Social Status and Motivated Beliefs*

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Abstract

This paper shows that social status determines economic achievement by means of a psychological mechanism. Specifically, social status influences the way individuals form beliefs about their abilities and these beliefs are crucial for achievement. A theoretical framework formalizes the proposed mechanism and generates a set of testable predictions. Data from a cohort study and from two controlled experiments corroborate the validity of the theoretical predictions and, thus, of the proposed mechanism. In particular, the cohort study data show that the social status of individuals at adulthood is determined by their social status at birth, but primarily through the influence that social status at birth has on the individuals' hopes and beliefs about educational achievement at adolescence. The experiments demonstrate that subjects with similar ability on a cognitively demanding task exhibit higher beliefs about their own performance and, consequently, higher performance when assigned to a high rather than a low status treatment. This study highlights the role of social status in creating constraints that are internal to the individual and that have the potential to impair economic success.

Keywords: Social Status, Beliefs, Self-Confidence, Achievement, Experiments.

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1. Introduction

How does social status at birth affect economic success? This question has received considerable attention from economists, who have established that several aspects of social status early in life are important for explaining economic outcomes at adulthood, including parents' income and education (Plug and Vijverberg, 2005, 2003, Sacerdote, 2002), prenatal and neonatal conditions(Field et al., 2009, Bharadwaj et al., 2013), and neighborhood during early childhood (Chetty and Hendren, 2018, Chetty et al., 2015, Borjas, 1995) among others. This study proposes an alternative mechanism linking social status to economic achievement. Specifically, I propose that the position of individuals in society determines how they form beliefs about their own abilities, and these beliefs have a considerable influence on achievement.

Typically, the influence of social status on economic success has been attributed to material advantages inherent to the social position that is held. For instance, higher social status at birth, associated with higher parental income, allows for the provision of higher-quality education and healthcare and grants easier access to credit, all of which increase the chances of economic success (Okten and Osili, 2004, Deaton, 2003, Uzzi, 1999, Fershtman and Murphy, 1996). These approaches focus on the role of constraints, or the lack of them, that are *external* to individuals. In other words, these approaches assume that regardless of preferences, beliefs, or behavioral biases, that individuals face limited access to certain markets of goods and services is sufficient to impair their economic success. In contrast, this study identifies a mechanism whereby social status confers advantages or disadvantages via constraints that are *internal* to individuals. Specifically, I show that social status, above and beyond the material advantages and disadvantages that it entails, induces beliefs that can constrain or encourage individual achievement.[1]

Central to my proposal is the notion that individuals' beliefs about their abilities and performance on productive activities complement each other (See Dalton et al. (2016), Koszegi (2006), Compte and Postlewaite (2004), and Benabou and Tirole (2002) for some evidence on this relationship). Economic achievement is thus not only determined by abilities, but is reinforced by beliefs about these abilities. In addition, individuals are sophisticated in that they understand the relationship between beliefs and performance. However, if advantageous, they can use their position in society to hold favorable, but potentially incorrect beliefs. For instance, individuals belonging to a high status form high beliefs about their abilities, even though those abilities could in fact be low. This captures settings in which individuals attribute their social standing to their abilities, say, by appealing to prevalent conceptions about meritocracy in the society, by envisioning successful role models that share similar

[1] An extended definition of internal and external constraints can be found in Ghatak (2015).

backgrounds, or simply due to deep-rooted reactions toward social ranks that enhance self-confidence. This process creates a disadvantage for low status individuals, who cannot form and maintain high beliefs in a similar vein as high status individuals can.

To establish the existence of the proposed mechanism, I examine through theoretical reasoning and empirical methods whether individuals with similar abilities exhibit beliefs and achievement differences when belonging to a different social status. This framework intends to reflect environments in which economic outcomes are exclusively achieved by means of ability and motivation. The considered framework is advantageous for the study of internal constraints inasmuch as the influence of external constraints can be ruled out. Additionally, confining myself to this framework allows me to provide simple theoretical conditions guaranteeing the existence of the mechanism as well as the possibility of generate clean corroborative empirical evidence. Nevertheless, these advantages come at the cost of generalizability, and the present study should be regarded as a proof of concept of the suggested influence of social status.[2]

Throughout this study I adhere to Ridgeway and Walker (1995)'s definition of social status, who characterize it as the *"rank between individuals associated with prestige"*. According to their definition, social status involves a degree of social recognition, but it does not necessarily entail material advantages and is not necessarily earned. Standard economic theory predicts that these *mere* social ranks do not influence achievement. However, the main result presented in this paper goes against this prediction. I show theoretically and empirically that social ranks, even when they do not yield material advantages and do not entail valuable information about individual ability, influence achievement by means of the different beliefs, i.e. the internal constraints, that they engender.

A theoretical model formalizes the proposed mechanism and provides testable predictions. The model demonstrates that social status influences performance on a productive and profitable task in a restrictive setting. Specifically, I assume that individuals are fully informed about their ability on the task, they know that social status and ability can be correlated, and they are informed about the exact degree of correlation between these two variables. Hence, in this setup, social status cannot influence performance through misinformation. Instead, under such conditions individuals can incorrectly, but deliberately, incorporate social status in their belief system when such inaccuracy is profitable. Either

[2] A more complete modeling framework should take into account markets for goods and services and their general equilibria, the possibility of market frictions and the existence of systemic risk that affects outcomes and the acquisition and accumulation of capital. Nevertheless, the difficulty of such framework is allowing the researcher distinguish the influence of internal and external constraints. In the last section of this paper, I discuss the weaknesses of the modeling and empirical strategies used in the paper and propose avenues for future research.

because maintaining favorable beliefs boosts motivation on the task or because holding favorable beliefs yields utility gains. When sufficiently large, these benefits can make up for the costs of such inaccuracy, such as the cost of exerting excessively high levels of effort on the task or the cognitive costs associated with ignoring or forgetting relevant information about their ability. In contrast, when the costs of being inaccurate are too steep or when utility is standard in that it exclusively depends on the monetary rewards offered by the task, beliefs and performance are not influenced by social status and are only determined by ability. These two opposing results develop into the main testable predictions of the model.

Data from the British cohort study provide empirical evidence that is suggestive of the proposed mechanism. These data are suitable to examine the validity of the predictions generated by the model since they comprise information of all individuals born in Britain during a week of 1970 over most of their lifespan. I use these data to investigate whether the beliefs and hopes of these individuals about their educational achievement at adolescence are determined by their social status at birth and whether this influence transcends in their life, affecting their economic achievement at adulthood. I find that individuals born in a household belonging to a high socio-economic status exhibit a higher likelihood of aspiring to high education levels as compared to individuals born in low socio-economic status households. The data also suggest that this positive relationship between educational aspirations and socio-economic status at birth has a significant impact on the individuals' achieved socio-economic status. These results are robust to controlling for factors that are well-known to affect achievement such as cognitive ability (Cunha et al., 2010), non-cognitive traits such as personality and locus of control (Heckman et al., 2006, Bowles et al., 2001), parents' expectations (Besley, 2016, Jensen, 2010), and neighborhood characteristics (Chetty and Hendren, 2018, Chetty et al., 2015).

That the findings of the cohort data corroborate my proposal hinges on very demanding assumptions such as *predeterminedness*, i.e. that hopes and beliefs about educational achievement at adolescence do not affect social status at birth, that external constraints play no role in the formation of aspirations, and that no relevant variable being omitted from the statistical model, among others. Hence, to complement these results I run two controlled laboratory experiments. In the experiments, subjects are assigned to one of two treatments: high status or low status. Belonging to high status entails receiving social recognition from other participants in the experiment and a positional good, a medal, with low market value. Moreover, a cognitively challenging task, for which performance is more likely to depend on subjects' ability rather than on their motivation, is implemented before and after the status assignment took place. The first implementation serves to classify participants according to their initial ability on the task. The second implementation measures performance after social status is assigned and in a setup in which the accurate completion of the task entails monetary incentives. Throughout the experiments subjects are given feedback on the task as well as the opportunity to access a rank that informs them about how well they perform the task in comparison to others. In addition, the beliefs of subjects about how well they perform the task were elicited on multiple occasions throughout each session.

In the first experiment, subjects were *randomly* assigned high or low status. The main finding of this experiment is that low ability subjects assigned to low status display low performance levels while subjects with similar ability who were assigned to high status display high performance. The same qualitative dependence with respect to social status emerges in their beliefs data. Altogether, these results are in line with the proposed mechanism: individuals with the capacity to reach high outcomes become internally constrained when assigned to low status, causing them to form low beliefs which are followed by low performance levels. The second experiment is different in that the assignment to high status was *meritocratic*. This means that subjects who exhibited higher ability on the task in the first implementation of the task were assigned to high status. The data from this experiment show that subjects with low ability display low performance as well as low beliefs. Thus, the results of the second experiment corroborate that low ability individuals display low beliefs and low performance, unless assigned to the high status treatment.

Finally, data on the subjects' decision to acquire information about their performance relative to that of others corroborates that social status, when favorable, is used by subjects to generate motivated beliefs. In particular, subjects who benefited the most from the treatment assignment, i.e. those who exhibit higher performance and beliefs when assigned to high status treatment, are less likely to access the rank containing relative performance information. Suggesting that these subjects successfully boost their motivation on the task by deliberately misinterpreting the social status assignment and avoid acquiring information that could contradict these self-serving beliefs.

Contribution to existing literature

This paper contributes to multiple strands of literature. First, it contributes to the literature on confidence maintenance and motivated beliefs (Benabou, 2015, Mobius et al., 2014, Compte and Postlewaite, 2004, Benabou and Tirole, 2002). Although the theoretical framework is an adaptation of Benabou (2015) and Benabou and Tirole (2002), my results add novel interpretations and attributes to these models. For instance, I show that another mechanism to induce motivated beliefs, next to imperfect recall, is the deliberate misinterpretation of social constructs and social signals. Also, I show that in the presence of two dimensions of types, i.e. ability and social status, and the possibility that these two dimensions are correlated, the intrapersonal equilibria depicted in Benabou (2015) emerges and is sustained under fairly similar conditions.

Moreover, the experimental data display clean evidence of subjects engaging in motivated beliefs through self-deception. In particular, subjects suppress relevant information about their ability, e.g. frequent feedback on the task, and instead behave according to their assigned social status when this assignment is favorable. These data also suggest that, when given the chance, subjects acquire less information about their relative performance on the task when such information can contradict a favorable status assignment and, as a consequence, be detrimental to maintaining high self-confidence. Altogether, these findings support the results of Eil and Rao (2011) and Mobius et al. (2014) in a context whereby favorable or unfavorable news are determined by social status.

Second, the present paper adds to the theoretical literature that investigates the influence of social status on economic outcomes. The literature on this topic shows that the inclusion of preferences for social status — that is, that individuals intrinsically prefer to outrank others — could explain relevant economic phenomena. For instance, individual preferences for social status create consumption and saving behaviors that create and perpetuate inequality (Ray and Robson, 2012, Hopkins and Kornienko, 2010, 2004, Robson, 1992). Also, these preferences allow a principal achieve higher worker performance by implementing contests within the organization (Besley and Ghatak, 2008, Auriol and Renault, 2008, Moldovanu et al., 2007). I contribute to this literature by demonstrating that social status has the potential to generate unequal outcomes in the absence of preferences for social status as well as in the absence of environments where there is competition for social status.

Finally, this paper contributes to the recent literature in economics that studies the role of psychological constructs such as aspirations, beliefs, and self-esteem in influencing economic achievement (Genicot and Ray, 2017, Dalton et al., 2016, Bogliacino and Ortoleva, 2015, Blanden et al., 2007, Bowles et al., 2001). I propose a novel mechanism that demonstrates that individuals who belong to a low social status can exhibit low achievement as a consequence of having low aspirations, low expectations, or low beliefs about their own capabilities. On the theoretical side, individuals in my model internalize the positive relationship between performance and beliefs, which is the main difference with respect to Dalton et al. (2016). Moreover, in comparison to Genicot and Ray (2017), Bogliacino and Ortoleva (2015), and Dalton et al. (2016), I do not assume that individuals' preferences exhibit non-convexities which can capture the notion that when beliefs — aspirations in their setup — are too high, they lead to frustration and consequently to low outcomes. Instead, in my framework, if self-deception is available and is profitable, it leads to a strategic interaction within the individual whereby excessively favorable beliefs are not credible and cause low performance and achievement. On the empirical side, the analysis of the cohort study data is not only suggestive of my proposal but also of that of Dalton et al. (2016) and Genicot and Ray (2017). In addition, the experimental data provide clean and conclusive evidence of motivated beliefs through social status.

2. Theoretical framework

The aim of this section is twofold. First, it formalizes the proposed mechanism. Second, it provides a set of testable predictions. The main feature of the model is that it accommodates the prediction that social status influences performance in a restrictive setting. Specifically, the model assumes that individuals know their ability on a productive and profitable task and also know the precise extent to which social status and ability are correlated.

The model is an adaptation of the theory of motivated beliefs developed by Benabou and Tirole (2002) and Benabou (2015). However, the results presented in this section add novel attributes and insights to these models. Readers interested in more complete descriptions and more elaborated versions of theoretical models on motivated beliefs should refer to these papers.

The benchmark

Consider a risk-neutral individual facing a time horizon of three periods $t = 0, 1, 2$. The individual's problem consists of exerting effort on a productive task at $t = 1$ given some set of information received at $t = 0$, to enjoy the monetary benefits derived from his production at $t = 2$.

In particular, at $t = 0$ the individual receives accurate information about his ability on the task. This can be interpreted as the individual receiving reliable feedback about his past performance on the productive task or in similar tasks. For simplicity, I consider two ability levels: high and low. Formally, let $\theta_i \in \{\theta_H, \theta_L\}$ where $\theta_H > \theta_L$. To ease the exposition of the model, I refer to θ_{-i} as the ability that the agent *does not have.* Moreover, I assume that the distribution of ability is known. That is, it is known that if an individual were drawn at random from the population he would be of high ability with probability $q \in [0, 1]$.

At $t = 0$ the individual also receives a status class that endows him with a social position. There are two status classes in the society: high and low. I represent social status with $\sigma_j \in \{\sigma_H, \sigma_L\}$. Also, it is known that if an individual were drawn at random from the population he would belong to the high status, σ_H, with probability $r \in (0,1)$.[3][4]

Moreover, ability and status can be correlated. Specifically, let $prob(\theta_H, \sigma_H) = prob(\theta_H)prob(\sigma_H) + corr(\theta_H, \sigma_H) = qr + \epsilon$, which implies that a high social position is correlated to having high ability by $0 \leq \epsilon \leq \bar{e}(q,r) < 1$, where the upper bound of the correlation is $\bar{e}(q,r) \equiv (1-q)r$ if $q \geq r$ or $\bar{e}(q,r) \equiv (1-r)q$ if $r > q$. Further, I assume that the degree of correlation between low status and low ability is also captured by ϵ. Thus, the correlation between social status and ability exhibits symmetry. [5] Further, it is assumed that the individual not only knows that status and ability are correlated but also the precise magnitude of ϵ.

After receiving these information, the individual decides at $t = 1$ on the amount of effort to exert in the task. Let $e \in \{e_H, e_L\}$, with $e_H > e_L \geq 0$. For simplicity's sake, let $\Delta e \equiv e_H - e_L = 1$. On one hand, choosing high effort, e_H, generates immediate disutility. I represent such cost of exerting high effort through the function $c(e)$, which is assumed to have the following functional form:

Assumption 1 $c(e) = \begin{cases} c \text{ } \textit{if } e_H, \\ 0 \text{ } \textit{if } e_L. \end{cases}$ *With* $c > 0$.

On the other hand, exerting high effort implies receiving larger monetary rewards, as long as effort and production on the task relate positively. Indeed, it is assumed that effort raises output in a deterministic way. The following assumption presents the production function used in the analysis:

Assumption 2. $b(e, \theta_i) = \theta_i e$.

Finally, I assume that the individual can experience psychological utility. This utility component intends to capture the notion that maintaining high self-confidence about one's diligence on a task can yield utility gains.[6] I model psychological utility by incorporating the individual's belief about his own performance directly in the utility function.

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[3]This way of modeling status is accurate in settings whereby status is assigned or exogeously assigned but is not accurate in representing settings whereby status can be earned as it is the case in contests for status. The work by Auriol and Renault (2008) and Moldovanu et al. (2007) provide complete theoretical frameworks for contests for social status.

[4] The fact that $r \in (0,1)$ entails that not all individuals in the society can belong to the high status, maintaining the positional desirability of holding high social status.

[5] Symmetry emerges as a necessary condition required to respect the assumed marginal probabilities under the representation $prob(\theta_H, \sigma_H) = prob(\theta_H)prob(\sigma_H) + corr(\theta_H, \sigma_H) = qr + \epsilon$. In other words, note that $prob(\theta_H, \sigma_H) + prob(\theta_H, \sigma_L) = q = prob(\theta_H)$ and also $prob(\theta_L, \sigma_H) + prob(\theta_L, \sigma_L) = 1 - q = prob(\theta_L)$ if and only if symmetry is assumed.

[6] An alternative explanation is given by (Benabou, 2015) were psychological utility is due to the emotions and psychosomatic reactions that the agent experiences from anticipating the future welfare levels that he will attain. Similarly, Compte and Postlewaite (2004) shows that keeping optimistic views about oneself, based on past experiences, could enhance future performance, and thus welfare.

All in all, the utility of the individual at $t = 1$ can be written as:[7]

$$U_1(e) = a\theta_i e + sE_1(\theta_i e) - c(e), \tag{1}$$

where $a > 0$ represents a monetary amount quantifying the incentives derived from supplying a level of output y and $s \geq 0$ weights the impact of psychological utility on the overall utility. Since the individual is fully informed about his ability, then $E_1(\theta_i e) = \theta_i e$ and Equation (1) becomes

$$U_1(e) = (a + s)\theta_i e - c(e). \tag{2}$$

Equation (2) demonstrates that the rational individual chooses e_H if that choice generates utility gains, that is as long as $e_H(a + s)\theta_i \geq c$. Instead, if $e_H(a + s)\theta_i < c$, then e_L is chosen. Throughout the paper I focus on the cost schedule $c \in \Big((a + s)\theta_L, (a + s)\theta_H\Big]$ which includes the relevant case in which high ability individuals choose to exert high effort whereas low ability individuals choose low effort.

Hence, the model, as it is, predicts that the agent's decision is not affected by his social status. That is because σ_j has no economic or psychological value to the agent and, thus, does not yield any advantage to perform the task. Therefore, in an environment in which individuals achieve outcomes by means of their own ability and effort, the social status of an individual does not affect his performance in the productive task. This result is robust to setting $s = 0$, so that the independence of effort with respect to social status presented in this subsection is not driven by the incorporation of psychological utility in the individuals' preferences.

Motivated beliefs through self-deception

I depart from the benchmark by introducing self-deception in the model. That is, the individual can now hold deliberately erroneous beliefs about his own ability. However, instead of letting the individual freely manipulate these beliefs, self-deception is modeled as a strategic interaction within him. Thus, incorrect beliefs emerge in this framework as an equilibrium outcome from an intrapersonal interaction and are not the result of mistakes.

In particular, I assume that there is an informed self or *Self 0* who knows θ_i and σ_j, while the other self, *Self 1*, is uninformed about these variables but has the task of choosing e. The interaction between the two selves features information transmission: Self 0 uses the available information to create a composite signal $\tilde{\theta}_k \in \{\tilde{\theta}_H, \tilde{\theta}_L\}$ that is passed to *Self 1*. In particular,

[7] An implicit assumption is that the individual discounts utility using an exponential discount function, $D(t) = \sum_0^T \delta^t$ and that, without loss of generality, he is infinitely patient, $\delta = 1$.

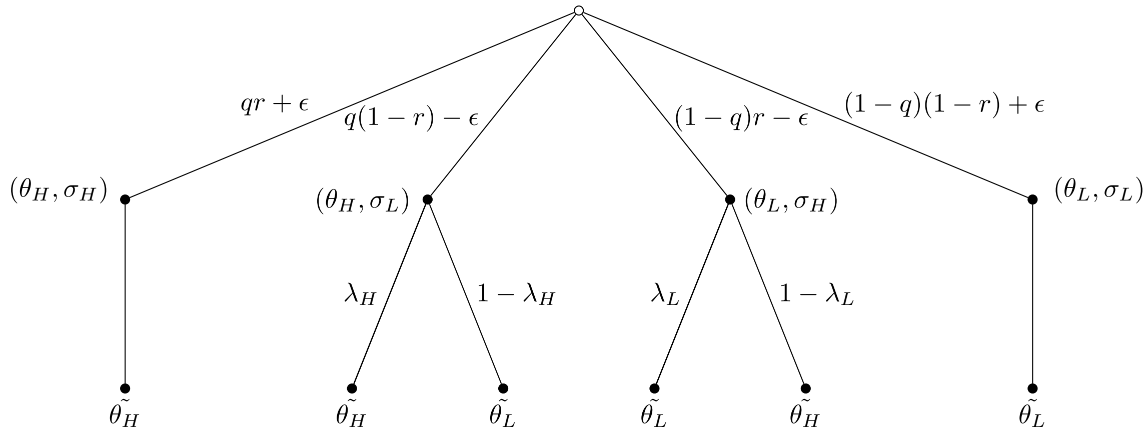

Figure 1: Self 1's reaction to signals

$\tilde{\theta}_k$ may be truthful, accurately mapping the agent's ability $k=i$, or may be distorted, $k=j$ with $i\neq j$. Thus, if Self 0 distorts the truth, he may do so as long as his endowed social status supports the signal that is sent to Self 1. This setting creates a strategic interaction: To derive higher monetary rewards, higher psychological utility from holding high beliefs, or to save on effort costs, Self 0 can send signals that induce inaccurate beliefs which, at the same time, affect Self 1's choice of effort.[8]

To optimally choose e, *Self 1* makes inference about the veracity of $\tilde{\theta}_k$. Specifically, he discounts the received signals using Bayes' rule: when $\tilde{\theta}_k$ is received, he acknowledges that with probability $\lambda_k\in[0,1]$ Self 0 is telling the truth and the state of nature is indeed θ_k, but also that with probability $1-\lambda_k$ Self 0 is lying and he is instead of ability θ_{-k}, the state of nature corresponding to the signal *that was not chosen* by Self 0. Note that it is assumed that $\lambda_k\in[0,1]$ is an endogenous probability. This implies that Self 0 can engage in mixed strategies and that Self 1 can respond to them accordingly. Figure 1 illustrates Self 1's updating process.

Therefore, Self 1's posterior probability that a signal $\tilde{\theta}_H$ reflects the true state of nature is:

$$p_H(\lambda_H,\lambda_L)\equiv\frac{qr+\lambda_H q(1-r)+\epsilon(1-\lambda_H)}{qr+\lambda_H q(1-r)+\epsilon(1-\lambda_H)+\chi\left(r(1-q)-\epsilon\right)(1-\lambda_L)}\ , \tag{3}$$

[8] To build intuition about the incentives that Self 0 faces, consider an scenario in which an agent received the tuple $\{\theta_L,\sigma_H\}$. Self 0 could either send $\tilde{\theta}_L$, a signal reflecting the true state of nature, or $\tilde{\theta}_H$, a distorted signal. Note that the psychological component $E_1(\theta_i e)$ becomes higher when Self 1 believes that his ability are high. However, these beliefs also lead to steeper costs of effort if those higher beliefs lead Self 1 to choose e_H. Thus, depending on how costly exerting the high level of effort is, Self 0 could be better off distorting information sending $\tilde{\theta}_H$.

and his posterior probability that a signal $\tilde{\theta}_L$ reflects the true state of nature is

$$p_L(\lambda_H, \lambda_L) \equiv \frac{(1-q)(1-r) + \lambda_L(1-q)r + \epsilon(1-\lambda_L)}{(1-q)(1-r) + \lambda_L(1-q)r + \epsilon(1-\lambda_L) + \chi\left(q(1-r) - \epsilon\right)(1-\lambda_H)} \, . \tag{4}$$

Note that $p_H(\lambda_H, \lambda_L)$ depends on λ_L in the following way: if Self 0 with low ability *never* engages in self-deception, a favorable signal, $\tilde{\theta_H}$, is always regarded as truthful and $p_H(\lambda_H, 1) = 1$, but if Self 0 with low ability *always* engages in self-deception, a favorable signal is ignored and Self 1 assesses the probability of having high ability according to his prior, that is according to $p_H(\lambda_H, 0) = \frac{qr+\lambda_H q(1-r))+\epsilon(1-\lambda_H)}{qr+\lambda_H q(1-r))+\epsilon(1-\lambda_H)+\chi(r(1-q)-\epsilon)}$. Similarly, the posterior $p_L(\lambda_H, \lambda_L)$ decreases with higher values of λ_H; If $\lambda_H = 1$ an unfavorable signal, $\tilde{\theta_L}$, is always regarded as truthful and $p_L(1, \lambda_L) = 1$, while if $\lambda_H = 0$ an unfavorable signal is non-credible and Self 1 assesses the probability that he is a low type using his prior. Moreover, note that the parameter $\chi \in (0, 1]$ is included in equations (3) and (4), which intends to capture how Bayesian the individual is. As $\chi \to 0$ Self 1 becomes increasingly naive and is more likely to believe the received signal. Instead when $\chi = 1$, signals are discounted according to Bayes' rule.

We are now in a position to state the way in which Self 1 forms beliefs after receiving a signal $\tilde{\theta_k}$. Equations (3) and (4) imply that Self 1's beliefs about her ability are given by:

$$E_1(\theta_k|\tilde{\theta_k}) = p_k(\lambda_H, \lambda_L)\theta_k + (1 - p_k(\lambda_H, \lambda_L))\theta_{-k}. \tag{5}$$

Given these beliefs, Self 1's program can be written as:

$$\begin{aligned} &\underset{e \in \{e_H, e_L\}}{\text{Max}} (a+s)eE_1(\theta_k|\tilde{\theta_k}) - c(e), \\ &\text{subject to} \\ &E_1(\theta_k|\tilde{\theta_k}) = p_k(\lambda_H, \lambda_L)\theta_k + (1 - p_k(\lambda_H, \lambda_L))\theta_{-k}. \end{aligned} \tag{6}$$

The solution to the program presented in (6) is given by Lemma 1.

Lemma 1. *The optimal effort chosen by Self 1 is,*

$$e(\tilde{\theta_k}) = \begin{cases} e_H & \text{if } \tilde{\theta_H} \text{ and } \lambda_L \in [\hat{\lambda_L}, 1], \\ e_H & \text{if } \tilde{\theta_L} \text{ and } \lambda_H \in [0, \hat{\lambda_H}]. \end{cases}$$

Where $\hat{\lambda_L}$ and $\hat{\lambda_H}$ are threshold probabilities satisfying:

$$\hat{\lambda_L} = 1 - \frac{(\theta_H(a+s)-c)\Big(qr + \lambda_H q(1-r) + \epsilon(1-\lambda_H)\Big)}{\Big(c - \theta_L(a+s)\Big)\chi\left((1-q)r - \epsilon\right)},$$

and

$$\hat{\lambda_H} = 1 - \frac{(\theta_H(a+s)-c)\Big((1-q)(1-r) + \lambda_L(1-q)r + \epsilon(1-\lambda_L)\Big)}{\Big(c - \theta_L(a+s)\Big)\chi(q(1-r) - \epsilon)}$$

Lemma 1 presents the reaction function of Self 1. According to this Lemma there exists a threshold probability $\hat{\lambda_k}$ that makes Self 1 indifferent between choosing e_H or e_L given that $\tilde{\theta_k}$ is received. Specifically, when $\hat{\lambda_L} > \lambda_L$, the low ability individual engages in too much self-deception, making favorable signals no longer credible and leading Self 1 to choose e_L after receiving $\tilde{\theta_H}$. Instead, when $\hat{\lambda_L} \leq \lambda_L$, favorable signals remain credible and Self 1 chooses e_H after receiving $\tilde{\theta_H}$. Similarly, unfavorable signals remain credible to Self 1 if $\lambda_H > \hat{\lambda_H}$, while they are not believed if $\lambda_H \leq \hat{\lambda_H}$.

Before proceeding to analyze Self 0's choice, I make an additional assumption that states that lying or suppressing relevant information has a cost that is entirely faced by Self 0. The interpretation of this assumption is that forgetting or suppressing relevant information is cognitively costly. I assume that this cost follows the piece-wise function:

Assumption 3. $m(\lambda) = \begin{cases} m \ \textit{if} \ \lambda_i < 1, \\ 0 \ \textit{if} \ \lambda_i = 1. \end{cases}$ *With* $m > 0$ *and* $\lambda_i = \{\lambda_L, \lambda_H\}$.

All in all, Self 0's program can be written down as:

$$\underset{\lambda_i \in [0,1]}{\text{Max}} \ E_0(U(e, \lambda_i)) - m(\lambda). \tag{7}$$

Note that the program in (7) can attain two different objective functions. In particular,

$$E_0(U(e_H, \lambda_i)) = a\theta_i e_H + s\Big(\lambda_i\theta_i + (1-\lambda_i)E_0\Big(E_1(\theta_k|\tilde{\theta_k})\Big)\Big)e_H - c,$$

captures Self 0's utility when e_H is exerted, while

$$E_0(U(e_L, \lambda_i)) = a\theta_i e_L + s\Big(\lambda_i\theta_i + (1-\lambda_i)E_0\Big(E_1(\theta_k|\tilde{\theta_k})\Big)\Big)e_L,$$

captures Self 0's utility when e_L is exerted. Thus, Self 0's decision, given that he is of an ability level θ_i, consists of choosing $\lambda_i \in [0,1]$ that maximizes his utility given the effort level that this strategy induces in Self 1.

The programs presented in equations (6) and (7) illustrate the strategic interaction between the selves. As mentioned before, this interaction is caused by the information asymmetry between them, which can lead them to hold different beliefs. For instance, when receiving a favorable signal, Self 1's beliefs about his ability are equal to $E_1(\theta_i) = \Big((\theta_H - \theta_L)p_H(\lambda_H, \lambda_L) + \theta_H\Big)$ and Self 0's beliefs about Self 1's beliefs are equal to $E_0(E_1(\theta_i)) = \lambda_i\theta_i + (1-\lambda_i)\Big((\theta_H - \theta_L)p_H(\lambda_H, \lambda_L) + \theta_H\Big)$, and these two sets of beliefs are different unless $\lambda_i = 0$. Since in this setting beliefs enter the utility function instrumentally, that the selves hold different beliefs implies that their choices can maximize different objective functions.

The game played by the two selves is solved using subgame perfection. The relevant equilibria of the game are presented in Definition 1 and Definition 2, and their existence is guaranteed by Proposition 1 and Proposition 2. Other equilibria of the game and their respective proofs are relegated to Appendix B. I start by defining and proving the existence of an equilibrium in which social status determines effort exertion as well as beliefs of the low ability individual.

Definition 1. *A (semi) pooling equilibrium of the status and self-deception game is characterized by the tuple $(\lambda_p^{**}, e_p^{**})$, where*

$$e_p^{**} = \begin{cases} e_L & \text{if } (\theta_L, \sigma_L), \\ e_H & \text{if } (\theta_L, \sigma_H) \text{ or } \theta_H, \end{cases}$$

and

$$\lambda_p^{**} = \begin{cases} 1 & \text{if } (\theta_L, \sigma_L) \text{ and } \theta_H, \\ \hat{\lambda}_L & \text{if } (\theta_L, \sigma_H). \end{cases}$$

Proposition 1. *There exists an equilibrium $(\lambda_p^{**}, e_p^{**})$ that is sustained if $s > 0$, $c \leq \bar{c}$, and $m \leq \bar{m}$, where $\bar{c} = (a+s)\left(\frac{se_H q\theta_H + \chi((1-q)r-\epsilon)(m-(a+s)\theta_L)}{se_H q + (a+s)\chi((1-q)r-\epsilon)}\right)$ and $\bar{m} = \frac{se_H q(\theta_H - \theta_L)}{q+\chi(r(1-q)-\epsilon)}$.*

Proof. See Appendix A ■

Proposition 1 presents the necessary conditions guaranteeing the existence of a (semi) pooling equilibrium in which social status can generate differences in beliefs and effort exertion among similarly skilled individuals. Specifically, this equilibrium features a low ability individual who exerts high effort if he belongs to the high status, but exerts low effort if he belongs to the low status. Such difference in effort stems from the higher beliefs that the individual forms when endowed the high status. While these higher beliefs are inaccurate, they generate utility gains which, in conjunction with low costs of effort and low costs of self-deception, make affordable for the individual to choose e_H. Self 0's strategy supporting this equilibrium is mixed. In particular, Self 0 sends favorable signals at the rate $1 - \hat{\lambda}_L$, which, according to Lemma 1, guarantees that Self 1 chooses high effort after receiving a favorable signal since the credibility of these signals is maintained. Given this behavior of low ability individuals, high ability individuals' best-strategy is to be truthful inasmuch as favorable signals are credible and this strategy is more profitable than engaging in self-deception.

The emergence and existence of this (semi) pooling equilibrium requires that the costs of self-deception, m, and the costs associated with choosing high effort, c are moderate. Otherwise, the psychological benefits that low ability individuals derive from holding higher beliefs cannot make up for the consequences of such inaccuracy. These conditions are comparable to the conditions that sustain the "intra-personal equilibria" in (Benabou, 2015) and Benabou and Tirole (2002). In addition, the existence of the equilibrium in Proposition 1 requires $s > 0$, otherwise an individual with low ability but high status would not experience benefits from engaging in a strategy of self-deception.

Next, I examine how changes in the degree of correlation between status and ability, captured by ϵ, affect the requirements to sustain the (semi) pooling equilibrium. Corollary 1 presents the resulting comparative statics.

Corollary 1. *The thresholds $\overline{c}$ and $\overline{m}$ increase in ϵ, the correlation level between status and ability.*

Proof. See Appendix A ■

This is a relevant result, it states that a higher correlation between ability and status, ϵ, weakens the conditions in Proposition 1 that guarantee the existence of a semi (pooling) equilibrium. The intuition behind this result is simple: while a larger value of ϵ entails that individuals receive more often a social status that matches their ability, those that can engage in self-deception can afford facing higher costs since they can more easily convince themselves about an inaccurate belief. An alternative interpretation of this result is that individuals can more easily form high beliefs when receiving the high status when they overestimate the correlation between status and ability, due to, for example, social conceptions about meritocracy. An implication of this result is that when the correlation parameter is zero,

$\epsilon = 0$, the equilibrium of Definition 1 arises under more stringent conditions than when this parameter is positive.

Other interesting comparative statics of the model but that will not be tested empirically are presented in Corollary 2.

Corollary 2. *The thresholds $\overline{c}$ and $\overline{m}$ increase in q and decrease in r and χ.*

Proof. See Appendix A ■

Corollary 2 states that as the proportion of high ability individuals increases in the society, or as the high status becomes more scarce, or as the individual is less-bayesian, the (semi) pooling equilibrium in which status affects beliefs and effort can be sustained under less stringent conditions. These comparative statics consider changes in parameters of the model that make it easier for the individual to convince himself of a favorable signal either because getting a high status while having a low ability becomes more difficult or because the individual's reaction to signals is less bayesian.

Definition 1 and Proposition 1 introduce and guarantee the existence of an equilibrium whereby self-deception using social status can be best-strategy. The requirements for such self-deception strategy to be optimal is that all costs considered in the model are moderate. Instead, when the cost associated to the self-deception strategy is high, individuals are better off self-signaling their true type. Proposition 2 presents the conditions sustaining such *separating equilibrium.*

Definition 2. *A separating equilibrium of the status and self-deception game is characterized by the tuple $(\lambda_s^{**}, e_s^{**})$, where*

$$e_s^{**} = \begin{cases} e_L & \text{if } \theta_L, \\ e_H & \text{if } \theta_H, \end{cases}$$

as well as

$$\lambda_s^{**} = \lambda_L^{**} = \lambda_H^{**} = 1$$

Proposition 2. *There exists an equilibrium $(\lambda_s^{**}, e_s^{**})$ that is sustained if $s > 0$ and $m > \bar{m}$, where $\bar{m} = \frac{s e_H q(\theta_H - \theta_L)}{q + \chi(r(1-q) - \epsilon)}$.*

Proof. See Appendix A ■

When facing high costs of self-deception, individuals are better off being truthful. In contrast to the equilibrium proven by Proposition 1, this equilibrium entails that the internal constraints generated by social status do not spawn economic consequences. That is because low ability individuals face costs that cannot be outweighted by the potential benefits of self-deception and instead opt for strategy $\lambda_L = 1$. Given such strategy, high ability individuals prefer to be truthful since favorable signals remain credible and are profitable. Self 1, knowing that $\lambda_L = 1$ and $\lambda_H = 1$ are best strategies, exerts low and high effort in reaction to unfavorable and favorable signals, respectively.[9]

All in all, the model generates two competing results. Proposition 1 demonstrates that the internal constraints that social status generates can develop into beliefs and performance differences among similarly skilled individuals. Two assumptions are fundamental in guaranteeing this result. The first is that beliefs enter as an argument in the utility function. The second is that social status can be used to sustain inaccurate but profitable beliefs. In contrast, Proposition 2 shows that these internal constraints are, under certain conditions, not powerful enough to yield relevant economic consequences. The question of whether one or the other equilibrium governs behavior will be empirically investigated using survey data as well as two controlled laboratory experiments.

3. Survey evidence

In this section I present empirical evidence from a cohort study that is suggestive of the proposed mechanism. In particular, I use these data to show that the individuals' socio-economic status at an adult age is determined by their social status at birth, but mainly through the influence that status at birth has on the educational beliefs and hopes that these individuals hold at adolescence. Moreover, I show that this influence is robust to accounting for relevant factors that have been previously shown to affect achievement.

I use data from the British cohort study, which attempts to follow individuals that were born in the United Kingdom in the third week of April 1970. The waves or follow-ups of the study correspond to the years 1975, 1980, 1986, 1996, 2000, 2004, and 2008. Different information and methods were used in each wave. For instance, in the first wave the midwife present at birth completed a questionnaire while in the 1975 wave the individual and his/her parents were asked questions and were administered tests. To investigate the validity of

[9] The conditions ensuring the existence of this separating equilibrium become more stringent as $r \to 0$, $q \to 1$, and $\chi \to 1$. These comparative statics of the parameters of the model show that the equilibria of Proposition 1 and Proposition 2 cannot coexist and are more likely to be sustained when the other equilibrium is less likely to be sustained.

the theoretical results presented in Section 2, I employ the waves corresponding to the years 1975, 1980, 1986, and 2008, from which I obtain, among others, the individuals' socio-economic status at birth as measured by parents' occupation, cognitive abilities at an early age, math and reading abilities measured at late childhood, non-cognitive traits, personality, and educational aspirations measured at adolescence, and achieved status during adulthood as measured by the individual's occupation at age 37. Table 1 and Appendix C provide a complete description of all variables used in the analysis.

I focus on the individuals educational aspirations at age 16. This variable reflects the individuals' beliefs and hopes about the degree of education that they achieve in the future and, thus, also reflects the socio-economic status that they will achieve. First, I examine whether socio-economic status at birth influences educational aspirations above and beyond the already-established influence of other relevant factors such as cognitive skills and non-cognitive traits. Subsequently, I investigate whether socio-economic status at birth influences the achieved socio-economic status of the individual either directly, that is due to socio-economic inertia in the society at the time, or through its more indirect effect on educational aspirations.

Table 1 presents the descriptive statistics of the most relevant variables. *"Status Birth"* is an ordinal variable that captures the parents' occupation when the individual was born, *"Status Adult"* is an ordinal variable that captures the individual occupation at age 37, and *"Aspirations"* is an ordinal variable that captures the educational aspirations of the individual at age 16. That these variables attain high values indicates that the individual or his parents have occupations with higher expected income or that the individual aspired to education levels with higher expected income. In addition, these variables are constructed in a way that they share the same scale. Therefore, the categories of these variables coincide in that occupations with the highest (lowest) expected income require a minimal degree of education reflected by the highest (lowest) aspiration. Moreover, to make a closer link to the theoretical model, I also use discrete versions of these variables. The variables *"High Status Parents"*, *"High Aspirations"*, and *"High Status"*, indicate either occupations that require non-vocational tertiary education levels such as university, or the aspiration to achieve these education levels.

I begin examining the relationship between aspirations and socioeconomic status at birth. To that end, I regress Aspirations on Status Birth while controlling for variables that could potentially affect aspirations. The estimates of ordered logistic regressions are presented in columns 1,2, and 3 of Table 2. I find that the average individual in the sample aspires to the higher education level, a career that requires a university degree, with 28% chance. Moreover, the estimates suggest that being born in a household belonging to the highest socio-economic status is associated with a 9.7% higher probability that the individual aspires to the highest

Table 1: Descriptive statistics of variables

Variable	Mean	St.Dev.	Median	Max.	Min.
Aspirations	3.386	1.283	3	5	1
Status Birth	2.931	0.873	3	5	1
Status Adult	3.323	0.831	3	5	1
High Aspirations	0.417	0.417	0	1	0
High Status Birth	0.182	0.386	0	1	0
High Status Adult	0.412	0.492	0	1	0

Note: This table presents the averages, standard deviations, medians, the maximum value and the minimum value of the main variables used in the survey analysis.

education level as compared to a household with the lowest socio-economic status, and this probability increase is significant at the 1% significance level for all specifications. A similar conclusion is reached when the discrete version of these variables is used. The estimates of logistic regressions featuring the discrete versions of the variables of interest are presented in columns 4 and 5 of Table 2. In this case, belonging to a high status is associated a 5.4% higher chance to have high educational aspirations and this increase is significant at the 1% level for all specifications. Hence, I find empirical evidence supporting the claim that higher status at birth is related with a higher educational aspirations and that this relationship is robust to controlling for variables that reflect the individuals' aptitudes and circumstances.

Next, I examine the influence of socio-economic status at birth on the individuals' achieved socio-economic status either directly, that is due to the degree of social inertia and mobility at the time, or through the mechanism that I propose which suggests an indirect effect through aspirations. To that end I regress the socio-economic status of individuals at the age of 37 on educational aspirations, socio-economic status at birth, the interaction between these two variables, and relevant controls. Columns 1, 2, and 3 in Table 3 present the estimates of ordered logistic regressions. These estimates suggest that the average individual in the sample achieves the highest socio-economic status with 8.61% probability. Furthermore, a change from the lowest aspiration level to the highest aspiration level is associated with a 7.2% higher probability of achieving the highest socio-economic status, a significant increase at the 5% significance level. Also, I find that belonging to the highest socio-economic status at birth corresponds to a 5.4% higher chance of achieving the highest socio-economic status as compared to an individual who belongs to the lowest socio-economic status at birth, but this increase is not significant at the 10% significance level in all specifications. Moreover, the interaction between status at birth and aspirations is statistically significant at the 5% level in all specifications, suggesting that social status at birth influences achieved social status

Table 2: Determinants of Aspirations

	(1) Aspirations	(2) Aspirations	(3) Aspirations	(4) High Aspirations	(5) High Aspirations
Status Parents	0.462***	0.200***	0.148***		
	(0.043)	(0.052)	(0.053)		
High Status Parents				0.892***	0.311**
				(0.097)	(0.122)
Mother's age at birth	0.005	-0.003	-0.001	0.005	-0.007
	(0.004)	(0.005)	(0.004)	(0.005)	(0.006)
Gender	0.317***	0.211**	0.122	0.492***	0.428***
	(0.076)	(0.090)	(0.100)	(0.083)	(0.127)
Family income 1980		-0.114***	-0.096***		-0.142***
		(0.025)	(0.025)		(0.030)
Constant	0.631**	0.809	-0.160	1.975***	1.614*
	(0.272)	(0.660)	(0.768)	(0.307)	(0.960)
Cognitive skills	NO	YES	YES	NO	YES
Non-cognitive traits	NO	YES	YES	NO	YES
Self-reported skills	NO	NO	YES	NO	YES
Neighborhood	NO	NO	YES	NO	YES
Expectations	NO	NO	YES	NO	YES
Attitudes toward school	NO	NO	YES	NO	YES
Health	NO	NO	YES	NO	YES
Country Fixed effects	YES	YES	YES	YES	YES
Region Fixed effects	YES	YES	YES	YES	YES
Log-Likelihood	-3640.820	-2770.929	-2649.116	-1728.591	-1095.687
N	2661	2178	2178	2661	2178

Note: This table presents the estimates of the ordered logistic regression of the model $Aspirations_i = \beta_0 + \beta_1 StatusBirth_i + Controls'\Gamma + \epsilon_i$ with $\epsilon_i \sim logistic$. "Aspirations" is an ordinal variable that captures the educational aspirations of the individual at adolescence. "Status Birth" ' is an ordinal variable that represents the parents' occupation at birth. The description of the control variables is presented in Appendix C. Standard errors in parentheses. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

mainly through its influence on aspirations.

The estimates of regressions using the discrete versions of the variables of interest yield similar conclusions. Individuals with the highest aspiration level and who belong to the highest status at birth have approximately a 16% higher chance to achieve the high status as compared to individuals in the low status at birth and who exhibit the low level of aspirations, a significant increase at the 5% significance level for all specifications. Similarly, I find that high aspirations, alone, increase the probability that individuals achieve the high status and that being born in a household with high status, alone, does not significantly increase the probability that individuals achieve the high status.

All in all, these findings suggest that educational aspirations and socio-economic status at birth are positively related: individuals born in households with higher socioeconomic status also aspire to have careers that demand higher education and offer better economic prospects. This relationship emerges above and beyond factors that are well-known to explain economic achievement. Moreover, I find that the influence of social status at birth on aspirations transcends in the life of these individuals by affecting their achievement. Specifically, the data show that belonging to a low status household at birth can decrease the chances of achieving a higher socio-economic status by means of the low educational aspirations that individuals born in low status households typically form.

While these findings are suggestive of the proposed mechanism, i.e. social status affecting achievement through the beliefs and hopes of individuals, they are not conclusive evidence of the model presented in Section 2. There are at least two reasons to consider these results suggestive rather than conclusive. First, there are other theoretical frameworks that can also explain these results. For instance, Dalton et al. (2016) shows that poor individuals who fail to internalize the positive relationship between achievement and aspirations can be further locked in poverty by setting low aspirations. Also, Genicot and Ray (2017) show that, in a setting whereby individuals internalize how aspirations and outcomes evolve jointly, aspirations can be socially determined. Thus, in their model low status individuals can, under certain conditions, be in a steady state trajectory where low aspirations are chosen and, as a consequence, low outcomes are achieved.

Second, there are rather stringent econometric assumptions required to i) interpret the obtained estimates in a way that the predictions of the theoretical model are validated and ii) guarantee that these point estimates are unbiased. Regarding i), the estimates presented above can be considered marginal effects only under the assumption of *predeterminedness*, that is that social status at birth affects aspirations but not the other way around. A simple intergenerational bequest argument can break this assumption; that is that parents achieve a high social status to endow children with the possibility of having high aspirations. Thus,

Table 3: Determinants of achieved social status

	(1) Status Adult	(2) Status Adult	(3) Status Adult	(1) High Status Adult	(2) High Status Adult
Aspirations*Status Parents	0.112***	0.103**	0.103**		
	(0.040)	(0.048)	(0.049)		
High Aspirations* High Status Parents				2.097***	0.884***
				(0.162)	(0.203)
Aspirations	0.204	0.080	-0.012		
	(0.133)	(0.162)	(0.163)		
High Aspirations				1.361***	0.836***
				(0.114)	(0.146)
Status Parents	-0.043	-0.197	-0.229		
	(0.150)	(0.184)	(0.185)		
High Status Parents				0.134	-0.142
				(0.163)	(0.199)
Mother's age at birth	0.005	0.002	0.004	0.008	0.004
	(0.005)	(0.005)	(0.006)	(0.006)	(0.007)
Gender	-0.499***	-0.408***	-0.470***	-0.568***	-0.550***
	(0.087)	(0.108)	(0.121)	(0.099)	(0.138)
Income		-0.077***	-0.082***		-0.113***
		(0.028)	(0.028)		(0.032)
Constant	-2.599***	-1.991*	-1.773	-1.026***	-2.575**
	(0.583)	(1.040)	(1.160)	(0.384)	(1.074)
Cognitive skills	NO	YES	YES	NO	YES
Non-cognitive traits	NO	YES	YES	NO	YES
Self-reported skills	NO	NO	YES	NO	YES
Neighborhood	NO	NO	YES	NO	YES
Expectations	NO	NO	YES	NO	YES
Attitudes toward school	NO	NO	YES	NO	YES
Health	NO	NO	YES	NO	YES
Country Fixed effects	YES	YES	YES	YES	YES
Region Fixed effects	YES	YES	YES	YES	YES
Log-Likelihood	-2338.892	-1812.992	-1769.918	-1271.931	-936.744
Observations	2,090	1,719	1719	2,090	1,719

Note: This table presents the estimates of the ordered logistic regression of the model $StatusAdult_i = \beta_0 + \beta_1 StatusBirth_i + \beta_2 Aspirations + \beta_3 StatusBirth * Aspirations + Controls'\Gamma + \epsilon_i$ with $\epsilon_i \sim logistic$. "Status Adult" is an ordinal variable that represents the individual's occupation at the age of 37. "Aspirations" is an ordinal variable that captures the educational aspirations of the individual at adolescence. "Status Birth" is an ordinal variable that represents the parents' occupation at birth. The description of the control variables is presented in Appendix C. Standard errors in parentheses. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

if anything the estimates presented in this section demonstrate that there is a positive and significant correlation between educational aspirations at a young age, social status at birth, and achieved social status. On ii), there can be unobserved factors that affect achievement and aspirations and that are not being taken into account in the analysis, yielding biased estimates due to omitted variable bias.

To complement these findings, the remaining of the paper is devoted to investigate the validity of the theoretical conjectures from Section 2 in a controlled setting. A set of laboratory experiments allows me to avoid the aforementioned problems by eliciting individual beliefs on a task instead of studying long-term aspirations, provide constant and different forms of feedback to minimize the hope component that can be still be inherent to these beliefs, randomize the assignment to social status to overcome omitted variable bias, and investigate the degree to which individuals actively acquire relevant information about their performance relative to that of others. The latter feature of the experiment cleanly allows me to establish whether social status is used by individuals to hold motivated beliefs. That is because individuals who would motivate themselves to perform the task by falsely, but deliberately, believing that status is suggestive of their ability on the task would be less likely to acquire information that might contradict these self-serving beliefs. Section 4 presents the designs and procedures of the experiments and Section 5 present the results of these experiments.

4. Experimental design and procedures

4.1. Experiment 1

The experiment was conducted at Tilburg University's CentERLAB. The participants were students at the university and were recruited through an online system. The data consist of 8 sessions with a total of 136 subjects. On average a session lasted approximately 60 minutes. Between 13 and 24 participants took part in a session. The currency used in the experiment was euros. I used Z-Tree (Fischbacher, 2007) to implement and run the experiment. Subjects earned on average 11.55 euros. The instructions of the experiment are presented in Appendix D.

The experiment consisted of two parts: Part 1 and Part 2. Upon arrival subjects were informed about this composition of the experiment, i.e. that it consisted of two parts. In both parts, subjects were expected to complete different versions of the Raven's Matrices test. The accurate completion of this task demands cognitive resources (Raven, 1989). Therefore, it was more difficult for motivated but unskilled subjects to improve their performance on the task as compared to a task that, instead, only demanded effort or attention from the subjects. In terms of the theoretical model presented in Section 2, exerting high effort in this task entailed high effort costs, c, and, since it demanded cognitive resources, it made, m, the cost of self-deception less affordable. Hence, implementing this task was intended to be a stringent test of Proposition 1, and of the proposed mechanism.

In Part 1 of the experiment, Set I of the Advanced Progressive Matrices test (APM) was implemented. This set was a "quick version" of the Raven's test and consisted of 12 matrices with a level of difficulty that is representative of the complete version of the Raven's test. Subjects had five minutes to complete these matrices, as is recommended by Raven (1989). Although subjects did not face monetary incentives in this part of the experiment, they were encouraged to do their best. The aim of this part of the experiment was to measure subjects' ability on the task. Once the specified time for this part of the experiment was over, feedback about performance, i.e. the number of correctly solved matrices, was given in private to each subject.

After the first part of the experiment was completed, I introduced status differences between subjects participating in the same session. To that end, I implemented the protocol developed by Eckel and Ball (1996) and also implemented in Ball and Eckel (1998) and Ball et al. (2001). Specifically, subjects were randomly assigned to one of two treatments: the *"High Status"* treatment, in which they received a symbolic award and social recognition from their peers, or the *"Low Status"* treatment, where they did not receive the award nor social recognition.[10] The assignment to the high status treatment was at random to allow for performance comparisons between subjects with similar ability but assigned to different treatments. Although participants were not informed about the assignment rule, they were also not deceived. This is a crucial difference with respect to Eckel and Ball's (1996) protocol. The exact wording of the message given and read to subjects was: "The following participants were assigned to the GOLD group. Please come up to the front as we call your ID number and receive your medal". The experimenter reports that no subject questioned the reason for the assignment to the treatments during the experiment.[11]

[10]The reason behind implementing an artificial social status rather than a naturally occurring status rank was to minimize the possibility of disagreements that may arise from using naturally occurring rankings. For instance, subjects may disagree about the rank of an status allocation based on academic performance (what kind of courses are considered for this rank?), gender (which characteristics make one gender rank higher than the other?), or socio-economic status (I am right now having similar status than someone else of my age that is working, but I am investing in education at the moment). See Ball et al. (2001) for a more comprehensive discussion about the usage of this status differential.

[11] I favor this design instead of one in which subjects are explicitly told that the treatment assignment is random. First, because in life this is seldom the case. One's social position can be determined by luck or one's ability and it is hard to disentangle the exact contribution to each of these factors which provides room for interpretation and self-serving belief formation. Second, because this experiment seeks to provide a first proof of concept that social status *can* trigger internal constraints. Indeed, in light of Corollary 1 from Section 2, not making the random assignment common knowledge eases the emergence of motivated beliefs

In Part 2 of the experiment, I implemented Set II of the APM. This set is the complete version of the Raven's test and consisted of 36 matrices. Additionally, the most difficult 24 matrices of the Standard Progressive test (SPM) were also included.[12] In total, subjects had 20 minutes to solve as many matrices as they could with a monetary incentive of 0.5 euros for each correctly solved matrix.The pre-specified time given to subjects to complete matrices, also recommended by Raven (1989), was divided in five rounds of four minutes each. Dividing the time that subjects had into rounds had multiple purposes. First, it allowed me to provide individual feedback on the task, i.e. the number of correctly solved matrices in previous rounds, to enhance the subjects' learning about their ability. Second, it allowed me to elicit subjects' beliefs about the number of matrices they thought they would be able to complete in the next round. These beliefs were elicited immediately after feedback was given. Third, it provided subjects with some rest to minimize depletion. Moreover, note that by explicitly telling subjects that the experiment only consisted of two parts and by giving full instructions at the beginning of each part disregard the possibility that subjects expect that status would be reassigned based on their performance in the second part of the experiment.

Subjects' beliefs about the number of matrices they expect to solve correctly in the next round were elicited right before the beginning of each round and their accuracy was not incentivized. There were multiple reasons for not providing incentives in exchange of accurate beliefs. First, previous studies report that implementing an incentive compatible mechanism to elicit beliefs can lead to distractions from the task of interest and can alter the response of subjects toward monetary incentives offered in other tasks in the experiment (Blanco et al., 2010, Cabrales et al., 2010, Haruvy et al., 2007). Thus, I avoid using complicated payment rules to ensure that subjects focused on the Raven's task as well as on the treatment assignment. Second, Trautmann and van de Kuilen (2015) show that some desirable properties of incentive-compatible methods can also be achieved through non-incentivized belief elicitations. Third, I am interested in belief differences across treatments rather than in the accuracy of the elicited beliefs. Hence, noise stemming from subjects' overconfidence, social desirability, or subjects wanting to influence the results in the direction they believe to be the goal of the experiment, must be equally distributed across treatments and across ability types due to randomization. This is indeed what the data presented in Section 5 suggest. Fourth, to more closely relate to the survey evidence presented in Section 3, I ask subjects to state a belief about their own future achievement on the task and, as in the survey, such belief does not

because it gives subjects some leeway regarding the interpretation of social status. However, note that this design is not absent from self-deception since subjects are still required to suppress or avoid relevant feedback to maintain motivated beliefs.

[12] The SPM is also a Raven's matrices test but with a lower average difficulty as compared to the APM. Using the most difficult matrices kept the degree of difficulty of the task constant

carry monetary consequences when (in)accurate.

Finally, for exactly half of the sessions, chosen at random, subjects had the possibility of accessing a ranked list showing their performance relative to that of the rest of participants in the session. This feature was only available in the second part of the experiment. The ranking was determined by the subjects' performance on Part 2 of the experiment at the exact moment when the subject accessed it. To access the ranking, subjects had to click a button located at the right-bottom part of their screen. Looking at this ranking was costly inasmuch as it required them to spend time that could have been used to improve their performance on the task.

The relative information attribute was included in the design of the experiment to understand whether the treatments and/or ability on the task affect the subjects' decision to acquire additional information about their own ability. If being exposed to more information about ability makes self-deception more difficult and impedes the formation of motivated beliefs, then we should observe less access to the rank among subjects who would benefit the most from these beliefs. Also, this feature of the experiment is useful to study if potential treatment effects emerge because subjects misinterpret the treatment assignment as an informative signal about their ability, or in contrast, and as predicted by the theory, treatment effects are robust to subjects having more or less exposure to information about ability.

4.2. Experiment 2

The experiment was conducted at Tilburg University's CentERLAB. Participants were all students at the university and were recruited through an online system. The data consist of 8 sessions with a total of 138 subjects. On average a session lasted approximately 60 minutes. Between 11 and 23 participants took part in a session. The currency used in the experiment was euros. I used Z-Tree (Fischbacher, 2007) to implement and run the experiment. Subjects earned on average 11.8 euros. The instructions of the experiment are presented in Appendix C.

The experimental design of this experiment had only one difference with respect to Experiment 1, namely that the assignment to the high status was not random and was instead determined by the subjects' performance in Part 1 of the experiment. In particular, subjects with higher performance than at least half of the subjects in the same session, were given the high status. The other half of subjects were assigned Low Status.

There were several reasons behind implementing this experiment. First, it serves as a robustness test of potential findings in Experiment 1. If treatment effects are found in the data of Experiment 1 and they are in the direction predicted by the theory, then I should find that low ability subjects in Experiment 2 exhibit low performance and have low beliefs as compared to high ability subjects. That is because according to the theory, low ability subjects should exhibit motivated beliefs and, as a consequence, attain high performance levels only when assigned to High Status. Second, subjects participating in this experiment serve as an additional and more numerous control group. Hence, the results in Experiment 1 can be further validated by comparing the performance and beliefs levels of the treated groups in Experiment 1 to subjects classified as having similar ability in Experiment 2.

4.3. Predictions

This subsection presents a set of predictions regarding subjects' performance, beliefs, and rank-access behavior. These predictions are based on the theoretical model presented in Section 2. The first set of predictions are based on the result of the benchmark and on Proposition 2. These two theoretical results have in common that they predict that the experimental treatments do not affect subjects' performance nor their beliefs. In the benchmark, these predictions stem from the assumptions that social status does not yield advantages to perform the task and is not informative to the individual. Moreover, in the model that allows for self-deception, the result of Proposition 2 emerges when individuals are better off being truthful because the self-deception strategy entails steep costs and is not profitable.

Prediction 1: *Performance is highest for high ability subjects and lowest for low ability subjects. The treatment assignment does not affect performance.*

Prediction 2: *Beliefs are highest for high ability subjects and lowest for low ability subjects. The treatment assignment does not affect beliefs.*

The second set of predictions is based on Proposition 1. This theoretical result predicts that, despite the high costs of effort implied by the chosen task, subjects with low ability exert greater effort and exhibit higher beliefs when assigned to High Status. That is because subjects use social status to generate motivated beliefs, which allow them to experience utility gains that outweigh the cost of being inaccurate. Moreover, Proposition 1 also predicts that high ability subjects exhibit high performance as well as high beliefs regardless of their treatment assignment.

Prediction 3: *Performance is highest for high ability subjects and low ability subjects assigned to the high status, and lowest for low types in the low status.*

Prediction 4: *Beliefs are highest for high ability subjects and low ability subjects assigned to the high status, and lowest for low types in the low status.*

Note that if the mechanism whereby social status generates differences in beliefs and effort are the internal constraints generated by social status and not, for example, confusion about ability in the task stemming from the treatment assignment, the results encompassed in Prediction 3 and Prediction 4 should be robust to subjects being exposed to additional feedback. Hence, the predicted differences in performance and beliefs should emerge among subjects who access the rank as well as among subjects who do not access it.

Prediction 5: *The beliefs and performance differences specified in Prediction 3 and Prediction 4 occur regardless of whether subjects access or not the rank.*

The last prediction is a conjecture that originates from the nature of Proposition 1. If subjects engage in self-deception to hold motivated beliefs, then rank access behavior should be lower among those who benefit the most from these beliefs. Either because accessing the rank provides them with more precise information about their ability, which is lowest among subjects who benefit the most from self-deception, or because accessing the rank reveals more information about the correlation ϵ, which in Experiment 1 is equal to zero and according to Corollary 1 such knowledge makes the self-deception equilibrium more involving than when it is believed that $\epsilon > 0$.

Prediction 6: *Rank-access is lowest for low ability subjects assigned to high status, and highest for low ability subjects assigned low status and high ability subjects.*

5. Experimental results

5.1. Performance

The aim of the experiments is to evaluate the effect of the social status treatments on performance and beliefs. The identification strategy consists in performance and beliefs comparisons among subjects with similar ability in the task but who were assigned to different treatments. Therefore, throughout this section I focus on Experiment 1, which allows me to make such comparisons, and when necessary I refer to the results of Experiment 2. The complete analysis of the data of Experiment 2 is presented in Appendix F.

To link the results of Experiment 1 to the theoretical model, I classify subjects into two ability categories: high ability and low ability. A subject is classified to have high ability if he correctly completes more matrices in Part 1 of the experiment than at least half of the subjects in the same session. An individual that fails to classify as high ability is classified as low ability. Note that participants are not aware of this classification during the experiment. The data suggest that this classification entails significant performance differences in Part 1 of the experiment. Specifically, high ability subjects outperformed low ability subjects by 2.21 standard deviations (Hedge's g, $p < 0.001$).

Moreover, a successful treatment randomization in Experiment 1 must guarantee that subjects' ability on the task is comparable across the treatments. Indeed, I find no difference in average performance in Part 1 of the experiment between low ability subjects assigned to the different treatments ($U = 0.028, p = 0.977$). However, I find that high ability subjects assigned to low status exhibit higher performance in Part 1 than high ability subjects assigned high status ($U = 1.992, p = 0.041$). This difference is taken into account in what remains of the analysis and it posses no threat to the validity of the main results of the paper.

We are now in a position to evaluate the subjects' performance in Part 2 of the experiment. Table 4 presents the descriptive statistics of subjects' performance by treatment and by ability. The main finding of the experiment is that low ability subjects exhibit higher performance when assigned the high status ($U = 2.020, p = 0.029$).[13] The effect size of this difference is 0.53 standard deviations (Hedge's g, $p = 0.01$, with 1000 bootstrap replications).[14] The average performance level achieved by low ability subjects assigned to High Status is comparable to that achieved by high ability subjects assigned to the same treatment ($U = 0.658, p = 0.510$). Additionally, low ability subjects assigned to the low status treatment are outperformed by high ability subjects who belong to the same treatment ($U = 2.378, p < 0.01$). Finally, I find no empirical evidence of a difference between high ability subjects assigned to the different treatments ($U = 0.913, p = 0.36$).[15]

To account for factors other than the treatment assignment that might influence subjects' performance, I perform regression analyses that seek to evaluate the treatment effects while controlling for a set of relevant variables.[16] Columns 1 and 2 in Table 5 present the estimates

[13]Unless specified, I use the Wilcoxon Mann-Whitney test for pairwise comparisons and report the standardized U statistic and the respective p-value.

[14] The statistical power of this test is $1 - \beta$=0.73 at the 5 % significance level.

[15] Since high ability subjects assigned to the different treatments exhibited differences in performance in Set I, the latter finding could be interpreted as evidence suggesting that high ability subjects display higher performance when assigned to High Status. Further analyses of the data will show that high ability subjects assigned to different treatments exhibit similar average performance.

[16]The matrix of control variables contains the variables gender, number of participants in a given session,

Table 4: Descriptive statistics of performance in Part 2 of Experiment 1

Type/Treatment	High Status	Low Status	Total
High Ability	22.285	24.658	23.695
	(7.215)	(8.676)	(8.144)
Low Ability	24.771	19.621	22.437
	(11.476)	(6.630)	(9.863)
Total	23.68	22.65	23.139
	(9.744)	(8.224)	(8.952)

Note: This table presents the averages and standard deviations of the performance in the second part of Experiment 1 by experimental treatment and subject ability. Standard deviations are presented in parentheses.

of negative binomial regressions of performance in Part 2 on subjects' ability, treatment dummies, the interaction between these two variables, and, in some specifications, control variables.[17]

The regression estimates confirm the aforementioned results. Specifically, among low ability subjects, those assigned high status attain higher average performance ($\chi^2(1) = 9.20, p = 0.002$). Moreover, the estimate associated to "High Status" shows that the treatments did not generate differences in average performance among high ability subjects. In addition, the estimate associated to "Low ability" confirms that subjects with low ability assigned to the low status exhibit lower average performance than high ability subjects assigned to the same treatment. Finally, and in contrast to the analysis of the data based on pairwise testing, I find that high ability subjects assigned to "High Status" were outperformed by low ability subjects assigned to the same treatment ($\chi^2(1) = 5.20, p = 0.022$).

In Appendix E.1, I show that abandoning the binary classification of ability and adopting a continuous measure of ability, i.e. performance in Part 1 of the experiment, leads to estimates that are consistent with the aforementioned findings. In particular, I find that subjects assigned to the high status achieve higher scores in Part 2 of the experiment the lower their performance in Part 1 is. In contrast, subjects in Low Status achieve higher scores in Part 2 the higher their performance in Part 1 is. Hence, the treatment assignment fundamentally changed the relationship between subjects' performance in Part 1 and Part 2

score in the locus of control questionnaire, subjects' beliefs about performance in Part 1 of the experiment, subjects' perception about the fairness of the treatment assignment, and whether subjects performed the task in the past.

[17]The performance data exhibits a variance, 69.30, that is larger than its mean, 23.434 A standard count regression model does not account for a data process with these characteristics. To account for this over-dispersion, I use a negative binomial model.

Table 5: Treatment Effects in Experiment 1

	(1) Performance	(2) Performance	(3) Beliefs	(4) Beliefs
Low Ability	-5.095***	-6.123***	-4.702*	-5.353**
	(1.862)	(1.984)	(2.502)	(2.358)
High Status	-2.198	-2.260	-0.438	-0.221
	(1.809)	(1.784)	(2.089)	(1.873)
Low Ability*High Status	6.930**	7.146**	3.257	3.248
	(2.817)	(2.787)	(3.287)	(3.086)
Session size		-0.601*		0.040
		(0.354)		(0.429)
Belief practice round		-0.018		0.335
		(0.195)		(0.271)
Assignment fair		-2.605		-2.546
		(1.690)		(1.739)
Locus of Control		0.725*		0.274
		(0.420)		(0.525)
Female		3.594**		-0.630
		(1.644)		(1.970)
Task performed before		6.632***		6.258**
		(2.032)		(2.781)
ln(δ)	0.658***	0.4190***	0.568***	0.424***
	(0.265)	(0.297)	(0.205)	(0.232)
N	133	133	133	133
Log-likelihood	-463.927	-454.243	-480.819	-475.162

Note: This table presents marginal effects of negative binomial regressions of the model $y_i = \beta_0 + \beta_1 LowAbility + \beta_2 HighStatus + \beta_3 LowAbility * HighStatus + Controls'\Gamma + \epsilon_i$, with $\epsilon \sim poisson(\lambda)$. y_i is "Performance" in column (1) and column (2) and "Beliefs" in column (3) and column (4). "Performance" is the number of correctly solved matrices in the second part of Experiment 1, "Beliefs' is the number of correctly solved matrices the participant believed could achieve in Part 2 of Experiment 1, "High Status" is a dummy variable that captures whether the subject was assigned to the high status treatment "Low Ability" is a dummy variable that captures whether the subject was classified as having low ability on the task. $ln(\delta)$ is the estimated dispersion from the mean. Standard errors presented in parentheses. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

of the experiment, and those changes were more pronounced for subjects assigned to High Status.

Appendix F shows that in Experiment 2, low ability subjects exhibited a significantly lower average performance than high ability subjects. This finding suggests that in Experiment 1 the treatment assignment, and not other confounding factors, generated the treatment differences among subjects with low ability. Moreover, when the subjects' performance is compared across experiments, the main results of Experiment 1 are corroborated. First, low ability subjects assigned to High Status in Experiment 1 exhibit higher average performance than low ability subjects in Low Status in Experiment 1 and Experiment 2 ($U = 1.894, p = 0.028$). Second, I find no significant differences in performance between high ability subjects assigned to low status in Experiment 1 and high ability subjects in High Status in both experiments ($U = 0.466 p = 0.6411$). In conclusion, the performance data from the two experiments favor Prediction 3 and reject Prediction 1.

5.2. Beliefs

Next, I analyze the influence of the treatments on the subjects' beliefs. This analysis evaluates treatment differences on the sum of the subjects' beliefs over all rounds in Part 2. Table 6 presents the descriptive statistics of beliefs by treatment and by ability in Experiment 1. While high ability subjects exhibit similar average beliefs across treatments ($U = 0.177, p = 0.859$), low ability subjects exhibit higher average beliefs when assigned to High Status ($U = 2.071, p = 0.038$). In fact, the average belief level exhibited by low ability subjects with the high status is comparable to that of high ability subjects assigned the same treatment ($U = 0.672, p = 0.501$). Hence, the assignment to High Status induced higher beliefs among low ability subjects.

Table 6: Performance beliefs in Part 2 of Experiment 1

Ability / Treatment	High Status	Low Status	Total
High Ability	31.285	31.804	31.594
	(8.944)	(8.721)	(8.793)
Low Ability	29.8	27.620	28.81
	(8.442)	(9.484)	(10.458)
Total	32.161	29.559	31.691
	(9.240)	(9.113)	(9.249)

Note: This table presents the averages and standard deviations of aggregated beliefs in the second part of Experiment 1 by experimental treatment, and subject ability. Standard deviations are presented in parentheses.

To control for factors other than the treatment assignment that might drive these results, I perform regressions to evaluate treatment effects while controlling for relevant variables.[18] Columns 3 and 4 of Table 5 present the estimates of negative binomial regressions. The resulting estimates confirm the aforementioned findings. First, low ability subjects exhibit lower average beliefs than high ability subjects when both groups are assigned to Low Status ($p = 0.025$). Second, average beliefs do not differ across subjects of low and high ability when both groups are assigned to the High Status treatment ($\chi^2(1)$=0.60, p=0.437). Finally, I find no empirical evidence of a difference in beliefs between high ability subjects assigned to different treatments ($p = 0.906$).

Appendix E.1 shows that these results are robust to replacing the binary classification of social status by a continuous measure of ability, namely performance in Part 1. Specifically, I find that subjects assigned to the low status treatment who have a low score in Part 1 exhibit low beliefs in Part 2. In contrast, subjects assigned to high status who have a low score in Part 1 exhibit high beliefs in Part 2. Thus, the treatment assignment fundamentally changed the relationship between subjects' performance in Part 1 of the experiment and their beliefs in Part 2, and those changes were more pronounced for subjects assigned to "High Status".

Appendix E.2 presents an alternative analysis of treatment effects that focuses on the subjects' beliefs *in a given round*. These data suggest that the treatment assignment generates belief differences among low ability subjects after the first round. Thus, the result of treatment effects in beliefs among low ability subjects presented in this subsection is not due to misinformation or incorrect priors about their ability in the beginning of the experiment, but instead emerges after subjects are exposed to frequent performance feedback and after they performed the task repeatedly. Further analyses of these data also show that the treatments induced different processes of belief updating among low ability subjects. Specifically, subjects with High Status updated their beliefs upward more steeply, even if their previous performance levels did not match those beliefs.

To investigate how beliefs relate to performance, I study the empirical properties of the difference between beliefs and performance. The data show that there is a generalized tendency of subjects to be overconfident. In particular, subjects stated beliefs that were, on average, 7.09 matrices higher than their performance level. Such behavior was likely to be generated by subjects underestimating the difficulty of the task along with the absence of incentives rewarding accurateness. These inaccurate beliefs do not posse a threat to the validity of the results since the focus of the analysis is on belief comparisons across treatments

[18] As in the previous subsection, the matrix of control variables contains the variables gender, number of participants in a given session, score in the locus of control questionnaire, subjects' beliefs about performance in Part 1 of the experiment, subjects' perception about the fairness of the treatment assignment, and whether subjects performed the task in the past.

and across ability. Thus, as long as this imprecision is on average similar across treatments and across ability, indicating that randomization guaranteed similar degrees of overconfidence, the differences in beliefs presented above can be attributed to the treatments.

Indeed, the data suggest that the performance-beliefs gap is similar across treatments, implying that overconfidence is similar across treatments and across ability. For low ability subjects, who exhibited the most interesting beliefs behavior across treatments, the gap is on average -8 if assigned Low Status and -5.02 if assigned High Status and this difference is statistically indistinguishable ($U = -1.109, p = 0.271$). Therefore, the higher average beliefs exhibited by low ability subjects assigned High Status were met with a high performance level.[19]

Appendix F presents the results of Experiment 2. The data of that experiment suggest that low ability subjects exhibit lower average beliefs as compared to high ability subjects. These results demonstrate that it is only after receiving the high status that subjects with low ability exhibit beliefs that are comparable to those of high ability subjects and that the belief differences among low ability subjects found in Experiment 1 are entirely driven by the treatment assignment. Finally, the aforementioned results can be corroborated when average beliefs are compared across the experiments. Specifically, low ability subjects assigned High Status in Experiment 1 exhibit higher average beliefs than low ability subjects with Low Status in both experiments ($U = 1.308, p = 0.09$). In contrast, I find no empirical evidence of a difference among high ability subjects assigned to the different treatments in both experiments ($U = 1.036, p = 0.15$).

All in all, the experimental data show that social status has an influence on subjects' beliefs. As predicted by the theory, the strength of this effect depends on the subjects' ability. Specifically, subjects with low ability on the task exhibit higher performance when assigned to the high rather than to the low status. On the other hand, subjects with high ability on the task do not exhibit significant belief differences due to the treatment assignment. These results are in line with Prediction 4 and disregard Prediction 2.

5.3. Access to relative performance feedback

The experiment allowed some participants to access a ranking containing information about their performance on the task relative to the performance of other subjects. While accessing such ranking was costly, inasmuch as subjects could have spent that time trying

[19] The only difference in performance-beliefs gap arises when low ability subjects and high ability subjects are compared ($U = 1.463, p = 0.074$). For this case it is not possible to establish whether the randomization problems for the high types (See section 4) or a difference in overconfidence is driving this effect. This question is left open, but posses not threat to the validity of the results since the focus from here onward is, for reasons discussed below, the process of belief formation of low ability subjects.

to solve more matrices, it provided them the possibility of acquiring additional information about their ability on the task.

This attribute of the experiment allows me to investigate the robustness of the aforementioned results. If subjects misinterpret the treatment assignment, naively incorporating it as a signal about their ability, and this is the principal reason behind the treatment effects, then we should not observe treatment effects among subjects who accessed the rank. Also, this attribute of the experiment yields a test of the nature of the proposed mechanism. If subjects strategically misinterpret social status to generate motivated beliefs, then we should observe differences in rank-access behavior across subjects who received "good news", e.g. High Status, and those who received "bad news". Specifically, low ability subjects subjects with High Status should access the rank less often because they are sophisticated and expect bad news, and these bad news make the formation and maintenance of motivated beliefs more difficult.

I start investigating the frequency at which subjects accessed the rank and whether being assigned to High Status influenced this decision. Table 7 presents descriptive statistics of rank-access measured at different points in the experiment. Panel A presents the descriptive statistics of rank access after the first round in Part 2 was over, Panel B presents the descriptive statistics of rank access after the first three rounds of Part 2 were over and Panel C presents the descriptive statistics of rank access at the end of the experiment.

Table 7 shows that subjects who had the chance to access the ranking did so 2.66 times on average during the second part of the experiment. A comparison across panels evidences that the frequency at which the rank was accessed increased considerably over rounds. Specifically, subjects accessed the rank 0.36 times on average after the first round, and this number increased to 1.055 after the third round. This increase in rank access over the rounds is explained by the higher proportion of subjects accessing the rank at least once. In particular, the data show that after round 1 approximately to 18% of subjects who had access to the rank accessed it at least once. This proportion of subjects increased to 38% at the end of round 3, and further increased to 63% at the end of the experiment.

Moreover, I do not find differences in rank access behavior between subjects assigned to the different treatments ($U = 0.758, p = 0.448$), or between subjects with different ability ($U = 0.774, p = 0.439$). These conclusions are robust to using the different variables of rank-access presented in the panels of Table 7. Moreover, to evaluate whether subjects with similar ability but who were assigned to different treatments exhibit significant differences in rank-access behavior, I perform regressions of rank access on treatment dummies, ability dummies, interactions between these variables, and, for some specifications, control variables. The main rationale for using regressions rather than performing pairwise tests is that the latter tests can be under-powered due to the low number of subjects that were assigned to a treatment, were of high or low ability in the task, and had access to the ranking.

Table 8 presents the estimates of negative binomial regressions. I find differences in rank access behavior among low ability subjects. Specifically, low ability subjects assigned to High Status display lower average access to the ranking at the beginning and during most of experiment.[20] The rank access behavior of subjects with low ability in the high status treatment is also lower than that displayed by high ability subjects ($\chi^2(1) = 4.95, p = 0.026$). Hence, they acquire substantially less additional information about their ability in the first half of the experiment. Such behavior is in line with the notion that social status, whenever favorable, is used by subjects to form and maintain motivated beliefs that boost their motivation on the task, and information that might contradict these beliefs is avoided. This result validates Prediction 6.

Table 8 also shows that when rank-access behavior in all rounds is examined, the aforementioned differences dissipate and rank-access behavior is statistically indistinguishable among low ability subjects.[21] This finding, along with the result that there is a significantly higher proportion of subjects accessing the rank at least once in the last rounds of the experiment, suggest an end-of-the-game effect. That is, in the last rounds, when there is little time left and there is small margin to significantly increase earnings, the majority of subjects access the ranking to check how well they did in the experiment as compared to others. The emergence of such end-of-the-game effect confines the empirical validity of Prediction 6 to the behavior of subjects in most of the experiment except for the last couple of rounds.

We are now in position to investigate whether and how accessing the ranking influenced the treatment effects. Table 9 presents the estimates of a negative binomial regression of the statistical models presented in Table 5 with the difference that "Times Rank", which captures how often subjects accessed the rank at different points in Part 2, is included in the specification and is interacted with treatment dummies as well as with ability dummies. The main conclusion of this analysis is depicted by the estimates presented in column (3) and column (4): low ability subjects, regardless of whether they access or not the rank, exhibit treatment effects, that is they exhibit significantly higher performance and higher beliefs when assigned to High Status as compared to similarly skilled subjects in Low Status.

Moreover, the estimates in Table 9 exhibit a number properties that are worth discussion.

[20] The joint tests supporting these conclusions yield ($\chi^2(1) = 5.61, p = 0.017$) for the estimates presented in column 2 of Table 8 and ($\chi^2(1) = 4.67, p = 0.030$) for the estimates column 4 of Table 8.

[21] Low ability subjects assigned high status exhibit similar average rank-access as compared to low ability subjects assigned the low status ($\chi^2(1) = 0.05, p = 0.8171$). Also, low ability subjects with low status exhibit similar average rank-access behavior as compared to high ability subjects assigned to the high status ($\chi^2(1) = 0.42, p = 0.516$).

Table 7: Rank-access in Experiment 1 by treatment and by ability

Ability/Treatment	High Status	Low Status	Total
Panel A: First round			
High Ability	0.727	0.181	0.363
	(7.215)	(1.272)	(1.025)
Low Ability	0.2	0.312	0.25
	(0.523)	(0.602)	(0.554)
Total	0.387	0.236	.304
	(0.882)	(0.751)	(0.809)
Panel B: First three rounds			
High Ability	1.727	0.636	1
	(3.289)	(1.705)	(2.358)
Low Ability	0.95	1.187	1.055
	(1.959)	(1.558)	(1.771)
Total	1.225	0.868	1.028
	(2.486)	(1.646)	(2.057)
Panel C: All rounds			
High Ability	3.363	2.227	2.606
	(4.884)	(3.624)	(4.046)
Low Ability	3	2.375	2.722
	(3.128)	(2.446)	(2.824)
Total	3.129	2.289	2.66
	(3.766)	(9.113)	(3.437)

Note: This table presents the averages and standard deviations of rank-access in the second part of Experiment 1 by experimental treatment, and subject ability. Standard deviations are presented in parentheses.

Table 8: Determinants of rank-access in Experiment 1

	(1) Times Rank Round 1	(2) Times Rank Round 1	(3) Times Rank Round 1-3	(4) Times Rank Round 1-3	(5) Times Rank All rounds	(6) Times Rank All rounds
Low Ability	0.506	0.796*	0.746	1.226*	0.351	1.348
	(0.322)	(0.382)	(0.478)	(0.655)	(1.008)	(1.204)
High Status	0.676*	0.647**	0.651	0.601	0.278	0.168
	(0.364)	(0.312)	(0.636)	(0.690)	(1.397)	(1.784)
Low Ability* High Status	-0.834*	-0.945***	-1.452*	-1.551*	0.095	-0.057
	(0.434)	(0.346)	(0.890)	(0.900)	(1.737)	(1.966)
Group Size		0.002		-0.035		-0.127
		(0.037)		(0.096)		(0.210)
Fair Medal		0.220		0.120		-0.328
		(0.254)		(0.485)		(0.979)
Locus of Control		-0.166***		-0.360*		-0.122
		(0.059)		(0.189)		(0.351)
Female		-0.425**		-0.879*		-2.149**
		(0.205)		(0.533)		(1.016)
Belief practice round		-0.036*		-0.042		-0.065
		(0.021)		(0.115)		(0.237)
Task performed before		0.087		-0.405		-0.461
		(0.225)		(0.723)		(1.797)
$ln(\delta)$	0.221	-0.104	1.116***	0.995***	1.405***	1.246***
	(0.564)	(0.730)	(0.375)	(1.140)	(0.286)	(0.344)
Observations	69	69	69	69	69	69
Log Likelihood	-43.297	-39.236	-89.620	-86.691	-146.453	-142.691

Note: This table presents marginal effects of negative binomial regressions of the model $TimesRank_i = \beta_0 + \beta_1 LowAbility + \beta_2 HighStatus + \beta_3 LowAbility * HighStatus + Controls'\Gamma + \epsilon_i$, with $\epsilon \sim poisson(\lambda)$. "Times Rank" is the frequency of rank-access by a subject in the second part of Experiment 1,"High Status" is a dummy variable that captures whether the subject was assigned to the high status treatment "Low Ability" is a dummy variable that captures whether the subject was classified as having low ability on the task. $ln(\delta)$ is the estimated dispersion from the mean. Standard errors presented in parentheses. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

First, the estimates in column (3) and column (4) show that the treatment effects are larger among low ability subjects who did not access the rank ($\chi^2(1) = 5.61, p = 0.017$). This finding corroborates the notion that the information presented by the rank was disadvantageous for the formation and maintenance of motivated beliefs, and as a consequence most low ability subjects in the high status treatment avoided it at great extent during most of the experiment. Second, the estimates of all specifications in Table 9 demonstrate that low ability subjects who do not access the rank exhibit treatment effects irrespective of which variable of rank-access is used. However, these treatment effects are larger when "Times Rank" captures rank-access behavior in the first three rounds of the experiment. Thus, before the end-of-the-game effect took place subjects who did not access the rank also benefited most from the assignment to High Status. Lastly, the significance of the treatment effects among subjects who accessed the rank vary with the variable used to capture rank-access behavior. In particular, low ability subjects who accessed the rank exhibit treatment effects when rank access behavior is measured after certain number rounds have elapsed—at least three—. Given that only 18% of subjects who could access the rank did so in the first round, my interpretation of this finding is that treatment effects among these subjects can only be precisely estimated after a considerable number of subjects have accessed the rank.

In summary, these results demonstrate that the performance and belief differences generated by the treatments were not caused by subjects naively believing that the treatment assignment had any relationship with their ability on the task. On the contrary, I find that subjects who decided to get more information about their relative ability on the task as well as those who did not acquired such information, displayed significant treatment effects. However, these treatment effects were larger for subjects who did not accessed the rank because receiving bad news weakened, but not restricted in their totality, the formation and maintenance of motivated beliefs. Therefore, the data validate Prediction 5.

6. Conclusion and Discussion

This paper demonstrated that internal constraints generated by social status, in the form of beliefs about individual ability, generate economic consequences. Therefore, social standings can influence economic achievement not only by means of the material disadvantages that they entails, but also through the beliefs that they trigger in individuals. These results suggest that societies nesting institutions that encourage social differences, even when they do not entail material (dis) advantages, can exhibit economic disparity through unexpected mechanisms.

Table 9: Treatment effects and rank-access in Experiment 1

	(1) Performance	(2) Beliefs	(3) Performance	(4) Beliefs	(5) Performance	(6) Beliefs
Low Ability	-5.873***	-4.820*	-4.787**	-3.701**	-3.899*	-2.038
	(2.104)	(2.484)	(2.160)	(1.568)	(2.159)	(2.494)
High Status	-1.770	0.459	-1.682	-0.594	-1.138	0.765
	(1.820)	(1.935)	(1.886)	(1.412)	(1.967)	(2.013)
Low Ability * High Status	7.132**	1.674	6.139**	3.388	4.111	-2.268
	(2.926)	(3.187)	(2.938)	(2.096)	(2.864)	(3.279)
Low Ability * Times Rank	-0.474	-2.076	-2.082**	-2.097**	-1.581***	-2.609**
	(2.207)	(4.107)	(1.059)	(0.897)	(0.589)	(1.124)
High Status* Times Rank	-2.754	-0.884	-1.124	-0.689	-0.799	-0.445
	(2.342)	(1.326)	(0.750)	(0.440)	(0.499)	(0.506)
High Status* Low Ability Times Rank	-1.517	6.185	1.607	2.635***	2.206**	3.819***
	(3.359)	(4.312)	(1.059)	(0.897)	(0.882)	(1.212)
Times Rank	2.106***	-1.893**	1.054**	0.073	0.628***	-0.004
	(0.789)	(0.953)	(0.419)	(0.394)	(0.182)	(0.446)
Group Size	-0.569	-0.023	-0.601*	0.098	-0.605*	0.049
	(0.359)	(0.432)	(0.354)	(0.309)	(0.347)	(0.416)
Fair Medal	-1.988	-2.205	-2.075	-0.668	-2.164	-2.266
	(1.801)	(1.856)	(1.854)	(1.205)	(1.878)	(1.717)
Locus of Control	0.650	0.252	0.742*	0.351	0.659	0.497
	(0.439)	(0.547)	(0.434)	(0.369)	(0.423)	(0.494)
Female	3.031*	-0.340	3.091*	-0.694	3.323*	-0.883
	(1.662)	(2.075)	(1.720)	(1.348)	(1.901)	(1.876)
Belief practice round	-0.049	0.358	-0.018	1.442**	-0.020	0.459*
	(0.197)	(0.273)	(0.197)	(0.139)	(0.199)	(0.260)
Task Performed before	5.914***	7.574**	5.718***	5.556***	5.637***	6.238**
	(2.132)	(3.024)	(2.108)	(1.715)	(1.941)	(2.934)
$ln(\delta)$	0.387	0.368	0.387	0.264	0.295	0.264
	(0.308)	(0.249)	(0.314)	(0.249)	(0.287)	(0.227)
Times Rank in	Round 1	Round 1	Round 1-3	Round 1-3	All rounds	All rounds
Observations	133	133	133	133	133	133
Log Likelihood	-452.900	-473.220	-452.872	-470.468	-451.194	-468.945

Note: This table presents marginal effects of negative binomial regressions of the model $Performance_i = \beta_0 + \beta_1 LowAbility + \beta_2 HighStatus + \beta_3 LowAbility * HighStatus + \beta_4 LowAbility * TimesRank + \beta_5 HighStatus * TimesRank + \beta_6 LowAbility * HighStatus * TimesRank + Controls'\Gamma + \epsilon_i$, with $\epsilon \sim poisson(\lambda)$. "Performance" is the number of correctly solved matrices in the second stage of Experiment 1,"Times Rank" is the occurrence of rank-access by a subject in the second part of Experiment 1,"High Status" is a dummy variable that captures whether the subject was assigned to the high status treatment "Low Ability" is a dummy variable that captures whether the subject was classified as having low ability on the task. $ln(\delta)$ is the estimated dispersion from the mean. Standard errors presented in parentheses. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

The present article has several limitations that could open avenues for future research. First, even though there are advantages to using laboratory experiments, for example to have the possibility of implementing a status differential that is orthogonal to subjects' ability, these advantages come at the cost of external validity. A more comprehensive causal test of the proposed theory requires experimental setups with more meaningful tasks, higher-powered incentives, a more natural environment for subjects and a naturally occurring social status. The cohort data analysis can be considered one step on that direction if one is willing to make strong assumptions. However, to ensure causality without relying on stringent assumptions and without sacrificing external validity, future research could implement field experiments which are known to incorporate the aforementioned properties.

Also, this paper is silent about the specific way in which social status validates inaccurate beliefs. Is it that widespread beliefs about meritocracy and social mobility provide such validation? Or is it rather that deep-rooted attitudes toward social ranks unconsciously affect beliefs?[22] The empirical methods used in this paper, do not allow me to answer these questions. Future research could perform empirical tests of the proposed mechanism, such as the one presented in this paper, in societies displaying differences in beliefs about meritocracy and social mobility. This could shed light on the role of social perceptions about status in facilitating the existence of the proposed mechanism.

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[22]Status-seeking behaviors are also documented in non-human animals such as apes (de Waal, 2007) and bonobos (Sapolsky, 1992). Suggesting, from an evolutionary perspective, that status-seeking behavior is deep-rooted and could affect beliefs regarding ability.

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Appendix A: Proofs

Lemma 1

Proof. Let Self 1 receive $\tilde{\theta_H}$. He chooses e_H if $E_1(U(e_H, \theta_i)|\tilde{\theta_H}) \geq E_1(U(e_L, \theta_i)|\tilde{\theta_H})$, which can be rewritten as $p_H(\lambda_H, \lambda_L)(\theta_H - \theta_L)(a + s) + \theta_L(a + s) \geq c$ where $p_H(\lambda_H, \lambda_L)$ as in Equation (3). Algebraic manipulations yield the following inequality:

$$\lambda_L \geq 1 - \frac{(\theta_H(a+s) - c)\Big(qr + \lambda_H q(1-r) + \epsilon(1-\lambda_H)\Big)}{\Big(c - \theta_L(a+s)\Big)\chi\left((1-q)r - \epsilon\right)}. \tag{8}$$

Thus, Self 1 chooses e_H after receiving $\tilde{\theta_H}$ if $\lambda_L \geq \hat{\lambda_L}$ where $\hat{\lambda_L} \equiv 1 - \frac{(\theta_H(a+s)-c)(qr+\lambda_H q(1-r)+\epsilon(1-\lambda_H))}{(c-\theta_L(a+s))\chi((1-q)r-\epsilon)}$.

Next, let instead Self 1 receive $\tilde{\theta_L}$. Choosing e_H is profitable as long as $E_1(U(e_H, \theta_i)|\tilde{\theta_L}) \geq E_1 U(e_L, \theta_i)|\tilde{\theta_L})$, a condition that can be rewritten as $p_L(\lambda_H, \lambda_L)(\theta_H - \theta_L)(a+s) + \theta_L(a+s) \geq c$ where $p_L(\lambda_H, \lambda_L)$ as in Equation (4). Algebraic manipulations yield the following condition:

$$\lambda_H \leq 1 - \frac{(\theta_H(a+s) - c)\Big((1-q)(1-r) + \epsilon + \lambda_L\left((1-q)r - \epsilon\right)\Big)}{\Big(c - \theta_L(a+s)\Big)\chi(q(1-r) - \epsilon)} \tag{9}$$

Hence, e_H is chosen when $\tilde{\theta_L}$ is received if $\lambda_H \leq \hat{\lambda_H}$ where $\hat{\lambda_H} \equiv 1 - \frac{(\theta_H(a+s)-c)((1-q)(1-r)+\epsilon+\lambda_L((1-q)r-\epsilon))}{(c-\theta_L(a+s))\chi(q(1-r)-\epsilon)}$. ■

Proposition 1

Proof. Suppose that Self 0 with θ_H chooses $\lambda_H = 1$. Then, according to Lemma 1, Self 1 chooses e_L after receiving $\tilde{\theta_L}$. Instead, if Self 1 receives $\tilde{\theta_H}$, he chooses either e_H or e_L. Given these reactions to unfavorable and favorable signals, Self 0 chooses $\tilde{\theta_k}$ based on the magnitude of m. To see how, let $\lambda_L = 0$, which is equivalent to send $\tilde{\theta_H}$, induce e_L. Self 0 considers such strategy beneficial as long as $E_0(U(\lambda_L = 1, e_L)) = \theta_L(a + s)e_L \leq \theta_L(a + s)e_L + se_L(\theta_H - \theta_L)p_H(\lambda_H = 1, \lambda_L = 0) - m = E_0(U(\lambda_L = 0, e_L))$, which holds when m attains the upper bound $m \leq \frac{se_L q(\theta_H - \theta_L)}{q+\chi(r(1-q)-\epsilon)}$. Alternatively, let $\lambda_L = 0$ induce e_H. Self 0 considers $\lambda_L = 0$ beneficial if $E_0(U(\lambda_L = 1, e_L)) = \theta_L(a + s)e_L \leq \theta_L(a + s)e_H + se_H(\theta_H - \theta_L)p_H(\lambda_H = 1, \lambda_L = 0) - m - c = E_0(U(\lambda_L = 0, e_H))$, which holds when m attains the upper bound $m \leq \frac{se_H q(\theta_H - \theta_L)}{q+\chi(r(1-q)-\epsilon)}$. Hence, when $\lambda_H = 1$ Self 0's best strategy is to set $\lambda_L = 0$ if $m \leq \frac{se_H q(\theta_H - \theta_L)}{q+\chi(r(1-q)-\epsilon)}$.

According to Lemma 1, under $\lambda_H = 1$ and $\lambda_L = 0$, Self 1 chooses e_L after receiving $\tilde{\theta_H}$. If the aim of Self 0 with (θ_L, σ_H) is to induce e_H, he can engage in a mixed strategy $\lambda_L = \rho$ where $\hat{\lambda_H} \leq \rho < 1$. Such strategy is profitable if $E_0(U(e_L, \lambda_L = 1)) = \theta_L(a + s)e_L \leq$

$\theta_L a e_H + s e_H \left(\rho\theta_L + (1-\rho)\left(\theta_H p_H(\lambda_H = 1, \lambda_L = \rho) + \theta_L(1 - p_H(\lambda_H = 1, \lambda_L = \rho))\right)\right) - c - m = E_0\left(U(e_H, \lambda_L = \rho)\right)$. This inequality can be rewritten as,

$$\rho \leq 1 - \frac{\phi q}{1 - \phi\chi\left((1-q)r - \epsilon\right)} \tag{10}$$

where $\phi \equiv \frac{c - \theta_L(a+s) + m}{q(\theta_H - \theta_L)se_H}$.

Suppose $\rho = \hat{\lambda_H}$. Then, equation (10) becomes:

$$1 - \frac{(\theta_H(a+s) - c)q(r + (1-r)\lambda_H)}{(c - (a+s)\theta_L)\chi(1-q)r} \leq 1 - \frac{\phi q}{1 - \phi\chi\left((1-q)r - \epsilon\right)}. \tag{11}$$

Some algebraic manipulations yield,

$$c \leq (a+s)\left(\frac{se_H q\theta_H + \chi\left((1-q)r - \epsilon\right)\left(m - (a+s)\theta_L\right)}{se_H q + (a+s)\chi\left((1-q)r - \epsilon\right)}\right) \tag{12}$$

Hence, if $m \leq \bar{m}$ and $c \leq \bar{c}$ hold, where $\bar{m} = \frac{se_L q(\theta_H - \theta_L)}{q + \chi(r(1-q) - \epsilon)}$ and $\bar{c}$ is the right hand side of (12), Self 0 with (θ_L, σ_H) chooses $\lambda_L = \hat{\lambda_L}$ to which Self 1 reacts with e_H.

Self 0 does not deviate from $\lambda_L = \hat{\lambda_H}$ to choose $\lambda_L = \rho$ where $\hat{\lambda_H} < \rho < 1$ because $E_0(U(e_L, \lambda_L = \rho)) \leq E_0(U(e_H, \lambda_L = \hat{\lambda_L}))$ holds for all feasible values of the parameters of the model since this inequality yields $qse_H(\theta_H - \theta_L)\left(\frac{(1-\rho)}{q + (1-\rho)\chi((1-q)r - \epsilon)} - \frac{(1-\hat{\lambda_L})}{q + (1-\hat{\lambda_L})\chi((1-q)r-\epsilon)}\right) \leq 0$, which is implied by the fact that $\rho > \hat{\lambda_L}$. Therefore, to induce e_H, Self 0 with (θ_L, σ_H) sets $\lambda_L^{**} = \hat{\lambda_L}$ if $m \leq \bar{m}$ and $c \leq \bar{c}$ hold.

Finally, I show that a Self 0 with θ_H does not deviate from $\lambda = 1$. Suppose that setting $\lambda_H = 0$ induces e_H, then Self 0 is better off with $\lambda = 1$ since he does not incur in the cost m and he obtains higher psychological benefits. Formally, the inequality $E_0(U(\lambda_H = 1, e_H)) = \theta_H(a+s)e_H - c > \theta_H(a+s)e_H - se_H(\theta_H - \theta_L)p(\lambda_H = 0, \lambda_L = \hat{\lambda_L}) - m - c = E_0(U(\lambda_H = 0, e_H))$ holds since $-se_L(\theta_H - \theta_L)p(\lambda_H = 0, \lambda_L = \hat{\lambda_L}) - m < 0$. Next, let instead $\lambda_H = 0$ generate e_L. Then, Self 0 is again better off setting $\theta_H = 1$. That is because $E_0(U(\lambda_H = 1, e_H)) = \theta_H(a+s)e_H - c > \theta_H(a+s)e_L - se_L(\theta_H - \theta_L)p(\lambda_H = 0, \lambda_L = \hat{\lambda_L}) - m = E_0(U(\lambda_H = 0, e_H))$ always holds due to $\theta_H(a+s) - c > 0 > -se_L(\theta_H - \theta_L)p(\lambda_H = \nu, \lambda_L = \hat{\lambda_L}) - m$. Similarly, any mixed strategy $\lambda_H = \nu$, where $0 < \nu < 1$, yields lower psychological benefits than setting $\lambda_H = 1$ and generates self-deception costs, making Self 0 worse off. Hence, Self 0 with $\theta_i = \theta_H$ is better off setting $\lambda_H^{**} = 1$ whenever $\lambda_L = \hat{\lambda_L}$.

Finally, Selves 0 with (θ_L, σ_L) or with (θ_L, σ_L) are unable to engage in self-deception and set $\lambda_L^{**} = 1$ and $\lambda_H^{**} = 1$. These strategies yield e_L and e_H, respectively.

■

Corollary 1

Proof. To investigate the effect of increments on ϵ on the conditions required for proposition 1, I compute the partial derivatives $\frac{\partial \bar{c}}{\partial \epsilon}$ and $\frac{\partial \bar{m}}{\partial \epsilon}$. The partial derivative of ϵ on $\bar{c}$ is:

$$\frac{\partial \bar{c}}{\partial \epsilon} = \frac{\chi(a+s)}{se_H q + (a+s)\chi((1-q)r-\epsilon)}((a+s)\theta_L + \bar{c} - m)$$

Suppose $\frac{\partial \bar{c}}{\partial \epsilon} < 0$, then $m > (a+s)\theta_L + \bar{c}$. Since $\bar{c} = (a+s)\left(\frac{se_H q\theta_H + \chi((1-q)r-\epsilon)(m-(a+s)\theta_L)}{se_H q + (a+s)\chi((1-q)r-\epsilon)}\right)$, then the upper bound on m becomes $m > (a+s)(\theta_H + \theta_L)$, which cannot hold inasmuch as Proposition 1 holds if $m < \bar{m}$, where $\bar{m} = \frac{se_H q(\theta_H - \theta_L)}{q+\chi(r(1-q)-\epsilon)}$. Hence, it must be that $\frac{\partial \bar{c}}{\partial \epsilon} > 0$. Next, the partial derivative of ϵ on $\bar{m}$ is:

$$\frac{\partial \bar{m}}{\partial \epsilon} = \frac{\chi se_L q(\theta_H - \theta_L)}{(q + \chi(r(1-q)-\epsilon))^2}$$

where it is evident that $\frac{\partial \bar{m}}{\partial \epsilon} > 0$. Therefore, the conditions for Proposition 1, $c < \bar{c}$ and $m < \bar{m}$ become less stringent. ■

Corollary 2

Proof. I compute partial derivatives to investigate the effect of increases on r,q, and χ on $\bar{c}$ and $\bar{m}$. First, I analyze the effect of increases of r. Note that $\frac{\partial \bar{m}}{\partial r} = \frac{-se_H q(\theta_H - \theta_L)\chi(1-q)}{(q+\chi(r(1-q)-\epsilon))^2} < 0$ and $\frac{\partial \bar{c}}{\partial r} = \frac{(a+s)\chi(1-q)(m-(a+s)\theta_L - \bar{c})}{se_H q + (a+s)\chi((1-q)r-\epsilon)}$. Where the latter derivative is negative because $m - (a+s)\theta_L - \bar{c} < 0$ as shown in Corollary 1. Therefore, it can be concluded that the conditions in Proposition 1 are less stringent as r decreases.

Next, I examine the effect of increases of χ. I find that $\frac{\partial \bar{m}}{\partial \chi} = \frac{-se_H q(\theta_H - \theta_L)(r(1-q)-\epsilon)}{(q+\chi(r(1-q)-\epsilon))^2} < 0$ and $\frac{\partial \bar{c}}{\partial \chi} = \frac{(a+s)((1-q)r-\epsilon)(m-(a+s)\theta_L - \bar{c})}{se_H q + (a+s)\chi((1-q)r-\epsilon)}$. Where the latter derivative is negative because $m - (a+s)\theta_L \bar{c} < 0$ as shown in Corollary 1. Hence, the conditions in Proposition 1 become less stringent as χ decreases.

Finally, I analyze the effect of increases of q. I find that $\frac{\partial \bar{m}}{\partial q} = \frac{se_H q(\theta_H - \theta_L)(q+(r-\epsilon)\chi)}{(q+\chi(r(1-q)-\epsilon))^2} > 0$ and $\frac{\partial \bar{c}}{\partial q} = \frac{se_H \theta_H(\theta_H - \bar{c}) + \chi(a+s)\chi r(\bar{c} - m + \theta_L(a+s))}{se_H q + (a+s)\chi((1-q)r-\epsilon)}$. The second derivative is positive inasmuch as $c \leq \theta_H(a+s)$ and $-m + (a+s)\theta_L + \bar{c} > 0$ as shown in Corollary 1. Hence, the conditions in Proposition 1 are less stringent as q increases.

■

Proposition 2

Proof. Suppose that Self 0 with θ_L chooses $\lambda_L = 1$. Thus, Lemma 1 states that after receiving $\tilde{\theta_H}$, Self 1 chooses e_H since $\lambda_L = 1 \geq \hat{\lambda}_L$. Instead, Self 1 chooses either e_H or e_L after receiving $\tilde{\theta_L}$. Let the strategy $\lambda_L = 0$ generate e_H in Self 1. Then, Self 0 with (θ_H, σ_L) is better off choosing $\lambda_H = 1$ since for all feasible values that the parameters of the model can attain: $E_0(U(\lambda_H = 1, e_H)) = \theta_H(a+s)e_H - c \geq \theta_H(a+s)e_H - se_H(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 1) - m - c = E_0(U(\lambda_H = 0, e_H))$, since $-se_L(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 1) - m < 0$. Alternatively, let $\lambda_H = 0$ yield e_L. Then, Self 0 with (θ_H, σ_L) is better off choosing $\lambda_H = 1$ because $E_0(U(\lambda_H = 1, e_H)) = \theta_H(a+s)e_H - c \geq \theta_H(a+s)e_L - se_L(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 1) - m = E_0(U(\lambda_H = 0, e_H))$ holds for all the feasible values that the parameters of the model can attain since $\theta_H(a+s) - c > 0 > -se_L(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 1) - m$. Hence, Self 0's best response is to set $\lambda_H^{**} = 1$ if $\lambda_L = 1$.

Suppose now that $\lambda_H = 1$. According to Lemma 1, Self 1 chooses e_L when receiving $\tilde{\theta_L}$ since $\lambda_H = 1 \geq \hat{\lambda_H}$. Instead, if Self 1 receives $\tilde{\theta_H}$ he can either choose e_H or e_L. The strategy of Self 0 with $(\theta_i = \theta_L, \sigma_H)$ depends on the magnitude of m. In particular, when $\lambda_L = 0$ induces e_L, he is better off setting $\lambda_L = 1$ if $m > \frac{se_L q(\theta_H - \theta_L)}{q + \chi((1-q)r - \epsilon)}$, because for these values of m the inequality $E_0(U(\lambda_L = 1, e_L)) = \theta_L(a+s)e_L > \theta_L(a+s)e_L + se_L(\theta_H - \theta_L)p_H(\lambda_H = 1, \lambda_L = 0) - m = E_0(U(\lambda_L = 0, e_L))$ holds. Alternatively, when $\lambda_L = 0$ induces e_H, Self 0 is better off setting $\lambda_L = 1$ whenever $m > \frac{se_H q(\theta_H - \theta_L)}{(q + \chi(r(1-q)) - \epsilon)}$. That m attains such lower bound guarantees that $E_0(U(\lambda_L = 1, e_L)) = \theta_L(a+s)e_L > \theta_L(a+s)e_H + se_H(\theta_H - \theta_L)p_H(\lambda_H = 1, \lambda_L = 0) - m - c = E_0(U(\lambda_L = 0, e_H))$. Therefore, Self 0's best strategy is to set $\lambda_L^{**} = 1$ if $\lambda_H = 1$ and $m > \frac{se_H q(\theta_H - \theta_L)}{q + \chi(r(1-q) - \epsilon)}$.

Lemma 1 states that when $\lambda_L^{**} = 1$ and $\lambda_H^{**} = 1$, Self 1 reacts to $\tilde{\theta_L}$ with e_L and to $\tilde{\theta_H}$, with e_H.

■

Appendix B: Additional equilibria of the status and self-deception game

In this appendix I present the remaining equilibria of the social status and self-deception game. These equilibria are relegated to an appendix for two reasons. The first is to keep the paper short and coherent; presenting the whole set of equilibria could deviate the reader's attention from the main message of this study which that status can have an influence on performance by means of beliefs. This message is adequately conveyed by Proposition 1. The second reason is that the equilibria presented in the main body of the paper are the empirically relevant equilibria. While Proposition 1 yields the message that status can affect beliefs and performance, Proposition 2 represents the opposing situation in which status is economically irrelevant. Instead, the equilibria described below yield that status affects beliefs and performance in unexpected ways.

I start describing an equilibrium in which individuals exert low effort regardless of their social status or ability. This equilibrium is a pooling equilibrium at low levels of effort and it illustrates a situation in which low ability individuals engage in self-deception whenever they can, making favorable signals non-credible.

Definition A.1. *A "low pooling" equilibrium of the status and self-deception game is characterized by the tuple* $(\lambda_l^{**}, e_l^{**})$*, where*

$$e_l^{**} = e_L$$

and

$$\lambda_l^{**} = \begin{cases} 0 & \textit{if } (\theta_L, \sigma_H), \\ 1 & \textit{if } \theta_H \text{ or } (\theta_L, \sigma_L). \end{cases}$$

Proposition A.1. *The equilibrium* $(\lambda_l^{**}, e_l^{**})$ *is sustained if* $s > 0$*,* $c > \bar{c}$*,* $m \leq \bar{m}$*, and* $m > a(\theta_H - \theta_L) + s(\theta_H - \theta_L)\frac{((1-q)(1-r)+\epsilon)e_L + \chi((1-q)r-\epsilon)}{(1-q)(1-r)+\epsilon+\chi((1-q)r-\epsilon)}$.

Proof. Suppose that $\lambda_H = 1$. According to Lemma 1, Self 1 chooses e_L when receiving $\tilde{\theta_L}$ since $\lambda_H = 1 \geq \hat{\lambda_H}$. Instead, after receiving $\tilde{\theta_H}$, Self 1 chooses either e_H or e_L. Given these possible reactions, Self 0's strategy depends on the magnitude of m. In particular, when $\lambda_L = 0$ induces e_L and $m \leq \frac{se_L q(\theta_H - \theta_L)}{q+\chi(r(1-q)-\epsilon)}$, Self 0 is better off setting $\lambda_L = 0$, because for those values of m, $E_0(U(\lambda_L = 1, e_L)) = \theta_L(a+s)e_L \leq \theta_L(a+s)e_L + se_L(\theta_H - \theta_L)p_H(\lambda_H = 1, \lambda_L = 0) - m = E_0(U(\lambda_L = 0, e_L))$. Instead, if $\lambda_L = 0$ induces e_H, Self 0 is better off setting $\lambda_L = 0$ as long as $m \leq \frac{se_H q(\theta_H - \theta_L)}{q+\chi(r(1-q)-\epsilon)}$ since $E_0(U(\lambda_L = 1, e_L)) = \theta_L(a+s)e_L \leq \theta_L(a+s)e_H + se_H(\theta_H - \theta_L)p_H(\lambda_H = 1, \lambda_L = 0) - m - c = E_0(U(\lambda_L = 0, e_H))$ requires that m attains, at least, $m = \frac{se_H q(\theta_H - \theta_L)}{q+\chi((1-q)-\epsilon)}$.

Additionally, according to Proposition 1 Self 0 prefers to set $\lambda_L = 0$ to $\lambda_L = \hat{\lambda_L}$ if $c > \bar{c}$, since $E_0(U(e_L, \lambda_L = 0)) > E_0(U(e_H, \lambda_L = \hat{\lambda_H}))$. Therefore, Self 0's best strategy is to set $\lambda_L = 0$ if $\lambda_H = 1$ and $m \leq \frac{se_L q(\theta_H - \theta_L)}{q+\chi(r(1-q)-\epsilon)}$.

Next, suppose that $\lambda_L = 0$. According to Lemma 1, Self 1 chooses e_L after receiving $\tilde{\theta_H}$ since $\lambda_L = 0 < \hat{\lambda_L}$. Instead, if $\tilde{\theta_L}$ is received, Self 1 chooses either e_H or e_L. Self 0 is better off setting $\lambda_H = 1$ if $\lambda_H = 0$ induces e_L, since $E_0(U(\lambda_H = 1, e_L)) = \theta_H(a+s)e_L \geq \theta_H(a+s)e_L - se_L(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 0) - m = E_0(U(\lambda_H = 0, e_L))$ always holds due to $-se_L(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 0) - m < 0$. In contrast, when $\lambda_H = 0$ induces e_H, Self 0 is better off with $\lambda_H = 1$ rather than with $\lambda_H = 0$ whenever $m > a(\theta_H - \theta_L) + s(\theta_H - \theta_L)\frac{((1-q)(1-r)+\epsilon)e_L + \chi((1-q)r-\epsilon)}{(1-q)(1-r)+\epsilon+\chi((1-q)r-\epsilon)}$. This is because $E_0(U(\lambda_H = 1, e_L)) = \theta_H(a+s)e_L > \theta_H(a+s)e_H - se_H(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 0) - m - c = E_0(U(\lambda_H = 0, e_H))$ holds for such values of m. Therefore, when $\lambda_L = 0$ and the cost of self-deception is large, Self 0 with (θ_H, s_L) sets $\lambda_H^{**} = 1$.

Lemma 1 states that when $\lambda_L^{**} = 0$ and $\lambda_H^{**} = 1$, favorable signals $\tilde{\theta_H}$ are best responded with e_L. Finally, individuals with (θ_L, σ_L) and (θ_H, σ_H) set $\lambda_L^{**} = 1$ and $\lambda_H^{**} = 1$, respectively, to which Self 1 reacts with e_L.

■

Proposition A.1 presents an equilibrium in which low ability individuals engage in a pure strategy of self-deception $\lambda_L = 0$. In contrast to Proposition 1, engaging in a mixed strategy $\lambda_L = \hat{\lambda_H}$ to make Self 1 indifferent is no longer profitable due to the high costs faced by the individual when e_H is chosen. However, self-deception is profitable inasmuch as it yields psychological utility and the costs associated to it are moderate for the low types, i.e. $m < \bar{m}$. For high ability individuals is best strategy to be truthful because they could generate e_L without the need of engaging in self-deception and because the costs associated to high effort are too elevated. As stated above, Self 1 reacts to favorable signals setting low effort levels.

Another equilibrium arising from the game is a separating equilibrium in social status. However, in this equilibrium effort becomes lower with higher status.

Definition A.2. *A separating equilibrium of the status and self-deception game is characterized by the tuple* $(\lambda_m^{**}, e_m^{**})$*, where*

$$e_m^{**} = \begin{cases} e_L & \textit{if } (\theta_L, \sigma_H) \textit{ and } (\theta_H, \sigma_H), \\ e_H & \textit{if } (\theta_L, \sigma_L) \textit{ and } (\theta_H, \sigma_L). \end{cases}$$

and

$$\lambda_m^{**} = \begin{cases} 0 & \textit{if } (\theta_L, \sigma_H) \textit{ and } (\theta_H, \sigma_L), \\ 1 & \textit{if } (\theta_L, \sigma_L) \textit{ and } (\theta_H, \sigma_H). \end{cases}$$

Proposition A.2. *The equilibrium* $(\lambda_m^{**}, e_m^{**})$ *is sustained if* $s > 0$, $c > \bar{c}$, $m < \bar{m}$, *and* $m \leq a(\theta_H - \theta_L) + s(\theta_H - \theta_L)\frac{((1-q)(1-r)+\epsilon)e_L + \chi((1-q)r-\epsilon)}{(1-q)(1-r)+\epsilon+\chi((1-q)r-\epsilon)}$.

Proof. Let $\lambda_H = 0$. According to Lemma 1, self 1 chooses e_H after receiving $\tilde{\theta_L}$ since $\lambda_H = 0 < \hat{\lambda_H}$. Instead, if $\tilde{\theta_H}$ is received, Self 1 chooses either e_H or e_L. Self 0's strategy with (θ_L, σ_H) depends on m. Let $\lambda_L = 0$ generate e_L, then $E_0(U(\lambda_L = 0, e_L) = (a + s)\theta_L e_L + s e_L(\theta_H - \theta_L)p_H(\lambda_H = 0, \lambda_L = 0) - m \geq (a + s)\theta_L e_H - c = E_0(U(\lambda_L = 1, e_H)$ whenever $m \leq \frac{(qr+\epsilon)se_L(\theta_H-\theta_L)}{qr+\epsilon+\chi((1-q)r-\epsilon)}$. Next, let $\lambda_L = 0$ induce e_H. Self 0's strategy again depends on the values that m attains. Strategy $\lambda_L = 0$ is profitable if $m \leq \frac{(qr+\epsilon)se_H(\theta_H-\theta_L)}{qr+\epsilon+\chi((1-q)r-\epsilon)}$. That m attains such lower bound guarantees that $E_0(U(\lambda_L = 1, e_H)) = \theta_L(a + s)e_H - c \leq \theta_L(a + s)e_H + se_H(\theta_H - \theta_L)p_H(\lambda_H = 0, \lambda_L = 0) - m - c = E_0(U(\lambda_L = 0, e_L))$.

Let $\lambda_L = 0$. According to Lemma 1, Self 1 chooses e_L after receiving $\tilde{\theta_H}$ since $\lambda_L = 0 < \hat{\lambda_L}$. Instead, if $\tilde{\theta_L}$ is received, Self 1 chooses either e_H or e_L. Suppose that $\lambda_H = 0$ induces e_L. Then, self 0 is better off setting $\lambda_H = 1$ since the inequality $E_0(U(\lambda_H = 1, e_L)) = \theta_H(a + s)e_L \geq \theta_H(a + s)e_L - se_L(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 0) - m = E_0(U(\lambda_H = 0, e_L))$ holds for all the possible values that the parameters of the model can attain since $-se_L(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 0) - m < 0 < \theta_H(a + s)$. Instead,Self 0 is better off setting $\lambda_H = 0$ rather than $\lambda_H = 1$ if $\lambda_H = 0$ induces e_H and $m \leq a(\theta_H - \theta_L) + s(\theta_H - \theta_L)\frac{((1-q)(1-r)+\epsilon)e_L+\chi((1-q)r-\epsilon)}{(1-q)(1-r)+\epsilon+\chi((1-q)r-\epsilon)}$. Because for such values of m the inequality $E_0(U(\lambda_H = 1, e_L)) = \theta_H(a + s)e_L \leq \theta_H(a + s)e_H - se_H(\theta_H - \theta_L)p_L(\lambda_H = 0, \lambda_L = 0) - m - c = E_0(U(\lambda_H = 0, e_H))$ holds. Thus, when $\lambda_L = 0$ Self 0 with $\theta_i = \theta_H$ is better off sending $\lambda_H = 1$ as long as the cost of self-deception is not larger than the upper bound $m \leq a(\theta_H - \theta_L) + s(\theta_H - \theta_L)\frac{((1-q)(1-r)+\epsilon)e_L+\chi((1-q)r-\epsilon)}{(1-q)(1-r)+\epsilon+\chi((1-q)r-\epsilon)}$.

Lemma 1 shows that for $\lambda_L^{**} = 0$ and $\lambda_H^{**} = 1$, Self 1 reaction to receiving $\tilde{\theta_H}$ is setting e_L. Also, upon receiving $\tilde{\theta_L}$ Self 1's best-response is to set e_H. Finally, individuals with (θ_L, σ_L) and (θ_H, σ_H) set $\lambda_L^{**} = 1$ and $\lambda_H^{**} = 1$, to which self 1 reacts with e_H and e_L, respectively.

■

Proposition A.2 presents an equilibrium in which high and low ability individuals engage in pure strategies of self-deception. Such behavior makes favorable and unfavorable signals not credible. According to Lemma 1, this propensity to engage in self-deception from both types entails that Self 1's reaction to favorable signals is to exert low effort,e_L and also that the reaction to unfavorable signals is to set high effort, e_H.

This equilibrium emerges because low ability individuals have no incentive to be truthful: they derive utility gains from holding high beliefs about their ability. Similarly, high ability individuals engage in a strategy of self-deception because self-deception is not too costly and because being truthful generates lower effort levels, which leads to lower utility levels.

Appendix C: Description of control variables

Table 10: Variables description

Variable	Sweep	Type	Description
Demographic			
Mother's age birth	1970	Continuous	Age of mother at first birth
Father's age	1970	Continuous	Age of father at present marriage
Female	1970	Dichotomous	Whether individual is female
Family Income	1980	Categorical	Gross weekly family income
Cognitive ability			
Number of O levels	1986	Continuous	Number of achieved O-levels
EPVT	1975	Continuous	English Picture Vocabulary Test
MATHS	1980	Continuous	Friendly Maths Test Score
READ	1980	Continuous	Edinburgh Reading Test Score
Copy	1975	Continuous	Score of Copying Test
BAST	1980	Continuous	British Ability Scale Test
Non-cognitive traits			
Anti-social	1975	Continuous	Disobedient, destructive, aggressive, restless and tantrum.
Neurotic	1975	Continuous	miserable, worried, fearful, fussy and complains of aches and pains.
Anxiety	1980	Continuous	9 items on anxiety.
Hyperactivity	1980	Continuous	6 items, includes the items squirmy, excitable, twitches, hums and taps.
Application	1980	Continuous	Child's concentration and perseverance and ability to understand and complete complex tasks.
Clumsiness	1980	Continuous	items on bumping into things, and the use of small objects such as scissors.
Extroversion	1980	Continuous	items concerning talkativeness and an explicit question about extroversion.
CAROLOC	1980	Continuous	Score for locus of control (Gammage, 1975)
LAWSEQ	1980	Continuous	Score for self-confidence (Lawrence, 1973, 1978)

Variables description (Continued)

Variable	Sweep	Type	Description
Self-reported skills			
Communicator	1986	Dichotomous	Whether individual is a good communicator
Handy	1986	Dichotomous	Whether individual is good with hands
Thinker	1986	Dichotomous	Whether individual is a clear thinker
Worker	1986	Dichotomous	Whether individual is a hard worker
Tidy	1986	Dichotomous	Whether individual is clean and tidy
Reliable	1986	Dichotomous	Whether individual is reliable
Time	1986	Dichotomous	Whether individual is a good time-keeper
Responsible	1986	Dichotomous	Whether individual can take responsibility
Attitudes toward school			
Waste	1986	Categorical	School is largely a waste of time
Quiet	1986	Categorical	Quiet in classroom and get on with work
Bore	1986	Categorical	Thinks homework is a bore
Mind	1986	Categorical	Find it difficult to keep mind on work
Seriously	1986	Categorical	Never take work seriously
Do not like school	1986	Categorical	Do not like school
No plans	1986	Categorical	Plans pointless,take things as they come
Help teacher	1986	Categorical	Always willing to help the teacher
Health variables			
Missed school	1986	Dichotomous	Missed school past 2 yrs due to health
Days Missed	1986	Continuous	Number of school days lost
Depressed	1986	Dichotomous	Whether individual depressed or anxious
Days depressed	1986	Continuous	Days the individual is depressed
Medical help	1986	Dichotomous	Visited the doctor when depressed
Neighborhood variables			
Neighbors	1986	Categorical	What are people like in your neighborhood?
Walk alone	1986	Categorical	Ever walk alone in your area after dark?
Safe walk alone	1986	Categorical	if walk alone, how do you feel?
Expectations			
Parents Expectations	1986	Dichotomous	Advised by parents to leave school early.
Teachers Expectations	1986	Dichotomous	Advised by teachers to leave school early.
Own expectations	1986	Dichotomous	Always taken early leaving for granted

Table 11: Descriptive statistics of variables

Variable	**N**	**Mean**	**Median**	**St. Dev.**
Demographics				
Mothers' age birth	17,196	21.94	22	4.727
Father's age	17,196	13.551	21	14.939
Female	8,874	0.526	1	0.499
Family Income	14,875	2.612	3	1.993
Cognitive ability				
No. of O-levels	23,327	1.263	0	2.449
EPVT	13,1357	34.280	36	16.256
MATHS	14,875	34.154	40	21.521
READ	14,875	-0.342	-0.76	0.940
Copy	13,135	4.663	5	2.089
BAST	11,368	62.662	63	12.295
Non-cognitive traits				
Anti-social	13,135	9.228	9	3.825
Anxiety	12,751	135.374	124	76.910
Hyperactivity	12,751	69.969	58	50.655
Neurotic	13,135	8.044	8	3.392
Application	12,751	312.581	311	59.116
Clumsiness	12,751	197.218	195	47.137
Extroversion	12,751	145.608	147	27.123
CAROLOC	23,327	3.675	3	3.942
LAWSEQ	23,327	8.247	8	8.237
Self-reported skills				
Communicator	11,617	0.459	0	0.36
Handy	11,617	0.495	0	0.387
Thinker	11,617	0.494	0	0.387
Worker	11,617	0.299	0	0.221
Tidy	11,617	0.432	0	0.340
Reliable	11,617	0.295	0	0.217
Responsible	11,617	0.363	0	0.644

Descriptive statistics of variables (continued)

Variable	N	Mean	Median	St. Dev.
Attitudes toward school				
Waste	11,617	0.952	2	1.879
Quiet	11,617	0 .604	1	1.564
Bore	11,617	0.490	1	1.480
Mind	11,617	0.679	1	1.650
Seriously	11,617	0.910	2	1.848
No Plans	11,617	0.907	1	1.854
Help teacher	11,617	0.636	1	1.603
health variables				
Missed school	11,617	0.544	1	0.438
Days missed	11,617	2.014	0	12.055
Depressed	11,617	0.590	0	0.426
Days depressed (>0)	11,617	3.308	4	0.871
Medical help (>0)	11,617	1.925	1	0.262
Neighborhood				
Neighbors	11,617	.996	1	1.816
Walk alone	11,617	.996	1	1.209
Safe walk alone	11,617	0 .837	1	1.689
Expectations				
Parents Expectations (>-1)	11,617	0.918	1	0.274
Teacher Expectations(>-1)	11,617	0.96	1	0.171
Own expectations(>-1)	11,617	0.903	1	0.087

Appendix D: Experimental Instructions

This is an experiment in the economics of decision-making. The instructions are simple and if you follow them carefully and make good decisions, you might earn a considerable amount of money, which will be paid to you via bank transfer at the end of the experiment. The amount of payment that you receive depends entirely on your decisions and effort.

Once the experiment has started, no one is allowed to talk to anybody other than the experimenter. Anyone who violates this rule will lose his or her right to participate in this experiment. If you have further questions when reading these instructions please do not hesitate to raise your hand and formulate the question to the experimenter.

Part 1

In the first part of the experiment we will ask you to solve a set of 12 tasks, in each of the tasks you are asked to complete a pattern, to do so, you need to choose among some of the options that we provide. Remember that only one of the options is correct. In this part of the experiment you have 4 minutes in order to complete the set of 12 tasks. With the completion of this task we will place you in one of two groups. At the beginning of this part of the experiment we will ask you to provide a personal goal or target, this is we would like you to estimate how many patterns you would be able to solve in that round. Please provide this goal at your best ability! We would really like to know how accurate your estimates are.

Here is an example, which option do you think is the most accurate to complete the pattern?
(Display Example 1)

Here is another example, which option do you think is the most accurate to complete the pattern?
(Display Example 2)

(Completion set I, programmed to be 5 minutes)

The following participants have a position in the GOLD group. [Call out ID numbers]. Please come up as we call your name and receive your medal. You will wear your medal for the rest of the exercise. Please remain standing at the front of the room until all medals are distributed.
Let's give the Gold group a round of applause!

Part 2

In the second and last part of the experiment you are asked to solve patterns just like the ones that you completed in the first part of this experiment. You need to solve as many patterns as you can, since for each correctly solved pattern you would receive a certain amount of points, which can be exchanged for money at the end of the experiment. Hence the money that you earn in the exercise depends on your performance in this part of the experiment.

(Display only if relative performance ranking available) While working on the patterns you can also check you ranking with respect to your peers by pressing on the button "check my ranking" located at the bottom of your screen. Mind that this descending ranking only reflects your performance in the task with respect to your peers. You can go back to complete patters by pressing the bottom "Take me back to work".

During this part of the experiment you have 5 rounds, each of 4 minutes, to complete as many patterns as you can. Feedback about your own performance, this is whether you solved correctly a pattern or not, would be given to you as soon as you solved that pattern. A summary of the number of correctly solved and incorrectly solved patterns in the round would be given to you as soon as the round ends. Your final score, this is the amount of points derived from each round, would only be shown to you at the end of the experiment. The exchange rate at which the points can be exchanged for money would be determine is of 0.50 Euro cents per point.

Finally, at the beginning of each round we will ask you to provide a personal goal or target, this is we would like you to estimate how many patterns you would be able to solve in that round. Please provide this goal at your best ability! we would really like to know how accurate are your estimates.

(Completion set II, programmed to take 25 minutes)

Appendix E: Additional Analyses

E.1 Heterogeneous treatment effects

To better understand the effect of the treatments on performance, I abandon the binary classification of ability, e.g. high and low, and use instead subjects' performance on the first part of the experiment as a "continuous" measure of ability. Such analysis allows for a richer quantification of the treatment effect. Table 12 presents the estimates of negative binomial regressions of performance on the second part of the experiment on performance on the first part of the experiment, treatment dummies and, for some specifications, relevant controls.

The estimates suggest that the treatments generate a drastic change in the relationship between subjects' performance in the first part of the experiment and performance in the second part of the experiment. The estimate associated to "Performance Part I" in Table 3 suggests that for subjects assigned to low status, these two parts relate positively. Specifically, solving correctly one additional matrix in part one increases performance in the second part of the experiment by 2.18 tables on average. In contrast, the estimate associated to "Part I* High status" shows that subjects assigned to High Status exhibit a negative relationship between the two parts of the experiment. For these subjects, solving correctly an additional matrix in the first part of the experiment yields a decrease in performance of 3.058 tables on average. The asymmetry of these two effects, along with the large coefficient associated to "High Status", account for the treatment effects presented in Table 2.

Furthermore, I find that, after the inclusion of relevant controls, solving correctly one additional matrix yields an increase of beliefs in the second part of the experiment of 1.37 matrices on average when the subject is assigned to Low Status. Hence, higher performance in Part 1 of the experiment generates higher beliefs in the second part of the experiment. The estimate associated to "High Status" shows that for any performance level in Part 1 of the experiment, subjects exhibit higher beliefs when assigned to High Status as compared to subjects that exhibit the same performance in part 1 of the experiment but who were assigned to low status.

E.2 Beliefs by round

To gain further understanding about the influence of social status on beliefs, I investigate how beliefs evolve over experimental rounds. The aim of this analysis is twofold. First, it seeks to study if the treatment assignment affects beliefs at the onset of the experiment or if such influence requires time and experience on the task. Second, it allows me to understand how individuals update beliefs in each round and how the treatment assignment influenced this

Table 12: Heterogeneous Treatment Effects in Experiment 1

	(1) Performance	(2) Performance	(3) Beliefs	(4) Beliefs
High Status* Performance Part 1	-3.058***	-3.058***	-0.849	-0.979
	(0.951)	(0.861)	(1.185)	(0.655)
High Status	28.616***	28.743***	8.794	10.195*
	(8.868)	(8.102)	(11.001)	(5.983)
Performance Part 1	2.184***	2.392***	1.300	1.373***
	(0.639)	(0.593)	(0.987)	(0.476)
Session Size		-0.628*		0.087
		(0.358)		(0.308)
Belief practice round		-0.041		1.513***
		(0.199)		(0.137)
Medal Fair		-2.243		-0.776
		(1.555)		(1.157)
Locus of Control		0.736*		0.381
		(0.414)		(0.361)
Female		3.476**		-0.426
		(1.590)		(1.242)
Performed Task Before		5.777***		4.793***
		(1.963)		(1.682)
$ln(\delta)$	0.612***	0.394	0.577***	-1.000
	(0.260)	(0.287)	(0.206)	(0.636)
N	136	136	136	136
Log-likelihood	-472.418	-463.537	-492.051	-443.101

Note: This table presents marginal effects of negative binomial regressions of the model $Performance_i = \beta_0 + \beta_1 PerformancePart1 + \beta_2 HighStatus + \beta_3 PerformancePart1 * HighStatus + Controls'\Gamma + \epsilon_i$, with $\epsilon \sim poisson(\lambda)$. "Performance" is the number of correctly solved matrices in the second part of Experiment 1, "High Status" is a dummy variable that captures whether the subject was assigned to the high status treatment "Performance Part 1' is the number of correctly solved matrices in the first part of the experiment. $ln(\delta)$ is the estimated dispersion from the mean. Standard errors presented in parentheses. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

updating process. The analysis presented in this subsection focuses on low ability subjects, because high ability subjects did not exhibit differences in aggregate beliefs or differences in performance across treatments.

Table 13 presents the average beliefs of subjects by round, by treatment, and by ability. I find that low ability subjects assigned to different treatments display similar average beliefs in the first ($U = 0.811, p = 0.417$) and second round ($U = 0.416, p = 0.677$). However, as of the third round, steep treatment differences emerge.[23] Hence, the treatments' influence on beliefs emerges after the first two rounds. In addition, the average beliefs by round of low and high ability subjects are similar in when both groups of subjects are assigned High Status.[24]

Table 13: Performance beliefs by round and by treatment for low ability subjects

Ability Treatment	Low Ability High Status	Low Ability Low Status	High Ability High Status	High Ability Low Status
$\text{Belief}_{r=1}$	7.228	8.103	7.804	8.428
	(2.880)	(4.369)	(4.539)	(4.590)
$\text{Belief}_{r=2}$	8.542	8	8.464	9.463
	(2.582)	(2.449)	(1.971)	(2.079)
$\text{Belief}_{r=3}$	6.285	5.310	6.560	6.785
	(1.824)	(2.361)	(2.549)	(2.079)
$\text{Belief}_{r=4}$	4.371	3.724	4.464	4.634
	(2.073)	(2.085)	(1.815)	(2.130)
$\text{Belief}_{r=5}$	3.3714	2.482	3.142	3.341
	(2.498)	(1.882)	(1.603)	(2.220)
Belief_{r}	5.96	5.524	6.257	6.345
	(3.029)	(3.549)	(3.285)	(3.259)

Note: This table presents the averages and standard deviations of beliefs in the second part of Experiment 1 by experimental treatment and round for those subjects classified as low ability. Standard deviations are presented in parentheses.

To understand how subjects update beliefs, I perform a regression relating subjects' beliefs in some round r to their beliefs and performance in previous rounds. This analysis allows me to distinguish between subjects possibly setting high beliefs to match high performance levels achieved in previous rounds from subjects setting high beliefs due to the influence of the treatment alone. Evidence supporting the former conjecture would suggest that the high status treatment induced high performance, and beliefs follow. Alternatively, evidence

[23]The t-tests of these differences are round 3 ($t(52.046) = -1.819, p = 0.03$), round 4 ($t(59.678) = -1.239, p = 0.110$) and round 5 ($t(61.499) = -1.621, p = 0.055$)

[24] The t-tests of these differences are round 1 ($t(43.284) = 1.206, p = 0.234$, round 2 ($t(60.890) = -0.136, p = 0.891$) ,round 3 ($t(54.178) = 1.001, p = 0.321$), round 4 ($t(60.466) = 0.189, p = 0.850$) and round 5 ($t(58.501) = 58.501, 0.661$

supporting the latter would corroborate the existence of the proposed mechanism: social status induces internal constraints through beliefs, which consequently affect performance.

The specific statistical model regresses individual beliefs in round r on performance in round $r-1$, beliefs in the previous two rounds, $r-1$ and $r-2$, treatment dummies, and relevant controls.[25] I estimate the model using the Blundell and Bond technique, which has the advantage of allowing the error term of the regression to be correlated with non-observable characteristics. Additionally, I instrumented the subject's belief in the previous round, as is typically done in dynamic panel data models, as well as the subject's performance in the previous round.

Table 14 presents the estimates of the Blundell and Bond regression. The data suggest that the belief-updating process of low ability subjects differs across treatments in two aspects. First, there is a treatment difference in how subjects update beliefs in reaction to achieved performance in the previous round. Specifically, subjects who belong to High Status update their beliefs upward with respect to performance in the previous round, while subjects belonging to Low Status do not exhibit this feature. This difference in belief updating suggests that the assignment to High Status induced confidence in the subjects, who believed that they could improve their previous achievement. This result disregards the conjecture of subjects setting high beliefs to match high performance levels in previous rounds.

Second, low ability subjects assigned High Status exhibited stronger state dependence (Heckman, 1981). This means that they exhibit a stronger inertia toward updating beliefs upward as rounds elapse. Subjects in High Status update beliefs upward with respect to their own beliefs in the previous two rounds, while subjects in Low Status also update their beliefs upward, but only with respect to their own beliefs in the previous round. This difference in belief updating between similarly skilled subjects suggests that, regardless of achieved performance in previous rounds, subjects with high status had the confidence to update beliefs upward more steeply than their counterparts with low status.

These two differences in belief updating between subjects assigned to different treatments support the findings of Eil and Rao (2011) and Mobius et al. (2014) who find that favorable and unfavorable signals about ability are internalized differently. In my experiment, subjects with low ability reacted to an assignment to high status by frequently and steeply updating their beliefs upward, displaying optimism about the level of performance they expected to attain in the next round. Such optimism emerged despite them having received unfavorable feedback in the first part of the experiment. In contrast, the low status assignment was ignored by high ability subjects who behaved and formed beliefs as if they were ignoring such

[25] This model is the one that best fits the data, additional auto-regressive terms display no statistical significance at the 10% level.

Table 14: Belief dynamics for low ability subjects

	(1)	(2)	(3)
Sample	Low Ability	Low Ability/High Status	Low Ability/ Low Status
	Belief_r	Belief_r	Belief_r
Belief_{r-1}	0.4170***	0.400 ***	0.342***
	(0.127)	(0.155)	(0.436)
Belief_{r-2}	0.083	0.258***	0.016
	(0.055)	(0.088)	(0.075)
Performance_{r-1}	0.488***	0.521***	0.311
	(0.124)	(0.149)	(0.235)
Constant	11.528***	-1.441***	-12.201
	(155.444)	(46.090)	(15.728)
Controls	Yes	Yes	Yes
Observations	192	105	87
# instruments	23	23	23

Note: This table presents estimates of the Blundell and Bond regression of the model $Belief_{ri} = \beta_0 + \beta_1 Belief_{(r-1)i} + \beta_2 Performance_{(r-1),i} + Controls'\Gamma + \epsilon_i$. "Belief" is a subject's beliefs about the number of correctly solved matrices in round r. "Performance" is the number of correctly solved matrices in a round in the second part of the experiment. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

unfavorable signals.

Appendix F: Experiment 2

In the second experiment, High Status is exclusively assigned to high ability subjects. The goal of this experiment is to investigate whether this meritocratic assignment maintains the ability differences between high and low ability subjects in the second part of the experiment. Such a result would suggest that the treatment effects in Experiment 1 are entirely caused by the assignment to the treatments and not by other confounding factors. As in the analysis presented in the main body of the paper, I begin showing that the classification of subjects into high and low ability entails considerable performance differences in the first part of the experiment. According to the data, the difference in average performance between low and high ability subjects is of 2.31 standard deviations (Hedge's g, $p < 0.001$).

In the second part of the experiment, high ability subjects outperformed low ability subjects ($U = 2.169, p = 0.015$). This difference is equal to 0.407 standard deviations (Hedge's g, $p = 0.015$ with 1000 bootstrap replications). This result demonstrates that when assigned low status, low ability subjects achieve lower performance levels in the second part of the experiment.

To control for factors other than treatment assignment that could be driving these results, I perform negative binomial regressions of performance in the second part of the experiment on subjects' ability, treatment dummies and relevant controls. The estimates, presented in Columns 1 and 2 of Table 15, confirm the finding that subjects assigned to High Status exhibit higher performance on the task.

Next, I show that unless assigned to High Status, subjects with low ability exhibit lower beliefs as compared to high ability subjects. Table 16 presents the aggregated beliefs of subjects participating in Experiment 2 as well as their beliefs by round and by treatment. On average, beliefs of high ability subjects are 9.2% higher than those of low ability subjects ($U = 3.11(U = 2.99, p = 0.001)$. This difference emerges in the first rounds of the experiment; high status subjects display higher beliefs in round two ($U = 3.433, p = 0.001$) and round three ($U = 3.254, p = 0.0003$). This result is corroborated by negative binomial regressions of performance on treatment dummies and relevant controls. The estimates presented in columns 3 and 4 of Table 15 show that unless assigned high status, as in Experiment 1, low ability subjects exhibit lower beliefs

In Experiment 2, subjects accessed the rank 1.847 times on average. As in Experiment 1, the frequency of rank-access increased over rounds. After the first round subjects accessed the rank 0.27 times on average and after the third round subjects accessed the rank 0.94 times on average. This behavior is driven by more subjects accessing the rank more often. After the first round 20.3% of subjects who had access to the rank choose to look at it and

Table 15: Treatment Effects in Experiment 2

	(1) Performance	(2) Performance	(3) Beliefs	(4) Beliefs
High Status/High Ability	2.321*	2.412*	3.765**	4.058***
	(1.362)	(1.299)	(1.719)	(1.549)
Group Size		-0.284		-0.556*
		(0.278)		(0.333)
Belief practice round		0.289		0.730***
		(0.198)		(0.272)
Fair Medal		1.791		0.937
		(1.220)		(1.490)
Locus of Control		0.035		0.204
		(0.468)		(0.530)
Female		-2.003		-2.641*
		(1.239)		(1.596)
Task performed before		2.479		2.104
		(1.654)		(1.455)
$ln(\delta)$	0.401	.048	0.658	0.206
	(0.288)	(0.227)	(0.348)	(0.296)
Log Likelihood	-478.157	-454.599	-509.192	-478.792
Observations	138	136	138	136

Note: This table presents marginal effects of negative binomial regressions of the model $y_i = \beta_0 + \beta_1 HighStatus + Controls'\Gamma + \epsilon_i$, with $\epsilon \sim poisson(\lambda)$. y_i is "Performance" in column (1) and column (2) and "Beliefs" in column (3) and column (4). "Performance" is the number of correctly solved matrices in the second part of Experiment 2, "Beliefs' is the number of correctly solved matrices the participant believed could achieve in the second part of Experiment 2, "High Status" is a dummy variable that captures whether the subject was assigned to the high status treatment. $ln(\delta)$ is the estimated dispersion from the mean. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

Table 16: Performance beliefs in Experiment 2

Ability	Low ability	High ability
$\text{Belief}_{r=1}$	7.112	8.045
	(0.445)	(0.533)
$\text{Belief}_{r=2}$	8.323	10.121
	(0.268)	(0.336)
$\text{Belief}_{r=3}$	6.323	7.560
	(0.236)	(0.277)
$\text{Belief}_{r=4}$	4.056	4.484
	(0.245)	(0.263)
$\text{Belief}_{r=5}$	3.281	3.575
	(0.269)	(0.309)
Aggregated Beliefs	29.098	33.787
	(1.009)	(1.197)

Note: This table presents the averages and standard deviations of beliefs in the second part of Experiment 2 by experimental treatment and round. Standard deviations are presented in parentheses.

this number increased to 54,23 % at the end of the experiment.

Across treatments I find no empirical evidence of a difference in rank access behavior with the used measures of rank-access. Specifically, rank access behavior was similar across treatments after the first round ($U = 0.101, p = 0.919$), after the third round ($U = 0.101, p = 0.919$), and over the five rounds experiment ($U = 0.227, p = 0.820$). A regression of the different measures of rank-access behavior on treatment dummies and relevant controls confirm this finding. The regression estimates are presented in Table 17. All in all, these results demonstrate that the lower frequency at which low ability subjects accessed the rank in Experiment 1 was due to their assignment to the High Status.

Finally, I estimate the statistical models presented in Table 15 with the difference being that the different measures of rank access are included in the model and interacted with the assignment to the treatment. Table 18, presents the regression estimates. I find that high ability subjects, who are also those belonging to high status, exhibit higher performance than low ability subjects when both groups do not access the rank. Also, as shown by the estimates of the third and fifth columns, accessing more often the rank can be detrimental to performance of high ability types after a number of rounds have elapsed. This supports the notion that accessing the rank is costly and decreases the available time to perform the task of high ability individuals. Such a decrease in performance does not appear in the data for low ability individuals. However, I find that they exhibit lower beliefs when they acquire more information about their ability relative to that of others. Illustrating that the rank informed low ability subjects who updated their beliefs downwards.

Table 17: Determinants of rank-access in Part 2 of Experiment 2

	(1) Times Rank Round 1	(2) Times Rank Round 1	(3) Times Rank Round 1-3	(4) Times Rank Round 1-3	(5) Times Rank All rounds	(6) Times Rank All rounds
High Ability	-0.054	-0.037	-0.000	-0.001	0.013	-0.133
	(0.156)	(0.157)	(0.380)	(0.413)	(0.579)	(0.641)
Group Size		0.063		0.679		0.837
		(0.199)		(0.614)		(0.922)
Fair Medal		0.015		0.131		0.440
		(0.145)		(0.429)		(0.710)
Locus of control		0.024		0.000		0.258
		(0.060)		(0.137)		(0.261)
Female		-0.344		-1.124*		-1.000
		(0.242)		(0.598)		(0.788)
Belief practice round		-0.020		0.023		0.278
		(0.038)		(0.132)		(0.271)
Task performed before		-4.742***		-0.913		-0.938
		(1.691)		(0.669)		(1.277)
$ln(\delta)$	0.221	-0.104	1.116***	0.995***	1.405***	1.246***
	(0.564)	(0.730)	(0.375)	(1.140)	(0.286)	(0.344)
Observations	59	58	59	58	59	58
Log Likelihood	-38.476	-33.547	-73.937	-68.092	-103.912	-98.252

Note: This table presents marginal effects of negative binomial regressions of the model $TimesRank_i = \beta_0 + \beta_1 LowAbility + \beta_2 HighStatus + \beta_3 LowAbility * HighStatus + Controls'\Gamma + \epsilon_i$, with $\epsilon \sim poisson(\lambda)$. "Times Rank" is the occurrence of rank-access by a subject in the second part of the experiment,"High Status" is a dummy variable that captures whether the subject was assigned to the high status treatment "Low Ability" is a dummy variable that captures whether the subject was classified as having low ability on the task. $ln(\delta)$ is the estimated dispersion from the mean. Standard errors presented in parentheses. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.

Table 18: Treatment effects and rank-access in Experiment 2

	(1) Performance	(2) Beliefs	(3) Performance	(4) Beliefs	(5) Performance	(6) Beliefs
High Status	2.648**	4.284***	3.349**	4.620***	3.303**	4.618***
	(1.326)	(1.595)	(1.343)	(1.632)	(1.343)	(1.668)
High Status * Time Rank	-2.419	-3.349	-3.639**	-3.009	-1.624**	-1.528
	(4.792)	(5.028)	(1.449)	(2.097)	(0.816)	(0.989)
Times Rank	0.513	-1.520	0.042	-1.102***	0.058	-0.649**
	(1.475)	(1.212)	(0.364)	(0.381)	(0.221)	(0.267)
Group Size	-0.268	-0.399	-0.059	-0.136	-0.094	-0.110
	(0.286)	(0.351)	(0.298)	(0.372)	(0.300)	(0.380)
Fair Medal	1.710	0.943	2.022*	1.233	1.953	1.216
	(1.235)	(1.498)	(1.219)	(1.466)	(1.232)	(1.468)
Locus of Control	0.038	0.206	0.042	0.234	0.043	0.307
	(0.470)	(0.522)	(0.461)	(0.484)	(0.467)	(0.485)
Female	-2.084*	-3.149*	-2.501**	-3.812**	-2.356*	-3.606**
	(1.214)	(1.624)	(1.241)	(1.637)	(1.243)	(1.599)
Belief practice round	0.299	0.740***	0.328	0.774***	0.327	0.797***
	(0.199)	(0.276)	(0.201)	(0.277)	(0.201)	(0.277)
Task Performed before	2.400	1.661	2.074	1.343	2.019	1.301
	(1.669)	(1.528)	(1.730)	(1.551)	(1.713)	(1.553)
$ln(\delta)$	0.041	0.181	-0.026	0.088	-0.002	0.090
	(0.224)	(0.292)	(0.224)	(0.305)	(0.225)	(0.304)
Observations	136	136	136	136	136	136
Log Likelihood	-454.369	-477.813	-452.008	-474.199	-452.760	-474.308

Note: This table presents marginal effects of negative binomial regressions of the model $TimesRank_i = \beta_0 + \beta_1 LowAbility + \beta_2 HighStatus + \beta_3 LowAbility * HighStatus + Controls'\Gamma + \epsilon_i$, with $\epsilon \sim poisson(\lambda)$. "Times Rank" is the occurrence of rank-access by a subject in the second part of Experiment 2,"High Status" is a dummy variable that captures whether the subject was assigned to the high status treatment "Low Ability" is a dummy variable that captures whether the subject was classified as having low ability on the task. $ln(\delta)$ is the estimated dispersion from the mean. Standard errors presented in parentheses. *** denotes significance at the 0.01 level, ** denotes significance at the 0.05 level, * denotes significance at the 0.1 level.