011)	(0.011)	(0.012)	(0.013)	(0.008)
Number of Household Members	0.005	0.005	0.008	-0.012	-0.007	-0.021	0.021
	(0.012)	(0.013)	(0.013)	(0.012)	(0.012)	(0.011)	(0.013)
Number of Children in the Household	-0.008	-0.010	-0.012	0.008	0.017	0.032	-0.026
	(0.021)	(0.019)	(0.018)	(0.018)	(0.020)	(0.020)	(0.018)
Aspiration Question asked after Belief	0.043	-0.030	-0.016	-0.033	-0.013	0.011	0.038
	(0.037)	(0.035)	(0.034)	(0.037)	(0.036)	(0.037)	(0.036)
Dummy for whether Household is Engaged in Agriculture	0.008	-0.034	0.038	0.027	0.016	0.012	-0.067
	(0.040)	(0.037)	(0.034)	(0.040)	(0.035)	(0.039)	(0.036)
Observations	388	388	388	388	388	388	388
Dependent Variable Mean	0.152	0.131	0.129	0.160	0.142	0.147	0.139
P-Value of F-Test for Joint Significance	0.816	0.870	0.932	0.278	0.673	0.711	0.210

Notes: Each column of this table is a regression of a dummy for either a treatment or control group, regressed on individual and household characteristics. The last row of the table provides the p-value of the F test of joint significance for each regression. Robust standard errors are shows in parantheses.

TABLE C.3. BALANCE CHECK: MALES

Dependent Variable is Dummy for:	Tgender Child	Tgender Parent-Child	Tcaste Child	Tcaste Parent-Child	Tneutral Child	Tneutral Parent-Child	Pure Control
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male Dummy	-	-	-	-	-	-	-
Standardized Pre-Test Score	-0.014	0.005	0.013	-0.022	0.013	-0.011	0.016
	(0.018)	(0.019)	(0.019)	(0.015)	(0.018)	(0.015)	(0.018)
Dummy for Grade 7	-0.001	0.023	-0.011	-0.017	-0.023	0.017	0.012
	(0.040)	(0.041)	(0.038)	(0.040)	(0.041)	(0.040)	(0.041)
Dummy for Grade 8	0.010	0.006	0.012	-0.018	-0.003	0.012	-0.018
	(0.042)	(0.041)	(0.043)	(0.041)	(0.043)	(0.041)	(0.043)
Dummy for Low Caste	0.021	0.001	-0.002	-0.056	-0.021	0.012	0.044
	(0.035)	(0.036)	(0.036)	(0.035)	(0.037)	(0.033)	(0.033)
Highest Level of Schooling for Male in Household	-0.009	-0.003	0.012	0.007	0.012	-0.005	-0.013
	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)	(0.007)	(0.008)
Highest Level of Schooling for Female in Household	-0.007	0.004	-0.001	0.003	-0.006	0.006	0.001
	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)
Number of Household Members	0.001	0.006	-0.002	0.000	-0.001	-0.004	0.000
	(0.010)	(0.010)	(0.011)	(0.009)	(0.012)	(0.010)	(0.010)
Number of Children in the Household	0.027	-0.003	0.006	-0.014	0.015	-0.028	-0.004
	(0.017)	(0.019)	(0.018)	(0.016)	(0.020)	(0.017)	(0.018)
Aspiration Question asked after Belief	-0.032	0.022	-0.010	0.008	-0.009	0.018	0.003
	(0.032)	(0.033)	(0.032)	(0.031)	(0.034)	(0.030)	(0.032)
Dummy for whether Household is Engaged in Agriculture	-0.039	0.052	-0.001	0.071	-0.016	-0.041	-0.026
	(0.032)	(0.033)	(0.032)	(0.032)	(0.033)	(0.030)	(0.033)
Observations	493	493	493	493	493	493	493
Dependent Variable Mean	0.144	0.154	0.142	0.136	0.150	0.128	0.146
P-Value of F-Test for Joint Significance	0.313	0.867	0.902	0.302	0.865	0.279	0.640

Notes: Each column of this table is a regression of a dummy for either a treatment or control group, regressed on individual and household characteristics. The last row of the table provides the p-value of the F test of joint significance for each regression. Robust standard errors are shows in parantheses.

TABLE C.4. BALANCE CHECK: HIGH CASTE

Dependent Variable is Dummy for:	Tgender Child	Tgender Parent-Child	Tcaste Child	Tcaste Parent-Child	Tneutral Child	Tneutral Parent-Child	Pure Control
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male Dummy	0.001	0.024	0.014	0.010	-0.003	0.008	-0.054
	(0.042)	(0.045)	(0.040)	(0.047)	(0.045)	(0.040)	(0.045)
Standardized Pre-Test Score	0.010	0.021	-0.011	-0.027	-0.004	-0.004	0.015
	(0.023)	(0.024)	(0.021)	(0.024)	(0.021)	(0.022)	(0.024)
Dummy for Grade 7	-0.056	-0.026	-0.002	-0.029	0.011	0.029	0.072
	(0.052)	(0.052)	(0.050)	(0.049)	(0.052)	(0.047)	(0.054)
Dummy for Grade 8	-0.092	-0.046	0.016	0.023	0.046	0.045	0.008
	(0.048)	(0.053)	(0.052)	(0.053)	(0.056)	(0.051)	(0.048)
Dummy for Low Caste	-	-	-	-	-	-	-
Highest Level of Schooling for Male in Household	0.001	-0.003	0.010	0.021	-0.005	-0.005	-0.017
	(0.006)	(0.007)	(0.008)	(0.007)	(0.007)	(0.007)	(0.008)
Highest Level of Schooling for Female in Household	-0.005	0.007	-0.003	-0.006	-0.005	0.009	0.003
	(0.006)	(0.007)	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)
Number of Household Members	-0.017	0.013	-0.013	-0.011	0.013	-0.008	0.023
	(0.012)	(0.013)	(0.014)	(0.014)	(0.015)	(0.013)	(0.016)
Number of Children in the Household	0.038	0.028	-0.009	-0.013	-0.016	0.002	-0.031
	(0.020)	(0.022)	(0.023)	(0.020)	(0.023)	(0.021)	(0.024)
Aspiration Question asked after Belief	-0.009	0.039	-0.054	-0.049	-0.006	0.043	0.036
	(0.039)	(0.042)	(0.038)	(0.043)	(0.043)	(0.040)	(0.042)
Dummy for whether Household is Engaged in Agriculture	0.015	0.014	0.034	0.035	-0.028	-0.012	-0.058
	(0.041)	(0.043)	(0.040)	(0.043)	(0.047)	(0.040)	(0.044)
Observations	301	301	301	301	301	301	301
Dependent Variable Mean	0.123	0.143	0.136	0.153	0.166	0.126	0.153
P-Value of F-Test for Joint Significance	0.661	0.499	0.779	0.103	0.987	0.937	0.163

Notes: Each column of this table is a regression of a dummy for either a treatment or control group, regressed on individual and household characteristics. The last row of the table provides the p-value of the F test of joint significance for each regression. Robust standard errors are shows in parantheses.

TABLE C.5. BALANCE CHECK: LOW CASTE

Dependent Variable is Dummy for:	Tgender Child	Tgender Parent-Child	Tcaste Child	Tcaste Parent-Child	Tneutral Child	Tneutral Parent-Child	Pure Control
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male Dummy	-0.014	0.025	0.016	-0.041	0.011	-0.040	0.043
	(0.034)	(0.035)	(0.033)	(0.035)	(0.031)	(0.036)	(0.033)
Standardized Pre-Test Score	-0.022	0.008	0.017	-0.020	0.012	-0.006	0.012
	(0.016)	(0.015)	(0.016)	(0.014)	(0.014)	(0.014)	(0.016)
Dummy for Grade 7	0.032	-0.000	-0.021	-0.009	-0.014	0.010	0.003
	(0.037)	(0.036)	(0.035)	(0.036)	(0.035)	(0.035)	(0.035)
Dummy for Grade 8	0.034	-0.018	0.004	-0.027	0.015	-0.009	0.001
	(0.038)	(0.037)	(0.037)	(0.038)	(0.037)	(0.037)	(0.037)
Dummy for Low Caste	-	-	-	-	-	-	-
Highest Level of Schooling for Male in Household	-0.012	0.005	-0.001	0.001	-0.001	0.011	-0.004
	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)	(0.006)	(0.005)
Highest Level of Schooling for Female in Household	-0.004	0.005	0.002	0.001	-0.004	0.002	-0.002
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Number of Household Members	0.013	-0.001	0.010	-0.002	-0.008	-0.013	0.001
	(0.010)	(0.010)	(0.010)	(0.008)	(0.010)	(0.009)	(0.009)
Number of Children in the Household	-0.002	-0.023	-0.001	-0.001	0.025	0.002	-0.001
	(0.017)	(0.017)	(0.015)	(0.015)	(0.018)	(0.017)	(0.015)
Aspiration Question asked after Belief	0.003	-0.017	0.010	-0.000	-0.011	0.003	0.013
	(0.031)	(0.029)	(0.029)	(0.030)	(0.029)	(0.029)	(0.029)
Dummy for whether Household is Engaged in Agriculture	-0.030	0.013	0.010	0.059	0.008	-0.026	-0.034
	(0.031)	(0.030)	(0.029)	(0.030)	(0.029)	(0.029)	(0.029)
Observations	580	580	580	580	580	580	580
Dependent Variable Mean	0.160	0.145	0.136	0.143	0.136	0.141	0.138
P-Value of F-Test for Joint Significance	0.342	0.847	0.930	0.450	0.870	0.749	0.825

Notes: Each column of this table is a regression of a dummy for either a treatment or control group, regressed on individual and household characteristics. The last row of the table provides the p-value of the F test of joint significance for each regression. Robust standard errors are shows in parantheses.

	Dependent Variable: Standardized Test Score	
	(1)	(2)
Tneutral Child	0.0235	0.0536
	(0.0482)	(0.0664)
Male Dummy	0.0273	0.0245
	(0.0501)	(0.0506)
Tneutral Child * Male Dummy		-0.0633
		(0.0956)
R-Squared	0.312	0.312
Observations	1683	1683

Notes: Each column is a regression of the standardized test score on the dummy for treatment group Tneutral Child, which consisted of neutral (non-primed) children, a male dummy, an interaction of the two (only for Column 2), and controls. The suppressed, or comparison group consists of children in the in the pure control group. All specifications include the following controls: the pre-test score, a dummy for whether the respondent belongs to a low caste, whether they had a sibling also in the experiment, time period, and villageXgrade fixed effects. Standard errors are clustered at the child level. Standard errors are provided in parantheses.

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