The Effect of Education-based Status Threat on Outgroup Attitudes Towards Lower Educated People

Sem Stegehuis

S3834972

Department of Psychology, University of Groningen

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Supervisor: (prof.) (dr(s).) Jochem van Noord

Second evaluator: (prof.) (dr(s).) Russell Spears

In collaboration with: Anna Henneke, Bente Postema, Esra Coban, Loic Dupas and Manon Hut.

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Abstract

Jackman (1994) demonstrated that in order to maintain the dominant position, the social group with the higher status will express warm and tolerant feelings toward the groups with the lower social status. This is called paternalism. The present study investigated if paternalism and corresponding outgroup attitudes are also applicable to education. In addition to this, we examined if negative attitudes towards the lower educated were moderated by social identification. The participants (N = 194) were mostly higher educated students and were randomly assigned to a control condition or one of the two manipulation conditions, which were intended to threaten the (education-based) status of the participant. After the manipulation (or control) they answered questions about how warm and tolerant they felt towards lower educated people. We hypothesized that threatening the status of the participant would elicit an increase in (paternalistic) warm feelings toward the lower educated. Furthermore, we expected that the effect of the manipulation will depend on the level of social identification. This study provided support for the assumption that a threat to the status of higher educated, can cause for warmer and more tolerant feelings towards their subordinates. The extent of identification with the higher educated had an effect on feelings toward lower educated, but it is not dependent on which group you are in. Future research could have more variation of age in the data, and should be done in a controlled environment.

Keywords: Meritocracy, paternalism, social identification, outgroup attitudes

The effect of education-based status threat on outgroup attitudes towards lower educated people

Michael Young (1958) once described a society that used education and intelligence as a justified reflection of social status and power. He called this 'meritocracy'. He predicted that this future society would have a fundamental social inequality, were social groups with a low status would be undervalued. A true meritocratic society would give anyone the opportunity to climb the social or economic ladder, but in reality this does not seem to be the case (Warikoo & Fuhr, 2013; Bourdieu & Passeron, 1977). Jackman (1994) demonstrated that in order to maintain the dominant position, the social group with the higher status will express warm and tolerant feelings toward the groups with the lower social status. This attitude does not threaten their dominant position and simultaneously creates an opportunity to appear friendly and just. The subordinate group feels good about the dominant group, and has less tendency to stand up to the higher status in society. In this way the inequality is retained and the ideology of meritocracy can be preserved. While the dominant group appears to be positive to their subordinates, actual outgroup attitudes towards the subordinate group are negative (Kuppens & Spears, 2018). Ellemers (2011) demonstrated that this might be caused by a strong group identification which can cause intergroup conflict. In this thesis, we will study the issue of paternalism and outgroup attitudes in the meritocratic system of education. Fiske and Markus (2012) found that education is a strong indicator for social class. Domina et al., 2017) stated that despite their egalitarian ethos, schools are social sorting machines that create categories that serve as the foundation of later life inequalities. These characteristics of the educational system are in line with a meritocratic system (Kluegel & Smith, 1986). In the current study, we aim to experimentally question the existence of meritocracy and investigate if what kind of impact that could have on the outgroup attitudes of the higher educated. The central question will be: Does threatening the status of higher educated by putting doubt on

the existence of a meritocracy affect outgroup attitudes towards the less educated? To further investigate the outgroup attitudes, we will also consider the influence of group identification on negative outgroup attitudes.

Meritocracy

The ideology of meritocracy is characterized by a social system were individuals get equal opportunities in the social- and economic system (Kluegel & Smith, 1986). The belief of individual merit has increased the past 30 years (Madeira et al., 2019). This could be the consequence of the 'merit-based rewarding system', which is an incentive-based system: the higher the individual merit, the higher the status. These principles mainly gained attention in the western world, among progressive societies (Madeira et al., 2019). One's social and economic status is therefore attributed to one's motivation and personal ability, rather than inherited wealth or status (Kluegel & Smith, 1986). Warikoo and Fuhr (2014) conducted a study where students were asked to comment on other applicants who failed to get into the university. They explained it by a lack of skill and hard work, while they awarded their own success to intelligence. Khan (2010) uses the term 'Democratic inequality' for this matter: differences of individual outcome are brought back to people's intellectual capacity. These will be used to mask the inequality that is being preserved. The students in the study of Warikoo and Fuhr (2014) believed that hard work and intelligence were more impactful factors to study at an elite high school than parental influence or heritage. Using this argument, people have a defensible reason to neglect inequalities and still have a high sense of accomplishment. We will try to question the reality of the meritocratic status of a higher educated person. Education is such a (meritocratic) system were 'democratic inequality' is carried out.

The importance of education can be demonstrated by the fact that a key indicator of national development is the level of education in a country (United Nations Development Programme, 2013). Furthermore, for the perceived social class, education level is a better indicator than money, beliefs, style of life and kind of family (Fiske & Markus, 2012). Attitudes and prejudice between social groups have been researched on a great deal of factors (e.g., race, gender, age, nationality, etc.) in social psychology (Aronson et al., 2013). Education has been left out for this matter, this might be because education is seen as legitimate. There is little research of attitudes of the higher educated towards lower educated. Considering this, it's relevant to further explore the subject of attitudes between educational status groups, in relation with meritocracy, paternalism and group identity. The educational system divides individuals into 'educational levels', these levels come with their own status and diplomas (Domina et al., 2017). High educated status is associated with more human capital and economic status than lower educated (Becker, 1994). Higher education is also associated with better health, an extended life span and a better well-being regardless of how this is measured (Martikainen, 2012**;** Grusky & DiPrete, 1990**).** Domina et al (2017) stated that despite their egalitarian ethos, schools are social sorting machines that create categories that serve as the foundation of later life inequalities. These characteristics of the educational system are in line with a meritocratic system (Kluegel & Smith, 1986). A true meritocratic society would give anyone the opportunity to climb the social or economic ladder via social mobility, but in reality this does not seem to be the case (Warikoo & Fuhr, 2013; Bourdieu & Passeron, 1977).

Social mobility

Social mobility is the ability to move from one social or economic status to another. In spite of this, the actual possibility to change your social status in the current Western society has been questioned in the literature. The meritocratic view of individual responsibility and

social mobility is used to legitimize the inequalities in society (Warikoo & Fuhr, 2013; Bourdieu & Passeron, 1977). To illustrate the inequality, we should consider the social mobility in this educational system. Shiner and Modood (2002) concluded that family background played a significant role in the success of attending an elite university. Also, the access to application for elite universities and information about higher education is mediated by social class (Archer et al., 2003). Other research found a strong correlation between academic achievement and social background. Logically, you would think that this is due to the fact that a certain social background would give a person a level of intelligence. On the contrary, research conducted by OECD (2013) found that children across different social background and educational class shared a similar cognitive ability. So you can debate how suitable it is to use educational status as social class system, while the level of intelligence appears to be equal across these classes. So if intelligence is not the reason for social division in educational status, what is?

Bourdieu (1984) found that the preference in lifestyle is heavily depended on the culture someone is raised in. Bourdieu refers to this as ‘cultural capital’, and states that on educational level this varies much across higher and lower educational status. In fact, it turns out that even specific behaviour such as hobby preference and the way people act can be brought back to their social and/or educational background. Bourdieu and Passeron (1977) argued that educational institutes are not neutral, but biased to the dominant and higher status culture. Children born into these dominant status families already possess cues that are in line with their ‘cultural capital’. Children born into a lower educational class can try to achieve some specific behaviour that fits in the cultural capital of the upper class, but they will never have a natural similarity of the ‘cultural capital’ of the higher status group. Because of this they are not included in that higher status group (Bourdieu & Passeron, 1977). From this research you can conclude that the possibility of social mobility is questionable, even at the

age when children enter school. In a society that is truly meritocratic, every person should be able to climb up the social ladder via social mobility. Such a social system is characterized by the permeability of the boundaries between social status levels and people will identify themselves as individuals (Tajfel & Turner, 1997). In a society where the boundaries between social status groups are not permeable, individuals will identify themselves with a social group (Ellemers, 1993). This is exactly what Bourdieu and Passeron (1977) demonstrated with their research on 'cultural capital'. Even if you try to be part of a different social group that you were raised in, you will never be equal to them because they have formed a group identity that you cannot naturally be similar to. If the boundaries in societal groups were permeable, this would be different. Such a group identity would not be present, and the ability to belong to a different status in society would be easier because of not being excluded from a dominant group. But this is not the only way that people of lower status are excluded from the status-quo.

Van Noord (2021) demonstrated that feelings of misrecognition increased as one's education got lower. This feeling of being left out is found to be related to political alienation. This means that a person is not satisfied with democracy, or does not think politics are trustworthy. Political alienation is even related to non-participating in the political vote process (van Noord, 2021). A consequence of this might be that people with a lower education are being excluded from participating in society. Spruyt et al. (2018) found that lower educated people might exclude themselves because of the implicit authority of education in Western society and the political role education plays in solutions for societal issues. In addition to this, the lower educated group self-exclude from politics because they thought they were not competent or smart enough to participate. This is relevant to the current research because we want to give a full illustration to what a meritocratic ideology can mean for society. Political alienation and self-exclusion are convenient for the dominant group in

society, because less conflict is experienced. This contributes to the maintenance of the status of the dominant group, as is explained in the theory of paternalism.

Paternalism

Jackman (1994) described paternalism as: warm and tolerant feelings toward a lower status group to maintain the dominant higher status position in society. This positive attitude towards the lower status group appears to be thoughtful but this behaviour is actually out of self-interest (Jackman & Muha, 1984). The outgroup attitude does not change anything about the inequality and gives the higher status group a chance to not feel bad about the unequal situation because of their meritocratic belief in society. It gives the dominant group the opportunity to appear friendly and just, without risking their dominant position in society. The subordinates feel good about the dominant group, and they have less tendency to stand up to the higher status in society. Bourdieu and Passeron (1990) argued that higher status groups lay emphasis on the importance of education to justify their high status and the inequality in the educational system. Because of this 'legitimacy' that is created by the higher educated themselves, the higher educated are seen as 'better' in society. Stubager (2013) found that lower educated see the intergroup conflict with higher educated as more important in comparison with the higher educated. This can be a paternalistic strategy to avoid conflict by understating the importance of intergroup conflict (Jackman, 1994). So when the higher educated are seen as 'better', they can express negative feelings towards the lower educated because their status is not at stake. But the feelings toward the lower educated will not be so negative that a conflict will arise, because that can threaten the status-quo of their position in society (Kuppens et al., 2018). However, when the higher educated are confronted with issues like redistribution, the higher educated might go into conflict to protect their dominant position (Jackman, 1994). Nevertheless, the dominant group will withstand the pull towards political/societal change or intergroup conflict. Jackman (1994) stated that: "Confined by their

unwillingness either to grant concessions or to engage in flagrant conflict, the members of dominant groups find refuge in the haven of paternalism" (p. 294).

The current study is set out to answer the following research question: Does threatening the status of higher educated by putting doubt on the existence of a meritocracy affect outgroup attitudes towards the less educated? In the manipulation we will try to question the reality of meritocracy, we aim to threaten the status of the higher educated in this manner. After we show them a fictional article that will doubt meritocracy, we will study the change of the outgroup attitude towards the lower educated.

Hypothesis 1. Following the theory of paternalism and the general belief in meritocracy, the feelings towards the less educated will be warmer for the manipulation group in comparison with the control group (H1).

To show a pattern that is in line with the theory of paternalism, we will compare the opinions on redistribution between the different manipulations.

Hypothesis 2. Considering Jackman's (1994) findings on higher educated people withstanding the pull towards political/societal change and avoiding intergroup conflict to protect their dominant position, we expect to see a pattern of paternalism. We expect that there will be no significant difference between the manipulations in the 'redistribution' variable (H2). We expect that there will be a significant difference in the different conditions for the variable 'attitude towards lower educated' (H1).

The Stereotype Content Model shows that social groups are judged by their status via stereotypes. More specifically, the status is mainly judged on two dimensions: warmth and competence (Fiske et al., 2019). Social groups with a higher status are often seen as more competent groups, and lower status groups are associated with more warmth and less

competence. The perceived threat level is an indicator of a person's place on the warmth spectrum (Fiske et al., 2019). Henceforth, we will use warmth as an indicator for attitude towards the lower educated and will use status threat as manipulation.

A person's status can be jeopardized when a lower status group (out-group) threatens to acquire equal resources and advantages as the in-group (Tajfel & Turner, 1986). The manner in which group members respond to these status threats can be explained by their in-group identification. According to the social identity theory, people will identify strongly with a group (Tajfel & Turner, 1979). Members with a higher identification with the group have the tendency to defend their group membership by minimizing external threats. It is found that the nature of the threat is dependent on the social environment in which it is experienced. The way in which people respond to this threat is heavily dependent on the level of social identification with the in-group. (Branscombe, Ellemers, Spears, & Doosje, 1999). Kuppens et al. (2018) also found that higher educated people show more education intergroup-based bias, which means that they value lower education status more negatively than higher education status. They demonstrated that this is only the case if people see education status as an important part of their identity. While the dominant group appears to be positive to their subordinates, actual outgroup attitudes towards the subordinate group are negative (Kuppens & Spears, 2018). Ellemers (2011) demonstrated that intergroup conflict is caused by strong feelings of identification with a group and an aim to positive group distinction. These theories lead us to the first sub-question of the research: does a stronger identification with higher educational status strengthen the effect of the negative outgroup attitude towards the lower educational status when status is being threatened? In order to investigate this we formulated 2 hypothesis:

Hypothesis 3.1 Considering the findings of Branscombe et. al. (1999) that the way in which people respond to a status threat is heavily dependent on the level of social identification with the in-group, we expect that a the effect of the manipulation will significantly depend on the extent of social identification with one's in-group (H3.1).

Hypothesis 3.2 Given the theory of Kuppens et al. (2018) about intergroup-based bias, we hypothesize that negative attitudes (or less warm feelings) towards the lower educated depend on the level of identification with the higher educated. We expect that a higher level of identification will be associated with a higher level of negative group attitudes (H3.2).

Method

Design

The research was an experimental design with a between group experiment, which was conducted via survey research. The meritocracy manipulation was the independent variable. This variable had 3 levels: the control condition, the manipulation 'hard work and perseverance' and the manipulation 'doubting relevance of talent'. The changes in outgroup attitudes were the dependent variable. So there is one independent variable with three levels: control and a manipulation variable with two different levels. To analyze the data a one-way ANOVA in JASP 0.13.1.0 (JASP Team, 2021) was used. To analyze the data we used a one-way ANOVA in Jasp.

Participants

The desired sample size was a minimum of 180 people, a=0.05, Power=0.80, groups=3, f^2=0.5. This was by the program G-power was used for this calculation (Faul, 2007). The effect size (f^2=0.5) was used because that indicates that a moderate to large effect in group difference can be found in the data. This study's sample consisted of 260 students or former students from the University of Groningen. To remove participants who did not meet the requirements of the study or did not fill in the questionnaire appropriately, we implemented filters to exclude cases (e.g. excluding: progress < 100). Totally 66 participants were excluded from this sample because of two reasons: the participant did not finish the survey (40) participants or the participant did not respond appropriately to the attention check question (26 participants). So the data set that was used consisted of 194 participants, this satisfied the minimum of 180 people that were needed for statistical power. Some items had a smaller size because there were options to not answer the question (missing values). Female participants made up 66,5% of the sample and 31,4% of the participants were male. Also 2,1% of the participants identified as 'other'. 94,8% of the participants were older than 18

years, and younger than 30. Only 5,2% of the people that filled in the survey were older than 30 years of age. From all the participants 47,6% had a Dutch nationality, 38,3% had a German nationality and 14,1% answered the question with ‘other nationality’.

The thesis students recruited fellow students and former students by contacting these students via their own network (via WhatsApp, Instagram, Facebook and Twitter) (124 participants were recruited via this manner). The students announced the thesis research questionnaire and afterwards sent the link to the survey so that the fellow students could fill it out by themselves. Furthermore, the SONA student pool has been used for participant recruitment, which consists of first-year Psychology students studying at the University of Groningen (70 participants).

Materials

For our experimental design we utilized many questions out of earlier research, drafted from sources which can be found in the references section (Leach, 2008; ISSP, 2019; ESS, 2021; ANES,2021). The questionnaire was displayed on any digital platform chosen by the participant, and presented accordingly by the Qualtrics platform (hosted at: https://rug.eu.qualtrics.com/). The questionnaire was intended to measure the outgroup attitudes of a higher educated population towards a less educated population. The survey contained 26 questions (of relevance to the research, excluding informed consent), and was intended to take about 10 minutes to complete on average. In reality the average of the duration was 864 seconds, which is approximately 14 minutes. This was the mean after removing 4 outliers, which varied from 17 hours to 144 hours. The rest of the data of these participants is included in the results. Bipolar 5-point Likert scales as well as rating scales (scores 0-100) were used. A full set of the survey was added to the appendix (appendix A) .

Procedure

Participants, after they gave demographic information, completed a questionnaire about political attitudes, family and class background, identification, and general attitudes. The questionnaire included a manipulation paragraph categorizing participants in one of the three conditions of the experiment. Participants in the first experimental group (manipulation) were presented with a fictional scientific article about current research findings regarding the doubting the relevance of hard work and perseverance. The intent was to convince the first experimental group of the non-meritocratic nature of an educational system. The participants in the second experimental group were presented with a fictional scientific article about current research findings regarding doubting the relevance of talent. After reading the article participants got questions about their attitudes towards less educated people and questions that measure paternalistic views. The control group was presented with an article that is in line with meritocratic beliefs. Participants were randomly assigned to one of the three groups, with all conditions being evenly distributed between all respondents. The control group consisted of 62 participants, the first manipulation group (hard work and perseverance) consisted of 64 participants and the second manipulation group (doubting the relevance of talent) out of 68 participants.

Measures

To get the specific data on the participants, we used descriptive measures on each demographic item in the questionnaire. Some questions were divided into questions that measured the same variable. These questions needed to be combined into one score for each participant, so that we could easily compare this with other variables. To combine these we made a new variable (e.g. ‘Attitudes towards lower educated All’), which we calculated by adding all questions and dividing those by the amount of questions (the mean). We also had to

recode certain variables to the same scale. To measure assumptions we did the tests of normality and equal variance, these are presented in the result section.

Outgroup attitude variable

This variable measured the attitude of the participant (higher educated) towards lower educated people. The data of this variable was used to determine if there would be a difference in attitude between the control condition and the manipulation. The question consisted of 3 items (e.g. "Many of the problems that we have to deal with in this country are due to the influence of the less educated."). Answers were rated by 5-point Likert scale where a high score means a high agreeableness (1=strongly disagree, 5=strongly agree) (appendix A). Cronbach's Alfa was 0.79 for this variable, which indicates that the internal consistency is reliable (appendix B).

Thermometer variable

This variable is used in combination with the redistribution variable, to see if there is a pattern that is consistent with paternalism. It was validated by the American National Election studies (ANES, 2021). It measures the feelings towards 6 different groups with a certain status (e.g. higher educated). But for the measures on paternalism, the item 'feelings toward less educated people' is relevant. The thermometer is measured on a 0 to 100 scale, where 100 is 'like a great deal' and 0 is 'dislike a great deal' (appendix A). To compare the thermometer variable (measured on a scale of 0 to 100) with the redistribution variable (measured on a scale of 1 to 5, we recoded the thermometer variable to a scale of 1 to 5. Cronbach's Alfa was 0.782 for this variable, which indicates that the internal consistency is reliable (appendix B).

Redistribution variable

This variable measures to what extent the participant is willing to improve the inequalities that lower educated people experience, by enabling financial support or prioritizing their chance for academic achievement. An example item is 'To what extent do you agree with the following statement: I am willing to pay more taxes to enable equal pay for people of all levels of education'. The answer could be given on a 5-point Liker scale (1=strongly disagree, 5=strongly agree). A high score would mean a high agreeableness on the presented statements about redistribution. Cronbach's Alfa was 0.731 for this variable, which indicates that the internal consistency is reliable (appendix B).

Social (educational) identification variable

This variable should measure to what extent the participant identifies with his/her educational in-group. These items and scale were used in earlier research and have been validated (Leach, 2008). An example question is: " To what extent do you agree with the following statement: I feel a bond with people who have a similar level of education to my own". It was measured on a 5-point Liker scale (1=strongly disagree, 5=strongly agree). A high score means a high level of agreeableness of the statements that were presented. To investigate if social identification moderates outgroup attitudes towards lower educated, we centralized the social identification variable around the sample mean. Cronbach's Alfa was 0.772 for this variable, which indicates that the internal consistency is reliable (appendix B).

Meritocratic beliefs variable

Cronbach's Alfa was 0.471 for this variable, which indicates that the internal consistency is unreliable (appendix B). This means that this question does not measure the underlying construct in a precise way. Because this variable is not internally consistent, we did not further investigate it's effects.

Results

Assumptions checks

The assumptions for a one-way ANOVA consist of: normality, equal variance and independent measures. Table 1 shows a measure for normality. In the table you can see that the variable ‘redistribution’ is normal for every group (because p>0.05). For ‘attitudes towards lower educated people’ this is not the case. This is not an issue, because the one-way ANOVA is robust against violations of the normality assumption, as long as the sample size is large enough. Social identity has a normal distribution for the control group and the manipulation ‘hard work and perseverance’.

The second assumption is the equality of variance. In table 2 this is measured by the ‘Levine statistic’. The ‘redistribution’ variable has equal variance, F(2,190)=0,871, p= 0,420. Also the ‘social identity’ variable has equal variance, F(2,191)=1,482, p=0,230. Finally, the variable ‘Attitudes towards lower educated people’ has equal variance, F(2,190)=1,067, p=0,346.

The third assumption is the independence of measures. This assumption has been met because we used a random design in our research.

Table 1

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Group	Statistic	df	Sig.	Statistic	df	Sig.
Social Identity	,00	,092	62	,200*	,985	62	,646
	1,00	,099	64	,200*	,981	64	,431
	2,00	,133	68	,005	,942	68	,003
Redistribution variable	,00	,096	61	,200*	,980	61	,421
	1,00	,097	64	,200*	,969	64	,102
	2,00	,108	68	,047	,976	68	,220
Attitudes towards lower educated people	,00	,137	61	,006	,941	61	,005
	1,00	,111	64	,048	,946	64	,007
	2,00	,112	68	,035	,950	68	,008

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 2

Test of Homogeneity of Variances (Levene's test)

		Levene Statistic	df1	df2	Sig.
Redistribution variable	Based on Mean	,871	2	190	,420
Social identity	Based on Mean	1,482	2	191	,230
Attitudes towards lower educated people	Based on Mean	1,067	2	190	,346

Attitudes towards the lower educated

To investigate if the manipulation (where meritocratic assumptions are doubted to threaten the status of the higher educated) elicits a warmer feeling towards lower educated, we compared the manipulation with the control group. We did this by comparing the means of conditions in the variable 'outgroup attitude toward lower educated'. We expected that the manipulation and control condition significantly differ from each other (H1). To test the significance of the difference in means, a one-way between groups ANOVA was used. To look at the direction of the effect we used descriptive tables. We expected that the mean of the manipulation is going to be lower than the control condition (H1), that would indicate that the direction of the effect is as hypothesized.

An one-way ANOVA was used to compare the effect of the attitudes towards lower educated people in two different conditions, the manipulation 'hard work and perseverance' (1,00) and the control group (0,00) (Table 3). There was a significant effect at a p value< 0.05 between these two conditions, $F(1, 123)= 5,257$, $P=0.024$, $\eta 2=0.038$. The means in Table 4 show that, for attitudes towards lower educated people, the mean of the manipulation of 'hard work and perseverance' (1,00) ($M=2,49$, $SD=1,04$) is lower than the mean of the control group (0,00) ($M=2,90$, $SD=0.93$). This is consistent with the direction of the effect that was hypothesized (H1) and indicates that the manipulation elicits warmer feeling towards the lower educated after their status was threatened.

For the manipulation 'doubting relevance of talent' (2,00) and the control group (0,00), there was no significant effect at a p value< 0.05 between these two conditions, $F(1, 128)= 3,369$, $P=0.069$, $\eta 2=0.024$ (table 5). The results show that the means were different in the two groups, but it was not big enough for significance ($p<0.05$). Although the means of the control condition and the manipulation show a similar direction of effect, it is not significant and therefore not in line with the hypothesis (H1).

These results are in line with hypothesis (H1) for the condition ‘hard work and perseverance’ (1,00) because of the significant result. The direction of the effect is in line with our hypothesis (H1) because we expected that the manipulation would cause warmer/more tolerant feelings toward lower educated people. The condition ‘doubting relevance of talent’ (2,00) is not significant, so not in line with hypothesis 1 (H1).

Table 3

One-way ANOVA of manipulation of ‘hard work and perseverance’ (1,00) and the control group (0,00)

		Sum of Squares	df	Mean Square	F	Sig.
Redistribution variable	Between Groups	4,175	1	4,175	6,351	,013
	Within Groups	80,858	123	,657		
	Total	85,034	124			
Attitudes towards lower educated people	Between Groups	5,170	1	5,170	5,257	,024
	Within Groups	120,964	123	,983		
	Total	126,133	124			

Table 4

Descriptives of manipulation (1,00) and the control group (0,00)

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Redistribution variable	,00	61	3,0055	,80477	,10304	2,7994	3,2116	1,00	4,75
	1,00	64	3,3711	,81649	,10206	3,1671	3,5750	1,50	4,75
	Total	125	3,1927	,82810	,07407	3,0461	3,3393	1,00	4,75
Attitudes towards lower educated people	,00	61	2,9016	,93163	,11928	2,6630	3,1402	1,00	4,67
	1,00	64	2,4948	1,04568	,13071	2,2336	2,7560	1,00	5,00
	Total	125	2,6933	1,00857	,09021	2,5148	2,8719	1,00	5,00

Table 5

One-way ANOVA of manipulation (2,00) and the control group (0,00)

		Sum of Squares	df	Mean Square	F	Sig.
Redistribution variable	Between Groups	,058	1	,058	,073	,787
	Within Groups	100,016	127	,788		
	Total	100,074	128			
Attitudes towards lower educated people	Between Groups	3,462	1	3,462	3,369	,069
	Within Groups	130,487	127	1,027		
	Total	133,948	128			

Table 6

Descriptives of manipulation (2,00) and the control group (0,00)

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Redistribution variable	,00	61	3,0055	,80477	,10304	2,7994	3,2116	1,00	4,75
	2,00	68	3,0478	,95540	,11586	2,8165	3,2791	1,00	5,00
	Total	129	3,0278	,88421	,07785	2,8737	3,1818	1,00	5,00
Attitudes towards lower educated people	,00	61	2,9016	,93163	,11928	2,6630	3,1402	1,00	4,67
	2,00	68	2,5735	1,08180	,13119	2,3117	2,8354	1,00	5,00
	Total	129	2,7287	1,02297	,09007	2,5505	2,9069	1,00	5,00

Redistribution and feelings toward lower educated

To prove that the effect is because of paternalism, we compared opinions of redistribution with the attitude toward lower educated. To test if there was a significant difference between the condition means, we used an one-way ANOVA. In an attempt to show a pattern of paternalism, we will compare the redistribution variable in the different conditions. We hypothesized that there will be no significant difference between the manipulations in the ‘redistribution’ variable (H2). We also expect that there will be a significant difference in the different conditions for the variable ‘attitude towards lower educated’, which has been confirmed in the previous paragraph of hypothesis 1 (H1).

A one-way between groups ANOVA was used to compare the views of redistribution in two different conditions, the manipulation ‘hard work and perseverance’ and the control group (Table 3). There was a significant effect at a p value< 0.05 between these two conditions, $F(1, 123)= 6,351$, $P=0.013$, $\eta 2=0.047$. The corresponding means for these

conditions (Table 4) show that the mean of the control group (M=3,00, SD=0.80) is lower than the manipulation ‘hard work and perseverance’ (M=3,37, SD=0.81) in this case. That indicates that the manipulation group showed significantly more compliance to redistribution issues. These results are not in line with the hypothesis (H2) about the redistribution variable. We expected that the manipulations would not differ significantly in the redistribution variable, while they did differ significantly in the ‘attitudes towards lower educated’ variable. Because this is not the case for the first manipulation, we cannot attribute the effect to paternalistic patterns.

The second manipulation ‘doubting relevance of talent’ gave a non-significant result with the one-way between groups ANOVA , $F(1, 127)$, $P=0.787$, $\eta 2=0.00$ (Table 5). Even though this is in line with the hypothesis (H2), this does not fit the pattern of paternalism because we found no significant difference in ‘attitudes toward lower educated’ variable when we compared it with the control group (in the previous section). Because of this we cannot show a pattern of paternalism in this comparison for the manipulation ‘doubting the relevance of talent’, and this variable was not further explored.

Social identification

To investigate the interaction of social identification on the outgroup attitudes toward lower educated people, we computed several correlation matrices for main effects. For the interaction effect we computed an Univariate analysis with ‘Group’ (condition) and ‘Social identity’. We expected that the effect of the manipulation will significantly depend on the extent of social identification (H3.1). Furthermore, we hypothesised that a stronger identification with the higher educated will increase negative attitudes towards the lower educational status (H3.2).

The interaction of social identity and the manipulation

The interaction effect of 'social identity * group' on 'attitudes towards lower educated' in Table 7 is not significant, F(2,193)=0,305, p= 0.737, η2=0,003. Also the output in Table 8 shows an insignificant interaction of 'social identity * group' on the thermometer variable, F(2,190)=1,871, p= 0.157, η2=0,020. These results indicate that the effect of the manipulation is not dependent on the level of social identity. This is not in line with the hypothesis that expected that the effect of the manipulation will significantly depend on the extent of social identification with one's in-group (H3.1).

Table 7
Univariate analysis with Social identity and Group on Outgroup attitudes toward lower educated
Tests of Between-Subjects Effects

Dependent Variable: Attitudes towards lower educated people

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	13,665[a]	5	2,733	2,669	,023	,067
Intercept	11,610	1	11,610	11,337	,001	,057
GROUP	,384	2	,192	,188	,829	,002
Social identity	7,546	1	7,546	7,368	,007	,038
GROUP * Social identity	,626	2	,313	,305	,737	,003
Error	191,511	187	1,024			
Total	1561,667	193				
Corrected Total	205,176	192				

a. R Squared = ,067 (Adjusted R Squared = ,042)

Table 8

Tests of Between-Subjects Effects

Dependent Variable: Thermometer variable

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3817,265[a]	5	763,453	1,814	,112	,047
Intercept	31790,021	1	31790,021	75,533	,000	,291
GROUP	1755,082	2	877,541	2,085	,127	,022
Social identity	2688,578	1	2688,578	6,388	,012	,034
GROUP * Social identity	1574,849	2	787,425	1,871	,157	,020
Error	77441,098	184	420,876			
Total	661411,000	190				
Corrected Total	81258,363	189				

a. R Squared = ,047 (Adjusted R Squared = ,021)

The main effect of Social identity on attitudes toward lower educated

In Table 7 the results of a Univariate analysis are displayed with social identity as a covariate. The social identity variable had a significant effect on the variable ‘attitudes toward lower educated people’, $F(1,193)=7,36$, $p= 0.007$, $\eta 2=0,038$. This result implies that social identity has a main effect on negative outgroup attitudes. The small Eta-squared does indicate that it has a significant effect on a small part of the variation. Social identity also had a significant main effect on the thermometer scale, $F(1,193)=6,388$, $p= 0.012$, $\eta 2=0,034$ (Table 8). These findings are both in line with the hypothesis that a higher level of identification is associated with a higher level of negative group attitudes.

To investigate the strength and direction of the main effect, several correlation matrices were computed. Table 9 presents the significant correlation between the variables 'attitude towards lower educated people' and 'social identity', r(190)= 0.194, p=0.007. The correlation is positive, that means if social identification with your in-group is higher, the negative attitude towards lower educated people increases as well. The effect is in line with hypotheses (H3.1): a stronger identification with the higher educated will increase negative attitudes towards the lower educational status group. Looking at the differences in conditions, it is remarkable to see that there is a difference in correlation. The control group in Table 10 has a moderate correlation (r=0.29, p=0.026), whereas the manipulation 'hard work and perseverance' in Table 11 shows a much weaker correlation and is not significant with a<0.05 (r=0,18, p=0.15) (Henry, 1977). Also a remarkable finding is that this is also the case for results in the 'thermometer variable' correlations shown in Table 12 and 13. The control condition had a moderate negative correlation and was significant, r(60)= -0,301 p=0.019. The direction of the effect is in line because a lower score on the thermometer scale is associated with less warm feelings. In contrast to the control condition, the manipulation 'hard work and perseverance' had a weak correlation and was insignificant, r(64)= -0,229 p=0,069. This does not indicate that the conditions and social identity significantly interact with each other, it only shows the variables vary together in a linear fashion. This could still be an aftermath of the manipulation that showed less negative attitudes toward lower educated. It could also be that social identity would play an less important role when one's status is threatened, but not enough for a significant interaction effect. These results are in line with the hypothesis (H3.2) because there is a significant main effect for social identity and attitudes towards lower educated. The direction of the effect is also as hypothesized.

Table 9

Correlation of social identity and attitudes toward lower educated (all conditions)

		Social identity	Attitudes towards lower educated people
Social identity	Pearson Correlation	1	,194**
	Sig. (2-tailed)		,007
	Sum of Squares and Cross-products	62,890	22,004
	Covariance	,326	,115
	N	194	193
Attitudes towards lower educated people	Pearson Correlation	,194**	1
	Sig. (2-tailed)	,007	
	Sum of Squares and Cross-products	22,004	205,176
	Covariance	,115	1,069
	N	193	193

Table 10

Correlation of social identity and attitudes toward the lower educated (control condition)

		Social Identity	Attitudes towards lower educated people
Social Identity	Pearson Correlation	1	,285*
	Sig. (2-tailed)		,026
	N	62	61
Attitudes towards lower educated people	Pearson Correlation	,285*	1
	Sig. (2-tailed)	,026	
	N	61	61

Table 11

Correlation of social identity and attitudes toward the lower educated (hard work and perseverance)

		Social Identity	Attitudes towards lower educated people
Social Identity	Pearson Correlation	1	,180
	Sig. (2-tailed)		,154
	N	64	64
Attitudes towards lower educated people	Pearson Correlation	,180	1
	Sig. (2-tailed)	,154	
	N	64	64

Table 12

Correlation between the thermometer and social identity (control group)

		Thermometer	Social Identity
Thermometer	Pearson Correlation	1	-,301*
	Sig. (2-tailed)		,019
	N	60	60
Social Identity	Pearson Correlation	-,301*	1
	Sig. (2-tailed)	,019	
	N	60	62

*. Correlation is significant at the 0.05 level (2-tailed).

Table 13

Correlation between the thermometer and social identity (hard work and perseverance)

		Thermometer	Social Identity
Thermometer	Pearson Correlation	1	-,229
	Sig. (2-tailed)		,069
	N	64	64
Social Identity	Pearson Correlation	-,229	1
	Sig. (2-tailed)	,069	
	N	64	64

Discussion

In this study, we investigated what effect a status threat for the higher educated had for the feelings toward the subordinate group (lower educated). Following the theory of paternalism of Jackman (1994), we expected that the feelings toward the lower educated would be warmer for the manipulation who got a status threat by doubting meritocratic beliefs (H1). To prove that the effect is because of paternalism, we compared opinions of redistribution in the different conditions with the attitudes toward lower educated. We hypothesized that conditions would not differ significantly in the redistribution variable (H2), while the conditions differ significantly in the attitudes towards lower educated variable. In addition to this, we investigated if negative outgroup attitudes would be depended on the strength of social identification, and if this had an effect on the manipulation. We expect that the manipulation will depend significantly on the effect of the level of social identification (H3.1). Also, following Kuppens et al. (2018) theory about intergroup-based bias, we hypothesize that a stronger identification with the higher educated will increase negative attitudes towards the lower educational status (H3.2).

Significant results have been found for hypotheses 1 (H1): the feelings towards the less educated will be warmer for the manipulation group. The manipulation of ‘hard work and perseverance’ had a significant difference with the control group. The direction of the effect has also proven to be like we hypothesized. The manipulation ‘doubting the relevance of talent’ did not show a similar significant effect. The manipulation of ‘hard work and perseverance’ turned out to be significantly different from the control group for the ‘redistribution’ variable. The manipulation (hard work and perseverance) showed significantly more compliance to redistribution issues. This is not consistent with our hypothesis (H2) because we expected that there would be no significant difference between conditions. The manipulation of ‘doubting the relevance of talent’ was not significant. Even

though this is what we expected for this variable, it does not support the pattern of paternalism as hypothesized (H2). This is because there was no significant difference in attitudes towards lower educated to begin with. The results for the social identification variable imply that social identity does have a significant effect on attitudes toward lower educated, but it is not dependent on which group you are in. Insignificant values were found for the interaction between social identity and condition, but a significant main effect for social identity. The correlation for the main effect gave more insight: a stronger identification with the higher educated will increase negative attitudes towards the lower educated, which is consistent with the hypothesis (H3.2). But when the results are split into the conditions it shows a stronger correlation for the control group, and a weaker and insignificant correlation for the manipulation. This goes for both variables that were used to investigate feelings toward lower educated. This could still be an aftermath of the manipulation that showed less negative attitudes toward lower educated. It also could be that social identity would play an less important role when one's status is threatened, but not enough for a significant interaction effect.

Limitation and future direction

A limitation in our research is that our participants mainly consisted of students (95% of the participants had an age between 18 and 30 years old). They are officially not higher educated and may not be representative for the whole population of the 'higher educated'. The extent to which students socially identify with a higher educated status is also a contentious issue. Considering these limitations, external validity could be improved by future research by having more variation in age in the sample. The variable 'meritocratic beliefs' turned out to be unreliable considering the internal validity. Because of this reason we did not include this variable in our analysis. In future research a study similar to this should be conducted in a controlled environment. A fair amount of participants finished the survey before 10 minutes,

while other participants said that it took 20 minutes of their time. If people skipped through the survey and did not read attentively, the results of the manipulation might be weakened. In a controlled condition you can check how they complete the survey, or maybe even give them separate tasks (e.g. a separate first reading task). The manipulation of 'hard work and perseverance' showed significant results in the analysis and manipulated in the way it was intended, but in the second manipulation 'doubting the relevance of talent' this was not the case. This could be due to the second manipulation (doubting the relevance of talent) not working properly, or the manipulation is not a proper way to threaten the status of higher educated. It might be due to the manipulation of 'doubting the relevance of talent' not being relevant to every participant in the sample, whereas the manipulation of 'hard work and perseverance' is relevant to most people. The people that have talent need to work hard to get to reach a high academic achievement. In spite of this, the people that work very hard for their academic achievement do not necessarily possess a high level of natural ability (talent). Furthermore, the mechanism behind both manipulations can be questioned. Is it an actual threat to someone's status? Or do people act in line with the information that was presented in the condition they were assigned to. Future research should focus on 'hard work and perseverance' as a status threat, or should investigate how to make the 'doubting the existence of talent' a proper manipulation. In addition to this, considering that the redistribution variable has not been validated, future research should aim for a validated and more practical approach of measuring a pattern of paternalism.

Theoretical and practical implications

The results of the current study are mostly in line with the previous research of Jackman (1994), except that a pattern of paternalism was not present. Nadler (2009) conducted a research on defensive helping, which is a term for helping an outgroup that poses a threat in purpose to defuse the threat. This term and study is consistent with the theory of

paternalism and agrees with using status threat as manipulation. The only thing what is different with the theory of paternalism, this study found that defensive helping increased when an identity-relevant dimension of someone is being threatened (like in the redistribution variable). So that would mean one can expect to see a difference outcome in conditions for the attitude towards helping the lower educated with getting equal opportunity. This can explain the fact that we found a significant difference in the redistribution variable for the control group and the 'hard work and perseverance' variable. The mean of the manipulation 'hard work and perseverance' was significantly higher than the control group, this might have been the consequence of defensive help after their status was being threatened.

The results of the 'social identity' variable are in line with the research on intergroup-based bias of Kuppens et al. (2018) because more negative attitudes were found for people who had a stronger identification with their in-group. Branscombe et al. (1999) found that the nature of the threat is dependent on the social environment in which it is experienced. This is important to take into a count when the subject of social identity in relation to status threat is further explored. Ellemers (2005) stated that in order to understand the complexity of the social identity theory, researchers must incorporate moderated relations instead or only looking at main effects. Even though we have not found a significant interaction, this still contributes to a better understanding of the theoretical framework of social identity. Uncertainties about the paternalism pattern and the effect of social identity, can be further investigated in future research. Further investigation on these subjects could contribute to the literature that will better inequalities in society, such as classism and credentialism. The current results contribute to a better understanding of the meritocratic way of behaving in society. It raises questions like: are we able to improve the human errors of attitudes that are formed because of status threat or outgroup perceptions? Is a meritocratic society the logical outcome of social interaction between an enormous amount of people, or can we improve or

evolve as human beings that can create a society without status-based boundaries? Mijs (2015) suggested that the meritocracy ideal is an unfulfillable promise that meritocratic policies in education threaten principles of justice, need and equality.

Conclusion

Taken together, this study provided support for the assumption that doubting (threatening) the status of higher educated, can cause warmer and more tolerant feelings towards their subordinates (the lower educated). We could not conclude out of our data that this was an effect of paternalism. We gave an alternative explanation for the effect that was found: defensive helping. A dominant group will uses defensive helping to defuse a threat to their dominant position. The extent of identification with the higher educated, was associated with more negative feelings toward lower educated. The results did not show a interaction effect between the manipulation and the level of social identification.

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Appendix A

Meritocracy and Education-based status threat - Sona

Start of Block: Block 1: Introduction & Informed Consent

Q1
Thank you for your interest in our study. This study is part of a bachelor thesis of Anna Henneke, Bente Postema, Esra Çoban, Loic Dupas, Manon Hut and Sem Stegehuis, supervised by Jochem van Noord, at the University of Groningen.

Participation in this study is fully voluntary. You do not need to participate. You can stop at any time and leave questions blank that you do not wish to answer without negative consequences.

The study is about what is important to you, the kind of person you are, your education, and your opinion towards others in society. Participation in this survey study will take about 10 minutes. There are no direct benefits from participation, but there are also no negative consequences.

We will process your sona ID to be able to give you sona credits for participation. We will remove the sona ID from the data as soon as all participants have been compensated at the end of the study. Afterwards, the data will be anonymous and you will no longer be able to ask for access to your data, or to withdraw your data from the study.

Within a week after we collect your data, we will remove all personal identifiers. After that, no personal identifiers will be accessed by any of the researchers. Anonymous data will be stored indefinitely and might be shared with other researchers.

Do you have questions/concerns about your rights as a research participant or about the conduct of the research? You may also contact the Ethics Committee of the Faculty of Behavioural and Social Sciences of the University of Groningen: ec-bss@rug.nl.

Do you have questions or concerns regarding the handling of your personal data? You may also contact the University of Groningen Data Protection Officer: privacy@rug.nl.

Q2 I have read the information above and I consent to participate in this study.

- Yes (1)

Q3 I consent to the processing of my personal information.
- Yes (1)

End of Block: Block 1: Introduction & Informed Consent

Start of Block: Block 2: Age

Q4 How old are you?
- Younger than 18 (4)
- 18-30 (5)
- Older than 30 (6)

End of Block: Block 2: Age

Start of Block: Block 3: Education level

Q5
In this section, we would like to know more about your educational background.

Which of the following options best describe the highest educational level you are pursuing or have pursued?
- No qualifications (1)
- Less than an upper secondary diploma (2)
- Upper-secondary diploma or equivalent, general or vocational (e.g., A-level, BTEC, Abitur/ Fachhochschulreife, HAVO, VWO, MBO 2-3-4, matricular examination, ammattikoulu) (3)
- Short-cycle or vocational tertiary education (e.g., MBO-4 specialist, HBO Associate degree, Ausbildung, Berufsoberschule, Abendgymnasium, specialist Vocational Qualification, merkonomi, Higher national certificate/diploma, or equivalent) (9)
- Bachelor's degree or equivalent (University, Applied Sciences, Fachhochschule (FH), WO, HBO) (6)
- Master's degree or equivalent (7)
- Doctoral degree or equivalent (8)
- Other (please specify) (10) _____

Q6 Which of the following best describes the education you are pursuing or have pursued?
- General/no specific field (1)
- Art, fine/applied (2)
- Humanities (3)
- Technical and Engineering (4)
- Agriculture, Forestry (5)
- Teacher training, Education (6)
- Science, Mathematics, Computing, etc. (7)
- Medical, Health Services, Nursing, etc. (8)
- Economics, Commerce, Business Administration (9)
- Social Studies, Administration, Media, Culture (10)
- Law and Legal Services (11)
- Personal Care Services (12)
- Public Order and Safety (13)
- Transport and Telecommunications (14)

- Don't know (15)

End of Block: Block 3: Education level

Start of Block: Block 4: Meritocracy Attitudes

Q7 **In the following section, we want to learn more about your definition of success.**

To what extent do you agree with the following statements?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Uncontrollable factors often limit one's success, despite a person's best efforts. (1)	•	•	•	•	•
All people have equal opportunity to succeed. (2)	•	•	•	•	•
Hard work does not always pay off. (3)	•	•	•	•	•
People's success depends primarily on their ability and skill. (4)	•	•	•	•	•

End of Block: Block 4: Meritocracy Attitudes

Start of Block: Block 5a: Control condition

Q8
In the following text, we would like to share recent scientific findings with you. Please read the text carefully before you proceed to answer the next questions.

Recent research on the academic performance of students has focused on how personal features of students, such as intelligence and effort, affect educational achievement. These studies show that both intelligence and effort, but also family background, play important roles.

A study comparing twins [1] showed that a significant part of the academic achievement of students can be explained by natural ability. Further, a meta-review of longitudinal studies [2] showed that intelligence is an equally powerful predictor as factors such as parental income or educational level. Additionally, studies investigating 'grit' or 'growth mindset' among students have demonstrated that perseverance and effort are important for attaining good educational outcomes [3]. These studies found that other factors such as parental income or educational level are also important explanations of achievement.

To sum up, it appears that both talent and effort are important factors in educational achievement, though family background still plays an important role as well.

[1] Schulz, W., Schunck, R., Diewald, M., & Johnson, W. (2017). Pathways of intergenerational transmission of advantages during adolescence: Social background, cognitive ability, and educational attainment. Journal of Youth and Adolescence, 46(10), 2194-2214. [2] Strenze, T. (2007). Intelligence and socioeconomic success: A meta-analytic review of longitudinal research. Intelligence, 35(5), 401-426. [3] Hochanadel, A., & Finamore, D. (2015). Fixed and growth mindset in education and how grit helps students persist in the face of adversity. Journal of International Education Research, 11(1), 47-50.

Q9

In the following text, we would like to share recent scientific findings with you. Please read the text carefully before you proceed to answer the next questions.

Recent research on the academic performance of students has focused on how personal features of students, such as intelligence and effort, affect educational achievement. Contrary to what people tend to believe, these studies raise doubts on the importance of effort or perseverance.

A systematic review of 29 different studies concluded that grit, or perseverance, was only weakly related to educational outcomes [1]. Perseverance or effort was also not found to affect the academic performance of pharmacy students, as they "did not detect a significant association between Grit-S score and measures of academic or professional achievement" [2]. A 2007 study by one of the leading scholars on the role of effort in educational outcomes, noted that having 'grit' accounted for only an average of 4% of the variation in success outcomes [3]. Importantly, these studies noted that the difference in effort between weaker and stronger students was negligible, and therefore did not explain why some students performed better than others. These studies also found that other factors such as intelligence, parental income or parental educational level are more important explanations of differences in educational achievement.

To sum up, it appears that perseverance and effort are much less important for academic achievement than previously thought.

[1] Christopoulou, M., Lakioti, A., Pezirkianidis, C., Karakasidou, E., & Stalikas, A. (2018). The Role of Grit in Education: A Systematic Review. Psychology, 9(15), 2951-2971. [2] Gruenberg, K., Brock, T., & MacDougall, C. (2019). Longitudinal Associations Between Grit, Academic Outcomes, and Residency Match Rates Among Pharmacy Students. American journal of pharmaceutical education, 83(6). [3] Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: perseverance and passion for long-term goals. Journal of personality and social psychology, 92(6), 1087.

Q10

In the following text, we would like to share recent scientific findings with you. Please read the text carefully before you proceed to answer the next questions.

Recent research on the academic performance of students has focused on how personal features of students, such as intelligence and effort, affect educational achievement. Contrary to what people tend to believe, these studies raise doubts on the importance of natural ability or intelligence of the students.

For instance, a study comparing twins [1] showed that only a small part of the academic achievement of students can be explained by natural ability. Moreover, the study noted that differences in intelligence are much less caused by genetic factors than often assumed, rather they are tied to social background factors such as parental income. Indeed, a large-scale study found that only 2% of differences in educational level can be explained by genetic differences [3]. Further, a meta-review of longitudinal studies showed that intelligence was a less powerful predictor than expected, noting that "differences in favor of intelligence were not as overwhelming as one would have expected" [2]. These studies also found that other factors such as effort, parental income or parental educational level are a more important explanation of educational achievement.

To sum up, it appears that talent or natural ability is much less important for academic achievement than previously thought.

[1] Schulz, W., Schunck, R., Diewald, M., & Johnson, W. (2017). Pathways of intergenerational transmission of advantages during adolescence: Social background, cognitive ability, and educational attainment. Journal of Youth and Adolescence, 46(10), 2194-2214. [2] Strenze, T. (2007). Intelligence and socioeconomic success: A meta-analytic review of longitudinal research. Intelligence, 35(5), 401-426. [3] Rietveld, C. A., Medland, S. E., Derringer, J., Yang, J., Esko, T., Martin, N. W., Westra, H.-J., Shakhbazov, K., Abdellaoui, A., Agrawal, A., Albrecht, E., Alizadeh, B. Z., Amin, N., Barnard, J., Baumeister, S. E., Benke, K. S., Bielak, L. F., Boatman, J. A., Boyle, P. A., … Koellinger, P. D. (2013). GWAS of 126,559 Individuals Identifies Genetic Variants Associated with Educational Attainment. Science, 340(6139), 1467–1471.

End of Block: Block 5c: Doubting relevance of talent

Start of Block: Block 6: Outgroup attitudes, paternalism

Q11

We would like to get your feelings toward the social groups below.

Ratings between 50 degrees and 100 degrees mean that you feel favorable and warm toward the group.
Ratings between 0 degrees and 50 degrees mean that you don't feel favorable toward the group and that you don't care too much for that group.
You would rate the group at the 50 degree mark if you don't feel particularly warm or cold toward the group.

Dislike a great deal Neither like nor dislike Like a great deal Prefer not to answer

0 50 100

Less educated people ()	
Working class people ()	
Ethnic minority members ()	
Higher educated people ()	
Upper class people ()	
Non-ethnic minority members ()	

End of Block: Block 6: Outgroup attitudes, paternalism

Start of Block: Block 7: Outgr. attitudes towards less educated; societal problems, compensation

Q12
In this section, we would like to learn more about your views on your social surrounding.

To what degree do you agree with the following statements?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Many of the problems that we have to deal with in this country are due to the influence of the less educated. (1)	•	•	•	•	•
People who are less educated are meddling too often in affairs that they have no knowledge about. (2)	•	•	•	•	•
If less educated people had more influence, we would have even more problems in our society. (3)	•	•	•	•	•

End of Block: Block 7: Outgr. attitudes towards less educated; societal problems, compensation

Start of Block: Block 8: Paternalism & Meritocracy

Q13
Now, we would like to investigate your attitudes towards the societal topic of education.

To what extent do you agree with the following statements?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)

My university should prioritize people with a lower educational background over people with a higher educational background in admissions. (1)	
I am willing to pay more taxes to enable equal pay for people of all levels of education. (2)	
Those in jobs often carried out by those with a lower educational level should receive more pay. (6)	
We should provide (more) financial support to individuals with a lower educational level. (7)	

End of Block: Block 8: Paternalism & Meritocracy

Start of Block: Block 9: Attitudes towards other social groups

Q14 How important do you think the factors below are for achieving success in education?

Not at all important Slightly important Fairly important

0 50 100

Intelligence ()	
Perseverance ()	
Ambition ()	
Luck ()	
Hard work ()	
Born in a rich family ()	
Having well-educated parents ()	
Gender ()	
Ethnicity ()	

End of Block: Block 9: Attitudes towards other social groups

Start of Block: Block 10: Identification: Solidarity, Satisfaction and Centrality

Q15 To what extent do you agree with the following statements?

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I feel a bond with people who have a similar level of education to my own. (1)	•	•	•	•	•
I feel committed to people who have a similar level of education to my own. (2)	•	•	•	•	•
I think that people with a similar level of education to my own have a lot to be proud of. (3)	•	•	•	•	•
It is pleasant to have the level of education that I have. (4)	•	•	•	•	•
The level of education I have is an important part of my identity. (5)	•	•	•	•	•
The level of education I have is an important part of how I see myself. (6)	•	•	•	•	•
Please select 'Somewhat disagree'. (9)	•	•	•	•	•
I have a lot in common with the average person who has a similar education to my own. (7)	•	•	•	•	•
I am similar to the average person who has a similar level of education to my own. (8)	•	•	•	•	•

End of Block: Block 10: Identification: Solidarity, Satisfaction and Centrality

Start of Block: Block 11: Political attitudes

Q16

The following section aims to learn more about your political attitudes.

In politics, people sometimes talk of “left” and “right”. Using the following scale, where would you place yourself, where 0 means the left and 10 means the right?

Left Right

0 5 10

1 ()	

Page Break

Q17 Using the scales below, please say to what extent you agree or disagree with each of the following statements.

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
The government should take measures to reduce differences in income levels. (1)	•	•	•	•	•
The government should provide a decent standard of living for the unemployed. (2)	•	•	•	•	•
Gay men and lesbian women should be free to live their own life as they wish. (3)	•	•	•	•	•

Page Break

Q18 Would you say it is generally bad or good for your country's economy that people come to live here from other countries?

- Bad for the economy (1)
- Rather bad than good (2)
- Neither good, nor bad (3)
- Rather good than bad (4)
- Good for the economy (5)

Q19 Would you say that your country's cultural life is generally undermined or enriched by people coming to live here from other countries?

- Undermined (1)
- Rather undermined than enriched (2)
- Neither undermined, nor enriched (3)
- Rather enriched than undermined (4)
- Enriched (5)

Page Break

Q20
How important do you think the following factors are for getting ahead in life?

	Not at all important (1)	Slightly important (2)	Moderately important (3)	Very important (4)	Extremely important (5)
It is important to come from a wealthy family. (1)	•	•	•	•	•
It is important to have well-educated parents. (2)	•	•	•	•	•
It is important to have a good education yourself. (3)	•	•	•	•	•

End of Block: Block 11: Political attitudes

Start of Block: Block 12: Discrimination

Q21 Would you describe yourself as being a member of a group that is discriminated against in your country?
- Yes (1)
- No (2)
- Not sure (3)

Q22 On what grounds is your group discriminated against?
- Race or ethnicity (1)
- Nationality (2)
- Religion (3)
- Age (4)
- Gender (5)
- Sexuality (6)
- Disability (7)
- Education (8)

End of Block: Block 12: Discrimination

Start of Block: Block 13: Demographics

Q23 **In the last section, we would like to ask you a few questions about yourself.**

What is your gender?
- Male (1)
- Female (2)
- Other (4)

Q24 What is your nationality?
- Dutch (1)
- German (2)

- Other, namely: (3) _____

End of Block: Block 13: Demographics

Start of Block: Block 14: Parental education & class

Q25
What is your **father's** highest level of education?

- No qualifications (1)
- Less than an upper secondary diploma (2)
- Upper-secondary diploma or equivalent, general or vocational (e.g., A-level, BTEC, Abitur/ Fachhochschulreife, HAVO, VWO, MBO 2-3-4, matricular examination, ammattikoulu) (3)
- Short-cycle or vocational tertiary education (e.g., MBO-4 specialist, HBO Associate degree, Ausbildung, Berufsoberschule, Abendgymnasium, specialist Vocational Qualification, merkonomi, Higher national certificate/diploma, or equivalent) (9)
- Bachelor's degree or equivalent (University, Applied Sciences, Fachhochschule (FH), WO, HBO) (6)
- Master's degree or equivalent (7)
- Doctoral degree or equivalent (8)
- Other (please specify) (10) _____

Q26
What is your **mother's** highest level of education?

- No qualifications (1)
- Less than an upper secondary diploma. (2)
- Upper-secondary diploma or equivalent, general or vocational (e.g., A-level, BTEC, Abitur/ Fachhochschulreife, HAVO, VWO, MBO 2-3-4, matricular examination, ammattikoulu) (3)
- Short-cycle or vocational tertiary education (e.g., MBO-4 specialist, HBO Associate degree, Ausbildung, Berufsoberschule, Abendgymnasium, specialist Vocational Qualification, merkonomi, Higher national certificate/diploma, or equivalent) (9)
- Bachelor's degree or equivalent (University, Applied Sciences, Fachhochschule (FH), WO, HBO). (6)
- Master's degree or equivalent. (7)
- Doctoral degree or equivalent. (8)
- Other (please specify) (10) _____

Q27 Most people see themselves as belonging to a particular class. Please indicate which social class you would say you belong to?

- Lower class (1)
- Working class (2)
- Lower middle class (3)
- Middle class (4)
- Upper middle class (5)
- Upper class (6)
- Prefer not to answer (7)

End of Block: Block 14: Parental education & class

Start of Block: Block 15: Debriefing

Q28
Debriefing

Thank you for participating in our study about attitudes of the higher educated toward the less educated when putting doubt on the existence of meritocracy. Meritocracy is the belief that success is bound to hard work and talent rather than external factors like family background, wealth, and class.

We wanted to investigate whether the attitude of the highly educated towards the less educated would change if things such as background, age, and race did play a role in achieving a certain status. Additionally, we wanted to test if the results depend on political affiliation or background, and levels of identification with education status.

All answers given will be treated confidentially. In this matter, two of three conditions in our research were presented with fictional scientific articles (versus the control group). The articles had the aim to make you believe that current research supports the existence of a meritocracy in educational success.

If you know somebody that is going to participate in this study too, we request that you do not discuss this study with them until they have the opportunity to participate. Prior knowledge about the questions can influence the results of this study.

If you have any questions regarding this study feel free to contact us via: b.s.postema@student.rug.nl.

Please proceed to the next screen to end the survey and record your response.

End of Block: Block 15: Debriefing

Appendix B

Reliability tests

Redistribution variable

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,731	,734	4

Thermometer variable

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,782	,789	6

Outgroup attitude variable

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,790	,791	3

Social desirebililty variable

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,772	,773	8

Meritocratic beliefs variable

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,471	,468	4

Appendix C

Research Plan

PSY-2122-S-0065 Meritocracy and education-based status threat

Part 1. Research team

Jochem van Noord, PhD, BSS/Psychology, principal investigator, data processing, analysis, retention, sharing, publication

Anna Henneke, BSS/Psychology; Bachelor student: data collection, analysis, publication

Bente Postema, BSS/Psychology; Bachelor student: data collection, analysis, publication

Esra Coban, BSS/Psychology; Bachelor student: data collection, analysis, publication

Loic Dupas, BSS/Psychology; Bachelor student: data collection, processing, analysis, retention, publication

Manon Hut, BSS/Psychology; Bachelor student: data collection, analysis, publication

Sem Stegehuis, BSS/Psychology; Bachelor student: data collection, processing, analysis, retention, publication

Part 2. Purpose of the research

a) In current society, people derive their status from their education. In terms of meritocratic beliefs, this leads to the fact that highly educated people have a high social status and lowly educated people have a low social status. Highly educated people hold negative outgroup attitudes towards low educated people. This is the

reality in meritocratic terms, but what happens when the existence of meritocracy is doubted? The research question to be answered is: “Is the outgroup attitude of high educated towards low educated being influenced when their status is being threatened by doubting the existence of a meritocracy?”.

b) The answer to this main question will be answered in six different theses from the students mentioned in part one. These theses will be judged by Jochem van Noord and second opinionator Russell Spears.

Part 3. Participants

a) The thesis students will recruit fellow students and former students by contacting these students via their own networks. The questionnaire may be distributed through sharing on social media platforms . The students will announce the thesis research questionnaire and afterwards send the link to the survey so that the fellow students can fill it out by themselves. Furthermore, the SONA student pool will be used, which consists of first-year Psychology students studying at the University of Groningen. The general sample (higher educated people) will be students (and former students) at Dutch WO universities (e.g., Rijksuniversiteit Groningen, RUG). The main source of participants will be drawn from the RUG. If these methods do not provide a large enough sample we will use an online panel company (e.g. PanelInzicht) to provide extra participants for our data sample – here focusing on those who have attained their bachelor degree or higher.

The desired sample size for our main research question would be a minimum of 180 people but we will collect more to be able to answer sub questions, hence desired sample size is 200-300.

b) Compensation is offered for the part of the sample that participates in the study through the SONA pool in form of SONA credits.

Part 4. Methodology

a) The research will be an experimental design. We will measure how status threat (= meritocracy manipulation, independent variable) changes outgroup attitudes of higher educated people (dependent variable) after manipulating the belief of meritocracy. The existence of a meritocracy in an educational context will therefore be put in doubt and manipulated. In doing so, we have to make use of deception. Participants will not be informed about the actual research purpose (withholding information) when signing the informed consent form. Other than that, the experimental group will be presented with a fictional scientific article about current research findings regarding educational success and meritocratic beliefs (active deception). The intent is to convince the experimental group of the non-meritocratic nature of an educational system. Only in that way, we can measure changes in attitudes based on the legitimacy of a meritocracy assumption. After completing the questionnaire, they will receive a deception sheet explaining both the aim of the research and the deceptive research results.

b) The questionnaire will include the following items:

Questionnaire item(s)	Validated?

Demographics: Age, gender, nationality, educational background	--
Social group and class background e.g., "Would you describe yourself as being a member of a group that is discriminated against in your country?"	Yes, European Social Survey (ESS) and International Social Survey Programme (ISSP)
Thermometer ratings of social groups e.g., "How warm do you feel towards ethnic minority members?"	Yes, American National Election studies
Political attitudes towards educational groups and compensatory measures for social inequality e.g., "Many of the problems that we have to deal with in this country are due to the influence of the less educated."	No
Meritocracy and paternalism attitudes e.g., "Uncontrollable factors often limit one's success, despite a person's best efforts."	No
Societal influence of educational groups e.g., "The higher educated have too much influence in our society"	No

Attributions and evaluations of socially disadvantaged groups e.g., “To what extent are 1) less educated people, 2) working class people, 3) ethnic minority members responsible for the fact that they are in their group?“	Yes, Adapted from Kuppens et al., 2018
Educational identification scale e.g., “I feel a bond with people who have a similar level of education to my own.”	Yes, Leach et al., 2008
Political attitudes (general political positioning, attitudes on government interventions) e.g., “The government should take measures to reduce differences in income levels.“	Yes, ESS and ISSP
Immigration attidudes e.g., “Would you say it is generally bad or good for [country]’s economy that people come to live here from other countries?“	Yes, ESS
Attitudes on the importance of family and educational background e.g., “It is important to come from a wealthy family.“	Yes, ISSP

Social desirability (SDS-17 scale) e.g., “I always admit my mistakes openly and face the potential negative consequences“	Yes, Adapted from Stöber, 1999, 2001

Although the questionnaire does include political and personal items, we do not see an immediate threat of harm. None of the items are psychologically damaging or could put participants in trouble legally.

Additionally, most items have been validated in previous publicly available resources (such as the European Social Survey, International Social Survey, Programme, previous studies on education-based discrimination, etc.). Participants are informed about the political manner of the questionnaire in the informed consent, are free to not answer questions if they feel uncomfortable and can leave the questionnaire at all times. Participation is fully voluntary.

c) After data collection, we will conduct different statistical analyses (such as ANOVA) to analyze the effect that different levels of analysis have on intergroup attitudes. A variety of data analysis tools will be used, including IBM SPSS, R, etc. A variety of statistical methods will be utilized, including regression analysis, descriptive analysis, etc.

   The analysis will be conducted primarily by Loic Dupas and Sem Stegehuis.

d) No training will take place for the involved researchers for data collection.

Part 5. Risk assessment

a) There are no direct foreseeable harms or benefits associated with participating in the research.

b) Not applicable.

c) Not applicable.

Part 6. Consent process

Consent will be transferred digitally before participants get access to the questionnaire. The participation can take as much time as they need to decide about their participation before the study due to it being an online questionnaire.

The purpose of the study will be explained before the participant begins with filling in the questionnaire. The researchers conducting the research will be stated including their contact information in case of any further questions. The participant will be made aware that they can ask any questions they might have about the research at any time. They will be informed that participation is voluntary and that they can discontinue their participation in the research at any time and that this discontinuation will not have any negative consequences for them. Furthermore, they do not have to provide a reason for a possible discontinuation of participation.

They will be informed that their identity will be kept confidential and that only anonymized data might be shared with other researchers. Information about the storage of their research data will be given and they will be told who to contact if they want to access or have their data removed.

Information will be given about how long it will take for them to answer the questionnaire. In the end, the participant will be asked to confirm that they read the information given about the study and that they would like to participate in the research.

Part 7. Other ethical concerns

a) There are no other foreseeable ethical concerns associated with the research.

b) Not applicable.