

**Education-based Status Threat: Shedding doubt on the existence of a Meritocracy**



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**Abstract**

In our society it is commonly believed that our status in it is determined by the merit we offer to society in return. This is especially true in educational contexts, where merit in form of hard work or talent is assumed to be the determining factor of our status rather than family background or financial resources. In our present research we try to explore how members of highly educated groups engage in thinking shaped by meritocratic beliefs and thus feel validated in their educational status. By questioning these beliefs and hence threatening their status, we try to measure changes in their attitude towards the lower educated, their willingness to redistribute resources to the lower educated, as well as to what extent they identify with their own educational group. We find a significant difference in attitude towards the lower educated as well as the willingness to redistribute resources when shedding doubt on the importance of hard work and diligence as a predictor of educational status. We do not find a change in identification with their own group. When shedding on the relevance of talent for achieving a highly educated status, we fail to find any significant difference with the control group.

## **1. Introduction**

When considering the components that make up social life within a modern society, we find education to be deeply connected to not only how we understand ourselves, but also how we perceive and treat others (Bhardwaj, 2016). While the distribution of social classes with its associated status might differ in various western nations, education can serve as an omnipotent predictor of status in societies (Hollingshead, 1975). This research focuses on potentially eliciting differences between groups of the lower and the higher educated by manipulating the underlying ideals that give meritocracy its relevance. According to Khan & Jerolmack (2013), determining factors of a meritocracy are ideals such as hard work and talent, which are inherent to our culture and society.

### **1.1 Individualism and status**

It is crucial to understand the role of the individual in society to begin to understand how education influences it all. In social identity theory, the individual constantly seeks to enhance themselves and increase salience in intergroup comparisons, which in turn increases self-esteem (Hogg et al., 2004). To make that possible, they will need to interact with society in economical ways and exchange personal goods, which can come in form of services, manual labour, or creative endeavours. This socio-economic system can assign a value, or merit, to each member of society, which should in theory be based on the ability of the individual to contribute to the greater whole, influencing their status in society (Becker, 1994). Nowadays, we refer to societies who have adopted this idea as the core principle of how to determine an individual's status within it as a meritocracy. In theory, that means that in such a social system everybody has equal chances to gain or lose status and wealth purely based on their own actions (Kluegel & Smith, 1986).

This seemingly unimpeded social mobility between the different levels of a hierarchical society should be heavily scrutinized though. Even now there is research that suggests that the influence of the individual's responsibility in a supposed meritocracy is used to excuse or downplay major injustices in society (Warikoo & Fuhr, 2013). We must consider that those in the lower ranks of society did not earn their place by merit but rather by being born into circumstances that making social mobility incredibly hard by design and leading to greater inequalities (Breen, 2010). To better be able to understand where these inequalities stem from, we must understand how we recognize status in an applied scenario based on measurable aspects. One core aspect and the focus of this work is education, which is recognized in society to be a strong indicator for status, and oftentimes assumed to be purely based on the individual's intelligence and diligence, adhering to the principles of a meritocracy. Earlier research suggests that education is integral for subjective social status in all countries and can be seen as a universal indicator for merit because it is so well recognized. (Van Noord et al., 2019).

## **1.2 Meritocratic thinking**

Since we consider education a central aspect of intergroup relationships in a meritocracy, we must ask what aspects influence how we view each other in the light of our knowledge, what school we or our parents went to and even the location we live at. No matter how we draw the line between the two groups, which we may dub "more educated" and "less educated", we find the latter group to experience disadvantages on a society of equal opportunities. The more educated groups tend to attribute the absence of educational successes internally, when primed for the concept of meritocracy. They harbour a generally negative attitude towards the less educated, and engage in stereotyping (Madeira et al., 2017). If we look even closer, this not just a form of passive appraisal. Students actively discourage changes in systems of admission that might compromise their self-perception, which

generally does not acknowledge their advantage over the less fortunate when considering the possibility of admission to an elite University. Doing so would make the gain in status by being member of in such a university meaningless, since it is supposed to be defined by their personal merit (e.g. intelligence) (Warikoo & Fuhr, 2013).

Generally, highly educated individuals are perceived more positively than the lowly educated, no matter which group is asked. Furthermore, there is evidence that the highly educated engage in more intergroup bias and assume that the reason for treating the lower educated worse is their responsibility, meaning they display a strong influence of meritocratic ideology. (Kuppens et al., 2018).

### **1.3 The paternalistic perspective**

This by no means indicates general animosity towards the lower educated but rather that the higher class see it as beneficial for everyone to perpetuate the status quo. We refer to the idea that a more powerful party dominates and patronizes a less powerful one by legitimizing it as acting in the interest of all as paternalism. In practice that means that out of perspective of paternalistic thinking, they can harbour a generally warm attitude towards them while denying them any real chance to reach for higher positions and achievement (Jackman, 1994). Paternalism allows for a more implicit form of unjust treatment that does not cause any dissonance in the person engaging in it, even though their actions can be considered hypocritical because they will adjust their meritocratic believes to their own advantage at will (Warikoo & Fuhr, 2013). In terms of education that would mean that no matter how hard we work, our educational achievements are determined by external factors that make the rewards for our (low-educated) labour inherently unfair, since we were never allowed a chance to reach highly paid position (Jackman, 1994).

The social constructs upholding meritocracy may be best understood by its impact on an individual level. Eliciting differences between the earlier mentioned groups “more educated” and “less educated” on basis of status may be promising to gain insight on the impact outgroup attitudes. Specifically – due to the eminence of a meritocratic social system within the tested society – the induction of doubt may lead to significant changes in outgroup attitudes of an “more educated” individual towards a “less educated” member of society. Consequently, this research poses the question:

Does threatening the status of the higher educated by putting doubt on the existence of a meritocracy affect outgroup attitudes towards the less educated?

The experimental approach facilitated this study into manipulating groups by drawing out the perceived consequence in status through hard work in experimental group 1 and perceived consequence in status through talent in experimental group 2. This consequence is measured by the comparison to a control group on basis of three dependent variables:

- Social identification with own group (SI)
- Attitude towards lower educated people (ALE)
- Willingness to redistribute resources to the lower educated (WRR)

Our research facilitated the concept of SI according to Tajfel (1982), which includes both the individuals feeling of awareness of membership and that this awareness is associated with certain values. ALE is utilized by assessing participants inclination that is expressed with some degree of favour or disfavour towards lower educated people (Eagly & Chaiken, 1998). Finally, WRR does not distinct between voluntary or coercive action of resource distribution, in order to elicit all potential motives behind an individual’s tendency such as self-interested (e.g., less crime) and other-interested (e.g., less poverty) (Plotnik & Winters, 1985).

The participants were randomly assigned to either of the groups (0 – control group, 1, 2). Each group was asked to answer questions after reading a text. While group (0) received a text highlighting the importance of all factors: family background, intelligence, talent and perseverance in educational social status, group (1) received a text inducing doubt about the value of perseverance/ hard work and group (2) were presented with a text inducing doubt about the importance of talent as a component of social status related to education. We hypothesize to find a change towards a generally warmer attitude of the highly educated towards the lower educated when comparing experimental with control group. Our research may contribute towards further understanding meritocracy and its implications for our everyday life. Readers and researcher of similar disciplines alike may gain awareness in how the within the scope of this research utilized concepts such as perseverance and talent as well as family background and intelligence pose as factors associated with educational social status.

## **2. Method**

### **2.1 Participants**

The sample used to conduct this study consisted of 194 current or former students at any University, though in practice mostly of the University of Groningen. In an initial review of the data, 66 participants had to be excluded due to either not finishing the questionnaire, failing the check proving they had read the questions thoroughly, or being under 18 years of age. While the majority of the participants was female (67 %), males made up 31% of the sample and 2 % did not identify as either male or female. When asked to indicate their age, 93 % of all participants were aged 18 to 30 and 7 % were older than 30. The sample consisted to 49 % participants of Dutch nationality, 37 % of German nationality and 14 % chose the option “other nationality”. As stated in the questionnaire, all participants had to either hold a university degree, or were studying at a university currently. Furthermore, a majority of

participants indicated that they identified as middle-class (33%) or upper middle-class (48%), adding up to 81% of students who identified as middle class in a more general sense.

Recruitment of the participants was conducted via social media platforms (WhatsApp, Facebook, Twitter etc.) via the snowball method. Researchers used them to reach out to peers by announcing their research and attaching a link to the message which led to the questionnaire hosted on Qualtrics. In addition to this, recruitment was contributed to by the Universities own SONA student pool, consisting of mostly first year psychology students which were compensated for their efforts with 0.3 SONA credits. There was no compensation for participants outside of SONA.

## **2.2 Materials**

For our experimental design we utilized a questionnaire that contained questions of newly created questions as well as ones drafted from sources which can be found in the References section. Additional questions that were included were written by the researchers. The questionnaire was presented on a digital device of the participants choosing (usually a computer or phone) and scaled accordingly to fit the size of the screen 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. With this goal in mind, more specific questions were asked, concerning the participants meritocratic believes, their views on paternalism and their political ideology. To gather more information about the participant, questions were asked to determine their family background, social class, and identification measures.

It contained 26 questions (of relevance to the results, excluding Informed Consent), and took about 10 minutes to complete on average. Bipolar Likert scales as well as rating scales (scores 0-100) were used. For further reference, the questionnaire can be found in Appendix B.



### **2.3 Design**

We utilized an experimental post-test only design, where participants are randomly assigned to groups. Manipulation is given only to the experimental group and both groups are measured on the post test. The post-test compares the two manipulation groups with the control group. The independent variable is the assignment to the group: control group (0), experimental group (1 - doubting the relevance of hard work and perseverance), experimental group (2 - doubting the relevance of talent). The dependent variables are the results of the measures of the questionnaire (ALE, WRR, SI).

### **2.4 Procedure**

Data collection started on 10.12.2021 and ended on 23.12.2021. All necessary information required to successfully participate in the survey was disclosed to the participants, however the exact hypotheses were withheld to not compromise the data by biased responses. Participants were informed the questionnaire would take about 10 minutes to complete, their answers were anonymous and confidential, and their participation entirely voluntary with the possibility to opt-out at any point. After providing demographic information and answering a question about their meritocratic beliefs, they were presented with one of three articles prepared by the researchers, assigned randomly. The first group (control) was presented with a fake research article highlighting the importance of how family background, intelligence, and hard work as well as talent each play a role in explaining a student's academic success in life. The second condition (manipulation 1) was presented with a fake research article doubting the relevance of hard work and perseverance for academic success. The third condition (manipulation 2) was presented with a fake research article which doubted the relevance of talent in academic success. The rest of the questionnaire consisted of questions to assess the attitudes of the participant after the manipulations. They were asked to indicate their attitude towards the lower educated, the highly educated, the working class and members

of ethnic minority groups. Furthermore, they were asked about the importance of self-identification with their educational group in society, their general attitude towards other education groups and their view on the importance of education. Finally, they were asked questions indicating their political ideals. One of the questions contained a check proving that the participant was in fact reading all the questions and not answering randomly. After concluding the questionnaire, the participants were debriefed and disclosed the purpose of the study. For further reference, the full questionnaire, the consent form, and the debriefing can be found in Appendix B.

## 2.5 Measures

The following measures were used after the manipulation to test for the difference between the respective groups, indicating whether the manipulation had an effect.

Attitudes towards the lower educated (ALE) measured the participants outgroup attitudes towards those they perceive as lower educated. The participant was asked to indicate their level of agreement with several statements on a five-point Likert scale (1=strongly disagree, 5=strongly agree). A higher value was indicative of a more negative attitude towards the outgroup. An example for such a question: "People who are less educated are meddling too often in affairs that they have no knowledge about." The measure consisted of three such items (see Appendix B). These statements had a value of Cronbach's alpha of  $\alpha=0.79$ , but they were not validated.

Willingness to redistribute resources (WRR) measured the attitude of the participants concerning the idea to share or give up resources in favor of those in less educated groups. The participant was asked to indicate their level of agreement with various statements on a five-point Likert scale (1=strongly disagree, 5=strongly agree). A higher value was associated with greater willingness to redistribute resources. An example for such a statement: "I am

willing to pay more taxes to enable equal pay for people of all levels of education.” This measure consisted of four such items, it had Cronbach’s alpha of  $\alpha=0.73$  but was also not validated.

For the final measure, social identification (SI) displayed to which degree the participant identified with their respective education group, for the purposes of our research the group of higher education (e.g. college degree). They were, once again, asked to indicate their level of agreement with various statements on a five-point Likert scale (1=strongly disagree, 5=strongly agree). A higher value indicated a greater or stronger association with their educational group. An example for such a statement: “I feel a bond with people who have a similar level of education to my own.” This measure consisted of nine items and had a Cronbach’s alpha of  $\alpha=0.77$ . This question was validated and taken from Leach et al., 2008.

### **3. Results**

Before conducting any analysis, assumptions for ANOVA were checked, they can be found in Appendix A. There are no significant outliers and the assumptions of homogeneity of variances is not violated. However, we find a violation of the assumption of normality for the variable ALE when comparing group 0 and group 1, with the variables ALE and SI when comparing group 0 and group 2. This has been considered when interpreting the data, but ANOVA provides robustness to this violation to a degree and we propose that this may reflect an extreme answering style of the participants, which does not undermine the conclusions of this analysis. To find evidence that doubting the relevance of hard work and perseverance (hypothesis 1) or doubting the relevance of talent (hypothesis 2) can have a significant impact on our independent variables (ALE, WRR, SI), we conduct a one-way ANOVA between groups comparing the respective manipulation groups (group 1 for doubting hard work and perseverance, group 2 for doubting talent) with the control group (group 0).

### 3.1 Doubting the relevance of hard work and perseverance

When considering the results for the difference of ALE between group 1 ( $M=2.49$ ,  $SD=1.04$ ) and the control group 0 ( $M=2.90$ ,  $SD=0.93$ ), we found a significant positive effect at  $p$ -value  $<0.5$  [ $F(1,123)=5.26$ ,  $p=.024$ ,  $\eta^2=.041$ ] which indicated a largely less negative attitude towards the less educated, the mean of the manipulation being lower than the mean of the control group. For our second analysis between these groups, we considered the difference in WRR between group 1 ( $M=3.37$ ,  $SD=0.82$ ) and the control group 0 ( $M=3$ ,  $SD=0.8$ ). Here we also found a significant effect at  $p$ -value  $<0.5$  [ $F(1,123)=6.35$ ,  $p=.013$ ,  $\eta^2=.049$ ] which indicates that participants are more willing to redistribute resources after the manipulation. Finally, we tested whether SI is different for group 1 ( $M=3.35$ ,  $SD=0.57$ ) and group 0 ( $M=3.35$ ,  $SD=0.57$ ). We failed to find a significant difference here, as the results showed almost no difference at all at  $p$ -value  $<0.5$  [ $F(1,124)=.002$ ,  $p=.967$ ,  $\eta^2=.00$ ]. This indicates that the manipulation has no effect on how much participants identify with their educational group.

### 3.2 Doubting the relevance of talent

Once again, we considered the dependent variable ALE and compare group 2 ( $M=2.57$ ,  $SD=1.08$ ) and the control group ( $M=2.90$ ,  $SD=0.93$ ). The resulting difference failed to reach significance at  $p$ -value  $<0.5$  [ $F(1,127)=3.37$ ,  $p=.069$ ,  $\eta^2=.026$ ], but considering the significant effect in group 1 for the same variable, this data can still be considered to be of interest. For the variable WRR we again compare group 2 ( $M=3.05$ ,  $SD=0.96$ ) and group 0 ( $M=3$ ,  $SD=0.8$ ). We fail to find a significant difference between the two groups at  $p$ -value  $<0.5$  [ $F(1,127)=.073$ ,  $p=.787$ ,  $\eta^2=.001$ ]. For our final test, we consider SI and compare group 2 ( $M=3.2$ ,  $SD=0.62$ ) and group 0 ( $M=3.35$ ,  $SD=0.57$ ) again. Once again we fail to find a significant effect of the manipulation at  $p$ -value  $<0.5$  [ $F(1,128)=2.03$ ,  $p=.157$ ,  $\eta^2=.016$ ].

## **4. Discussion**

### **4.1 Findings and implications**

With our experimental design we tried to explore how the attitude of the highly educated can change when we shed doubt on the existence of a meritocracy. To operationalize this concept, we tried to question the existence of meritocracy by conveying to the participants that the concepts of (1) hard work and perseverance or (2) talent do not influence our educational status, and thus can determine our membership of our respective educational group. Considering the results of the present study, we find that there are differences in the effect of the manipulation. Whereas in the first group we find a significant differences for the variables of ALE and WRR when compared to the control, the comparison of group two does not net such results. Conceptually, that could mean that doubting the relevance of talent is not as strongly perceived as a threat to meritocracy, since ALE stays largely the same. Members of the highly educated group might not feel that shedding doubt on their position achieved by talent is sufficient to significantly change their attitudes towards the lower educated. This is surprising, since it could implicate an awareness of the lack of relevance of talent and would mean that this group never felt they achieved their status by the merit of talent, if the idea of a meritocracy holds true. In group one the significant difference between manipulation and control shows that doubting the relevance of hard work and perseverance can lead to a more positive attitude towards the lower educated. In practice that means that the assumption - the lowly educated deserve their status due to their lack of diligence - can be partly dissuaded when meritocratic ideals are questioned, meaning that these ideals play a relevant role in outgroup appraisal and are assumed to be a reality rather than considerations. Curious then, are the implications for WRR when comparing group one with the control. We find that the group doubting the relevance of hard work and perseverance is significantly more willing to share and redistribute resources towards those of groups of lower education. Unlike our

previous assumptions that a threat to meritocracy would have a negative effect on outgroup attitudes, we do not find this reflected in our experimental results when considering the first manipulation group. While we could not find a significant change in SI for both conditions, we still find this fact noteworthy. Even though the threat to meritocratic ideals is displayed to the participant, they do not display the need to identify less with their group. This is despite the fact, that they are more willing to share resources and harbour a generally less negative attitude. This may be connected to the internalized paternalistic ideals as defined by Jackman (1994) which do not require any ill will nor general negativity towards other social groups to justify their own status. Instead, they are willing to continue to identify with their own group irrespective of how just or supported by merit they think this status is. It does not seem to matter for the higher educated how the meritocratic ideal is challenged, which leads us to suppose that their extent of self-identification might be completely unrelated to how they assume they achieved their status.

#### **4.2 Limitations**

While there were some significant findings, that make sense conceptually and the reliability measures were sufficiently unproblematic, we must keep in mind that the questions were not externally validated. The measures for WRR were originally meant to reflect paternalistic attitudes rather than what they measure now but had to be revised due to an error in defining the variable. This leads only to a theoretical connection between the measures and paternalistic concepts.

Also, due to the demographic makeup of the sample, we must consider the possibility that the data could lead to entirely different conclusions, if it included participants from a larger range of ages and localities. Older Individuals or individuals of regions in the Netherlands that are poorer might have completely different perspective on the meritocratic ideal. The makeup of the sample could also not include effects of gender and nationality, due

to not including enough members of respective categories. In general, caution is advised with a sample that is so narrow in scope when interpreting the results. In this specific case, many of the participants with the study will be familiar with psychology principles or the course itself, which might limit the effects of the manipulation which uses fake research articles from this field.

In addition to these limitations, we also must consider whether our research design can fully explain whether the observed changes in WRR and ALE are solely due the perceived threat of meritocratic ideals, which would necessitate an additional measure of this concept before and after the manipulation.

### **4.3 Further Research**

To fully explore the implication of the findings, further research of the topic should include more specific and better operationalizations of the underlying concepts outgroup attitudes and meritocratic believes. Our significant effects need to be replicated with verified questions to show that they can hold true regardless of the wording. In addition, new manipulations - and as such threats to the meritocratic ideals- should be tested, since questioning different aspects of the meritocratic beliefs (talent, hard work) had different effects on the participants.

As mentioned above the change in belief in meritocracy should also be measured in further research on changes in outgroup attitudes, to find direct associations of the concepts. By providing several ways to manipulate these beliefs while measuring them and checking for changes in attitude, we may be able to provide new explanations for the significant effects we found evidence for in the current study.

## **5. Conclusion**

By experimentally manipulating the meritocratic beliefs of members of groups of higher education, we were able to find support that their attitude towards lower educated people, as well as their willingness to redistribute resources to them could be changed. This can be summarized as a generally warmer attitude towards people of that group but is limited to manipulating their believe in hard work and perseverance and not the belief in talent. This might be indicative of the lesser role that the assumption of talent as a predictor of educational status plays. Furthermore, irrespective of how we manipulate the believe in meritocracy, the degree of how much the participants identify with their 'highly' educated group does not change at all, providing some support for the proposition that people in this group might engage in paternalistic thinking. In terms of societal implications, finding ways of changing an individual's willingness to consider external factors (family background, social status) rather than internal factors (intelligence and talent, hard work and diligence) would be an important achievement, that can have grander implications if it can be replicated and further utilized to shape society in a more positive way.



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**Appendix A – Statistical Data****Group 1 and 0***Table 1 Descriptives of group 0 and 1*

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
ALE	.00	61	2.9016	.93163	.11928	2.6630	3.1402	1.00	4.00
	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
WRR	.00	61	3.0055	.80477	.10304	2.7994	3.2116	1.00	4.00
	1.00	64	3.3711	.81649	.10206	3.1671	3.5750	1.50	4.00
	Total	125	3.1927	.82810	.07407	3.0461	3.3393	1.00	4.00
SI	.00	62	3.3513	.56627	.07192	3.2074	3.4951	1.67	4.00
	1.00	64	3.3472	.51224	.06403	3.2193	3.4752	2.33	4.00
	Total	126	3.3492	.53734	.04787	3.2545	3.4439	1.67	4.00

*Table 2 Tests of Homogeneity of Variances for group 0 and 1*

		Levene	df1	df2	Sig.
		Statistic			
ALE	Based on Mean	.495	1	123	.483
	Based on Median	.486	1	123	.487
	Based on Median and with adjusted df	.486	1	119.065	.487
	Based on trimmed mean	.588	1	123	.445
WRR	Based on Mean	.074	1	123	.786
	Based on Median	.032	1	123	.859
	Based on Median and with adjusted df	.032	1	122.875	.859
	Based on trimmed mean	.076	1	123	.784
SI	Based on Mean	.690	1	124	.408
	Based on Median	.707	1	124	.402
	Based on Median and with adjusted df	.707	1	123.209	.402
	Based on trimmed mean	.687	1	124	.409

*Table 3 ANOVA of group 0 and 1*

		Sum of Squares	df	Mean Square	F	Sig.
ALE	Between Groups	5.170	1	5.170	5.257	.024
	Within Groups	120.964	123	.983		
	Total	126.133	124			
WRR	Between Groups	4.175	1	4.175	6.351	.013
	Within Groups	80.858	123	.657		
	Total	85.034	124			
SI	Between Groups	.001	1	.001	.002	.967
	Within Groups	36.091	124	.291		
	Total	36.092	125			

*Table 4 ANOVA Effect Sizes<sup>a</sup> of group 0 and 1*

		Point Estimate	95% Confidence Interval	
			Lower	Upper
ALE	Eta-squared	.041	.000	.127
	Epsilon-squared	.033	-.008	.120
	Omega-squared Fixed- effect	.033	-.008	.119
	Omega-squared Random-effect	.033	-.008	.119
WRR	Eta-squared	.049	.002	.139
	Epsilon-squared	.041	-.006	.132
	Omega-squared Fixed- effect	.041	-.006	.132
	Omega-squared Random-effect	.041	-.006	.132
SI	Eta-squared	.000	.000	.005
	Epsilon-squared	-.008	-.008	-.003
	Omega-squared Fixed- effect	-.008	-.008	-.003
	Omega-squared Random-effect	-.008	-.008	-.003

- a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.
- b. Negative but less biased estimates are retained, not rounded to zero.

*Table 5 Tests of Normality for group 0 and 1*

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ALE	.089	125	.016	.953	125	<.001
WRR	.086	125	.025	.982	125	.087
SI	.080	125	.047	.989	125	.437

a. Lilliefors Significance Correction

### For group 2 and 0

*Table 6 Descriptives of group 0 and 2*

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
ALE	.00	61	2.9016	.93163	.11928	2.6630	3.1402	1.00	4.00
	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
WRR	.00	61	3.0055	.80477	.10304	2.7994	3.2116	1.00	4.00
	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
SI	.00	62	3.3513	.56627	.07192	3.2074	3.4951	1.67	4.00
	2.00	68	3.2022	.62107	.07532	3.0519	3.3525	1.44	4.00
	Total	130	3.2733	.59796	.05244	3.1695	3.3771	1.44	4.00

*Table 7 Tests of Homogeneity of Variances for group 0 and 2*

		Levene			
		Statistic	df1	df2	Sig.
ALE	Based on Mean	2.333	1	127	.129
	Based on Median	2.419	1	127	.122
	Based on Median and with adjusted df	2.419	1	126.362	.122
	Based on trimmed mean	2.519	1	127	.115
WRR	Based on Mean	1.403	1	127	.239

	Based on Median	1.165	1	127	.283
	Based on Median and with adjusted df	1.165	1	121.033	.283
	Based on trimmed mean	1.387	1	127	.241
SI	Based on Mean	.745	1	128	.390
	Based on Median	.342	1	128	.560
	Based on Median and with adjusted df	.342	1	124.720	.560
	Based on trimmed mean	.581	1	128	.447

*Table 8 ANOVA for group 0 and 2*

		Sum of Squares	df	Mean Square	F	Sig.
ALE	Between Groups	3.462	1	3.462	3.369	.069
	Within Groups	130.487	127	1.027		
	Total	133.948	128			
WRR	Between Groups	.058	1	.058	.073	.787
	Within Groups	100.016	127	.788		
	Total	100.074	128			
SI	Between Groups	.720	1	.720	2.031	.157
	Within Groups	45.404	128	.355		
	Total	46.125	129			

*Table 9 ANOVA Effect Sizes<sup>a,b</sup> of group 0 and 2*

		Point Estimate	95% Confidence Interval	
			Lower	Upper
ALE	Eta-squared	.026	.000	.101
	Epsilon-squared	.018	-.008	.094
	Omega-squared Fixed- effect	.018	-.008	.093
	Omega-squared Random-effect	.018	-.008	.093
WRR	Eta-squared	.001	.000	.033

	Epsilon-squared	-.007	-.008	.025
	Omega-squared Fixed-effect	-.007	-.008	.025
	Omega-squared Random-effect	-.007	-.008	.025
SI	Eta-squared	.016	.000	.081
	Epsilon-squared	.008	-.008	.074
	Omega-squared Fixed-effect	.008	-.008	.074
	Omega-squared Random-effect	.008	-.008	.074

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

*Table 10 Tests of Normality for group 0 and 2*

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ALE	.126	129	<.001	.951	129	<.001
WRR	.072	129	.097	.985	129	.175
SI	.100	129	.003	.970	129	.005

a. Lilliefors Significance Correction

## Appendix B – Materials

### Questionnaire

Q4 How old are you?

- Younger than 18 (4)
- 18-30 (5)
- Older than 30 (6)

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)

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?

- 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)

## 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.

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

## 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?

- 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)

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?

- 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)

Q14 How important do you think the factors below are for achieving success in education on a scale from 0-100?

- Intelligence
- Perseverance
- Ambition

- Luck
- Hard work
- Born in a rich family
- Having well-educated parents
- Gender
- Ethnicity

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

- I feel a bond with people who have a similar level of education to my own.
- I feel committed to people who have a similar level of education to my own.
- I think that people with a similar level of education to my own have a lot to be proud of.
- It is pleasant to have the level of education that I have.
- The level of education I have is an important part of my identity.
- The level of education I have is an important part of how I see myself.
- Please select 'Somewhat disagree'.
- I have a lot in common with the average person who has a similar education to my own.
- I am similar to the average person who has a similar level of education to my own.

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)

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)

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)

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?

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

- 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)

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)

Q20

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

- 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)

### **Information Sheet, Informed Consent and Debriefing**

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](mailto: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](mailto:privacy@rug.nl).

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

- Yes (1)
- No (2)

Q3 I consent to the processing of my personal information.

- Yes (1)
- No (2)

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.