Sussex Research Online

Educationism and the irony of meritocracy: negative attitudes of higher educated people towards the less educated

Article (Accepted Version)

Kuppens, Toon, Spears, Russell, Manstead, Antony S R, Spruyt, Bram and Easterbrook, Matthew (2018) Educationism and the irony of meritocracy: negative attitudes of higher educated people towards the less educated. Journal of Experimental Social Psychology, 76. pp. 429-447. ISSN 0022-1031

This version is available from Sussex Research Online: http://sro.sussex.ac.uk/id/eprint/71335/

This document is made available in accordance with publisher policies and may differ from the published version or from the version of record. If you wish to cite this item you are advised to consult the publisher's version. Please see the URL above for details on accessing the published version.

Copyright and reuse:
Sussex Research Online is a digital repository of the research output of the University.

Copyright and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable, the material made available in SRO has been checked for eligibility before being made available.

Copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

http://sro.sussex.ac.uk

Educationism and the irony of meritocracy: Negative attitudes of higher educated people towards the less educated

Toon Kuppens

University of Groningen

Russell Spears

University of Groningen

Antony S. R. Manstead

Cardiff University

Bram Spruyt

Vrije Universiteit Brussel

Matthew J. Easterbrook

University of Sussex

This paper has been accepted for publication in the Journal of Experimental Social Psychology.

Abstract

Social psychology has studied ethnic, gender, age, national, and other social groups but has neglected education-based groups. This is surprising given the importance of education in predicting people's life outcomes and social attitudes. We study whether and why people evaluate education-based in-groups and out-groups differently. In contrast with popular views of the higher educated as tolerant and morally enlightened, we find that higher educated participants show education-based intergroup bias: They hold more negative attitudes towards less educated people than towards highly educated people. This is true both on direct measures (Studies 1-2) and on more indirect measures (Studies 3-4). The less educated do not show such education-based intergroup bias. In Studies 5-7 we investigate attributions regarding a range of disadvantaged groups. Less educated people are seen as more responsible and blameworthy for their situation, as compared to poor people or working class people. This shows that the psychological consequences of social inequality are worse when they are framed in terms of education rather than income or occupation. Finally, meritocracy beliefs are related to higher ratings of responsibility and blameworthiness, indicating that the processes we study are related to ideological beliefs. The findings are discussed in light of the role that education plays in the legitimization of social inequality.

Keywords: educationism, attribution, intergroup bias, education-based groups

Word count: 17468 (without abstract and references)

> Now that people are classified by ability, the gap between the classes has inevitably become wider. The upper classes are […] no longer weakened by self-doubt and self-criticism. Today the eminent know that success is just reward for their own capacity, for their own efforts, and for their own undeniable achievement. They deserve to belong to a superior class.
>
> –Michael Young, in *The rise of the meritocracy* (1958), p. 106

> Education, education, education
>
> –British Prime Minister Tony Blair, on his three priorities ahead of the 1997 General Election

As Tony Blair pointed out, education matters, and emphasizing this helped to sweep him to power in his first of three consecutive UK election victories. Why, then, is education arguably the most important social division that has *not* been significantly studied in social psychology? This is all the stranger because the relation between education and health and social attitudes is at least as strong as for other demographic characteristics such as gender, ethnicity, or income (Easterbrook, Kuppens, & Manstead, 2016; Marmot & Wilkinson, 2005). In spite of this, social psychology textbooks address prejudice based on race, ethnicity, gender, sexual preference, age, religion, body shape, physical or mental disability, nationality, and study major (Aronson, Wilson, & Akert, 2013; Hewstone, Stroebe, & Jonas, 2012; Hogg & Vaughan, 2008), yet education is conspicuous by its absence. The reasons for this are interesting in themselves; we argue that attitudes to those with few educational qualifications have become one of the last bastions of 'acceptable' prejudice, to the extent that it may not be seen by many as prejudice at all, and that

these views are shared in important respects by the target group itself. Here we present the first experimental evidence of education-based intergroup attitudes and in the process challenge the popular view, supported by previous research, that more highly educated people are morally enlightened and thus less prejudiced compared to their less educated counterparts (see also Kuppens, Easterbrook, Spears, & Manstead, 2015; Kuppens & Spears, 2014). We also compare attitudes towards the less educated with attitudes towards the poor and the working class in order to investigate what is special about the less educated as a group, and how this might contribute to the legitimization of social inequality.

The case for studying education-based groups

Why are education-based groups worthy of investigation? *First*, people's level of education matters because educational differences are one of the major divides in contemporary societies. Education is related to outcomes such as unemployment, income, health, and well-being (Grusky & DiPrete, 1990; Marmot, Ryff, Bumpass, Shipley, & Marks, 1997), and also to a wide range of social attitudes such as racism, lack of trust, and political cynicism, for which it is a more consistent predictor than income is (Easterbrook et al., 2016). In addition, education is considered to be a solution for these individual and societal problems (Depaepe & Smeyers, 2008; Labaree, 2008), demonstrating its perceived importance. The societal importance of education is perhaps best illustrated by noting that education is the best demographic predictor of people's opinion on current political conflicts such as those surrounding Donald Trump and the Brexit (Goodwin & Heath, 2016).

Second, contrary to the belief that education is a vehicle for social mobility, opportunities for academic achievement—the gateway to all education's advantages—are distributed very unequally. There is a strong relation between social

background and academic achievement (OECD, 2013), and longitudinal data show that these effects of social background are not merely due to differences in intelligence (Bukodi, Erikson, & Goldthorpe, 2014; Bukodi, Goldthorpe, Waller, & Kuha, 2015; Damian, Su, Shanahan, Trautwein, & Roberts, 2014). In experimental studies, students taking the role of teachers discriminate against pupils from lower socio-economic backgrounds (Autin, Batruch, & Butera, 2016) and widespread normative testing has been shown to increase the SES achievement gap (Smeding, Darnon, Souchal, Toczek-Capelle, & Butera, 2013). Tertiary education institutions in the US have also been shown to adopt language and customs that are biased in favor of the middle (vs. working) classes, causing stress and performance deficits among first-generation scholars (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012; Stephens, Townsend, Markus, & Phillips, 2012). Clearly, the path to academic achievement is a high-speed freeway for some but a rocky road for others. Thus, differences in educational achievement cannot be considered completely fair and the educational system partly reproduces and legitimizes existing social differences (Bourdieu & Passeron, 1990). Yet even social psychological theories that are directly concerned with the justification of inequality, such as System Justification Theory (Jost & Banaji, 1994), pay scant attention to the role played by educational outcomes. The combination of the importance of education and the unequal access to educational opportunities makes the neglect of educational differences in social psychological research all the more surprising.

Attitudes towards education-based groups. Given that educational differences are large and at least partly unfair, a central question for social psychology is how educational differences are subjectively perceived. From the point of view of the less educated, this amounts to whether this is the basis of stigma (see Kuppens et

al., 2015). From the point of view of the more highly educated, the question is how they evaluate and respond to the less educated. Are their attitudes toward educational groups likely to make things better or worse for the less educated? Large proportions of the population recognize the unfair situation or treatment of disadvantaged groups such as the physically disabled, women, and ethnic minorities, and support social justice via equality legislation. However, we propose that the ideological and motivational foundations of attitudes about education-based groups are somewhat different to these other social groups.

Existing research on attitudes toward education-based groups

Perhaps unsurprisingly, students see educated people as very competent but also quite warm (Fiske, Cuddy, Glick, & Xu, 2002). In a representative sample, and consistent with the Stereotype Content Model (Cuddy, Fiske, & Glick, 2008), Spruyt and Kuppens (2015b) found that the higher educated saw themselves as more competent than the less educated, while the less educated saw themselves as warmer than the higher educated. Less educated people also rated the conflict between educational groups to be more important than higher educated people did (Spruyt, 2014; Spruyt & Kuppens, 2015a; Stubager, 2009), which may be an example of a dominant group downplaying intergroup conflict in order to avoid having to address it (Jackman, 1994; Livingstone, Sweetman, Bracht, & Haslam, 2015).

To our knowledge, these are the only studies on attitudes toward education-based groups. One basic question we investigate here is whether education-based intergroup bias exists, and whether this goes beyond stereotypes of warmth and competence that are partly based on the social reality of educational qualifications. Education-based intergroup bias is the topic of Studies 1-4 and we now discuss our predictions for those studies.

Education and moral enlightenment

What *kind* of attitudes should we expect between education-based groups? There are reasons to expect that the higher educated will show less intergroup bias than the lower educated. First, in naturally occurring groups, members of low status groups generally show more intergroup bias than those of high status groups (Mullen, Brown, & Smith, 1992). This makes sense from the perspective of social identity theory (Tajfel & Turner, 1979) because members of low status groups need to strive harder than members of high status groups to achieve a positive identity and social change (Scheepers, Spears, Doosje, & Manstead, 2006b). Second, higher levels of education could be expected to promote tolerance, therefore reducing the intergroup bias displayed by the higher educated. A popular idea is that high levels of education are related to moral enlightenment and better moral judgment, a notion first articulated by Stouffer (1955) and Lipset (1959). The reasoning is that people with higher levels of education have developed a more sophisticated way of thinking, and an understanding that certain values should be universally applied to all groups. There is indeed evidence that higher educated people are more tolerant of some minority or low-status groups (Carvacho et al., 2013; Easterbrook et al., 2016; Wagner & Zick, 1995). According to the moral enlightenment perspective, the tolerant worldview of the more highly educated is a consequence of their superior moral reasoning facilitated by education.

However, research has long shown that the effect of education on egalitarian attitudes often does not translate into support for concrete measures aiming to achieve greater equality (Jackman & Muha, 1984; Stember, 1961; Weidman, 1975). Yet, the notion of moral enlightenment still persists. A recent resurrection has come in the form of two longitudinal studies that presented negative correlations between

children's scores on an intelligence test and their level of self-reported prejudice two decades later, a relation partially mediated by educational qualifications (Deary, Batty, & Gale, 2008; Schoon, Cheng, Gale, Batty, & Deary, 2010). According to these authors, the relation between education and tolerance is due to the common influence of intelligence on both, rather than to the effect of education itself on moral reasoning. The underlying idea, however, is the same: The higher educated are more tolerant because of their superior moral reasoning. Based on this research, one could expect the higher educated to show less education bias than the less educated do. Moral enlightenment should prevent the higher educated from showing negative reactions to outgroups, including the less educated.

However, rather than being due to moral enlightenment, the self-reported tolerance of the higher educated may reflect sophisticated ideological discourses that ultimately mask the self-interest of the higher educated (Jackman & Crane, 1986; Jackman & Muha, 1984). For example, the fact that the higher educated defend principles of tolerance and equality while opposing actual measures that could achieve equality has been argued to reflect ideological refinement in defense of self-interest (Jackman & Muha, 1984). Tolerant attitudes appear positive but do not actually help to change anything about the situation of inequality. Furthermore, this allows a dominant group to appear friendly and fair without risking the loss of its advantaged position (Jackman, 1994).

Similar mechanisms could be at play in the attitudes towards the lower educated. Emphasizing the inherent value of education and being educated could also be a way to justify and legitimize social inequality and the advantaged position of the higher educated. In a world where inequality and discrimination based on gender, race, and class are now less acceptable, emphasizing the meritocracy of education

may still be an acceptable way to justify one's high status position. In this way, stressing the importance of education could be a way to legitimize social differences (Bourdieu & Passeron, 1990). Following this *conflict-based approach*, one could argue that there is no compelling reason why the higher educated would show less education bias compared to the less educated; indeed, they may even show greater bias because it justifies their position. Furthermore, a conflict-based approach could predict that identification enhances education bias because the highly identified are more invested in the intergroup conflict. Investigating these issues is one of the main goals of this paper. We also investigate possible *reasons* behind any education-based intergroup bias. In particular, we look at the role that attributions of responsibility for educational achievement play in the legitimization of social inequality.

Education and the legitimization of social inequality

Perceived individual responsibility for educational achievement is likely to be a key factor affecting how people evaluate economic and social inequality. Given the strong relation of education to income and unemployment in contemporary societies (a relation that has become stronger, see Featherman & Hauser, 1976; Grusky & DiPrete, 1990), the nature of educational differences might contribute to a meritocratic view of inequality. We take a first step towards addressing these issues by investigating attributions and emotions towards low-status socio-economic groups based on education, wealth, and occupation (in Studies 5-7). We borrow from Weiner's attribution-emotion model (Weiner, Perry, & Magnusson, 1988) but apply this to the group level to investigate attributions made about educational groups. This builds on research on the "ultimate" attribution error, in which groups are seen as responsible for their own outcomes, which are attributed to internal properties of the group (Pettigrew, 1979). Specifically, we predict that educational differences will be

seen as more deserved than income or class differences, and thus high and low educated groups will be seen as more responsible for their respective outcomes than is merited (the "ultimate" attribution error), and this will also have consequences for the emotions felt towards those groups.

Overview of Studies

Studies 1 and 2 use a thermometer measure to assess attitudes to less educated and highly educated people to test whether education bias is openly expressed. Studies 3 and 4 investigate whether minimal information about someone's educational background affects how others evaluate them. In these studies, we create short descriptions of people who differ in educational and ethnic background, and ask participants to evaluate them. Studies 5-7 assess attributions and emotions towards the lower educated and compare these to other groups low in socio-economic status (poor, working class), as well as other disadvantaged groups. All studies apart from Studies 1 and 6 have a socially diverse sample so that we are able to compare the viewpoints of less and higher educated people. All studies were conducted in Western societies (UK, US, Belgium, and Netherlands).[1] We report all measures, manipulations, and exclusions in these studies.

Study 1

In Study 1 we used a simple, explicit self-report measure of education bias, a thermometer measure of attitudes to both more highly and less highly educated people. In Study 1a participants were UK students, in Study 1b they were Dutch students, and in Study 1c participants were mostly German students studying in the Netherlands. Most of these university students will end up with a degree qualification, but they are strictly speaking not yet part of the group of higher

[1] The data for all studies are available at https://osf.io/v6a8x.

educated people. This potential limiting is addressed by recruiting an older sample in Study 2.

Method

Participants. ***Study 1a.*** Sixty-six[2] people at Cardiff University (62 bachelor students and 4 recent graduates, about two-thirds from psychology) participated in this study in exchange for a small payment (48 women, mean age = 21.1, *SD* = 2.58). Three people indicated they were not born in the UK but only one of these three considered themselves to be part of an ethnic minority.

Study 1b. Two hundred and ten[3] psychology students at the University of Groningen participated in this study in return for course credit (151 women, mean age = 19.3, *SD* = 1.47). All participants were born in the Netherlands but five indicated they belonged to an ethnic minority.

Study 1c. Two hundred and seven[4] psychology students (mostly Germans) at the University of Groningen participated in this study in return for course credit (142 women, mean age = 20.2, *SD* = 1.88). One hundred and forty-six were born in Germany, fourteen were born in the Netherlands, six were born in the UK, and the others were born in a variety of European and non-European countries. For the analyses based on national groups, we only used the 146 German participants.

---

[2] We did not perform a power analysis but collected as much data as possible prior to the end of the academic year.

[3] The sample size was based on a power calculation for manipulations and measures that are not reported here, but came after the measures that we analyze here.

[4] The sample size was based on a power calculation for manipulations and measures that are not reported here, but came after the measures that we analyze here.

Procedure. Participants first indicated their parents' education level and field of study. They then evaluated 10 film genres (not analyzed here). Participants continued with a thermometer measure of feelings towards a series of groups, which is the dependent variable of interest here. Participants went on to complete further measures, but these are not relevant here.

Parental education. Categories for the parental education level question in Study 1a were 'No qualifications,' 'GCSE,' 'A-level,' 'City and guilds level 4,' 'Bachelor's degree,' 'Master's degree,' and 'Ph.D.' Studies 1b and 1c had similar categories, but adapted to the nationality of the participants. The full lists used in all three studies can be found in Tables S1-S3 in the supplemental material. We averaged the two ratings (r = .49 in Study 1a, .52 in Study 1b, and .46 in Study 1c) into a single measure of parental education.[5]

Education bias. A series of groups (11 in Study 1a, 9 in Study 1b, and 12 in Study 1c) were evaluated on a thermometer measure. In Study 1a, the groups 'British,' 'English,' and 'Welsh' were evaluated first, in random order. Then eight further groups were evaluated, again in random order ('French,' 'Indian,' 'Polish,' 'Muslims,' 'old people,' 'young people,' 'people who go to higher education,' and 'people who leave school after their GCSEs'). In Study 1b, 'Dutch' were evaluated first. Then eight further groups were evaluated in random order ('Belgians,' 'French,' 'Indonesian,' 'Polish,' 'old people,' 'young people,' 'lowly educated,' and 'highly educated'). In Study 1c, 'students,' 'Dutch,' and 'Germans' were evaluated first, in random order. Then nine further groups were evaluated, again in random order ('French,' 'Indian,' 'Polish,' 'Muslims,' 'old people,' 'young people,' 'people who have studied at university,' and 'people who drop out from school before getting their

[5] In Study 1c we had information on parents' education for only 174 participants.

secondary school diploma'). Participants indicated how warm or cold they generally felt towards each group, on a scale from 0 to 100.

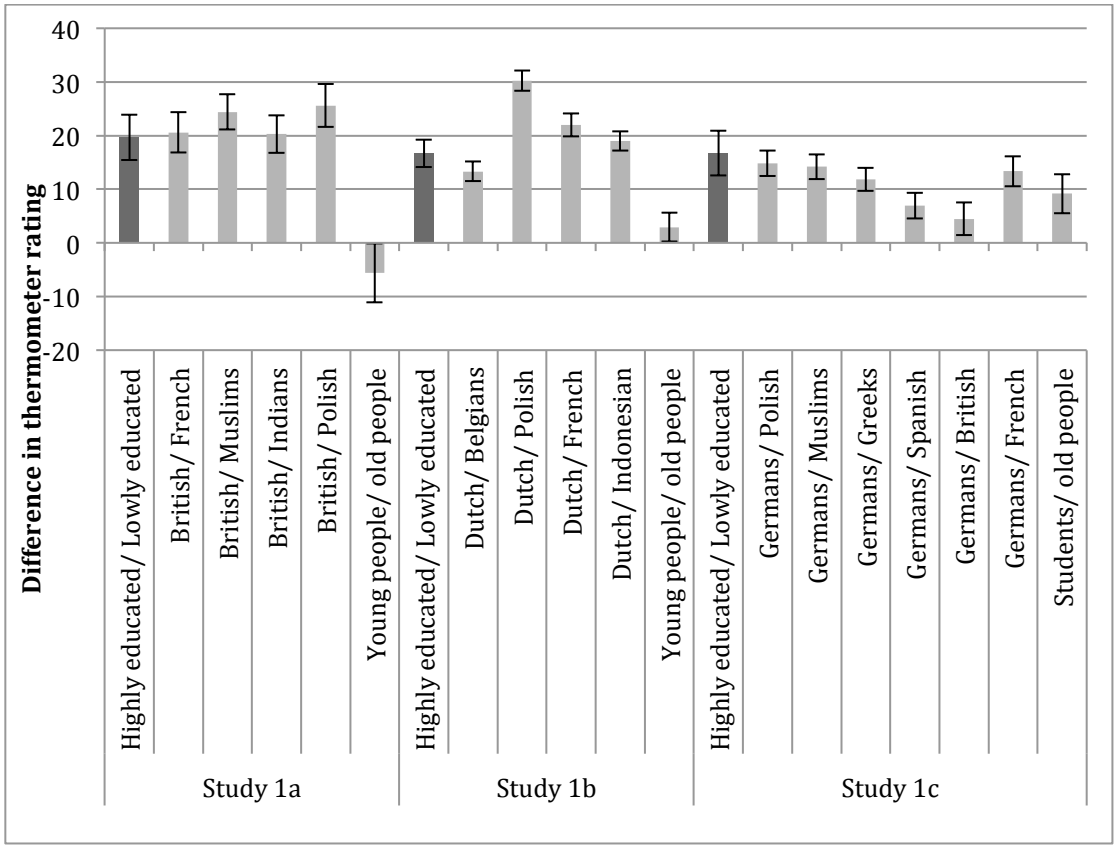
Results

In Study 1a, higher educated people (M = 78.8, SD = 14.6) were evaluated more positively than less educated people (M = 59.1, SD = 19.6), $t(65) = 8.29$, $p < .001$, Hedges' $g_{av} = 1.12$, 95%CI [0.85, 1.39]. In Study 1b, highly educated people (M = 74.25, SD = 14.3) were evaluated more positively than less educated people (M = 57.58, SD = 16.4), $t(65) = 12.91$, $p < .001$, Hedges' $g_{av} = 1.08$, 95%CI [0.91, 1.24]. In Study 1c, higher educated people (M = 70.9, SD = 15.46) were again evaluated more positively than less educated people (M = 53.05, SD = 21.22, $t(206) = 10.84$, $p < .001$, Hedges' $g_{av} = 0.96$, 95%CI [0.78, 1.13].

Figure 1 shows education bias alongside other types of bias. The error bars represent Cousineau-Morey confidence intervals that allow within-subject comparisons (Baguley, 2012). Overall, education-based intergroup bias seems similar in magnitude to intergroup bias based on nationality, and larger than intergroup bias based on age. We tested whether education bias differed from bias based on ethnic or national groups. Because we also wanted to be able to present evidence for no difference between education and ethnicity as a source of bias (i.e., evidence for a null effect for the interaction), we used Bayesian repeated measures for these analyses. Each analysis had a 2 (type of group: education versus ethnic/national) by 2 (ingroup versus outgroup) design. A JASP Bayes factor ANOVA (JASP Team, 2017; Rouder, Morey, Speckman, & Province, 2012) with default prior scales revealed the Bayes Factors presented in the last column of Table 1. These are Bayes Factors *against* the interaction between type of group and in-group/out-group. The Bayes Factors therefore indicate how much more likely the data are under the assumption of no

interaction than under the assumption of an interaction. As is already evident in Figure 1, results depend on the specific national or ethnic out-group that is being investigated. In Study 1a there is moderate evidence against an interaction for Indians and French, but only anecdotal evidence against an interaction for Muslims and Polish. In Study 1b there is moderate and strong evidence for an interaction in the cases of French and Polish, respectively. These are the only two instances in Study 1 where there is evidence for an interaction showing stronger national/ethnic bias than education bias; all other comparisons either favor the null hypothesis of no interaction, or show stronger education bias. For Belgians and Indonesians, there is anecdotal and moderate evidence against an interaction. In Study 1c there is moderate evidence against an interaction for Polish, French, and Muslims. However there is strong evidence for an interaction when Spanish and British are concerned, meaning that for Germans education bias was stronger than national intergroup bias of Germans against Spanish and British people. In sum, out of 14 tests 6 provide moderate evidence against an interaction, 2 provide evidence that education bias is stronger than national bias, and 2 provide evidence that national bias is stronger than education bias. Overall then, education bias seems to be similar in size to national/ethnic bias.

Figure 1: Differences between thermometer ratings (Study 1). Error bars are Cousineau-Morey within-subject 95% CIs for comparisons within one sample.



In Studies 1a and 1c, parental education was not related to the evaluation of the less educated (Study 1a: $r = .05$, $p = .72$; Study 1c: $r = -.02$, $p = .81$), the evaluation of the higher educated (Study 1a: $r = .12$, $p = .35$; Study 1c: $r = .003$, $p = .97$), or a score reflecting the difference between evaluations of the two educational groups (Study 1a: $r = .04$, $p = .73$; Study 1c: $r = .02$, $p = .81$). However, in Study 1b parental education was positively related to the evaluation of the highly educated ($r = .16$, $p = .02$), negatively related to the evaluation of the lower educated ($r = -.13$, $p = .052$), and positively related to the difference score ($r = .24$, $p < .001$). It is unclear why these relations only show for the Dutch sample and not for the British and German samples. Further research will have to determine whether the result in Study 1b is a false

positive, whether the effect is small and differs between studies due to sampling error, or whether there are reliable differences between countries.

Table 1: Comparison of bias based on different types of social categories (Study 1)

		Means				Bayes Factor against interaction
		HE	LE	In-group	Out-group	
Study 1a	HE/LE versus British/Indians	78.8	59.1	82.2	62.0	5.494
	HE/LE versus British/French	78.8	59.1	82.2	61.6	4.907
	HE/LE versus British/Muslims	78.8	59.1	82.2	57.8	2.559
	HE/LE versus British/Polish	78.8	59.1	82.2	56.7	1.525
Study 1b	HE/LE versus Dutch/Belgians	74.3	57.6	77.4	64.1	1.558
	HE/LE versus Dutch/Polish	74.3	57.6	77.4	47.2	0.000
	HE/LE versus Dutch/French	74.3	57.6	77.4	55.4	0.144
	HE/LE versus Dutch/Indonesians	74.3	57.6	77.4	58.4	4.396
Study 1c	HE/LE versus German/Polish	69.8	53.1	72.3	57.4	5.715
	HE/LE versus German/Muslim	69.8	53.1	72.3	58.1	4.922
	HE/LE versus German/Greeks	69.8	53.1	72.3	60.4	1.700
	HE/LE versus German/Spanish	69.8	53.1	72.3	65.4	0.014
	HE/LE versus German/British	69.8	53.1	72.3	67.8	0.000
	HE/LE versus German/French	69.8	53.1	72.3	59.0	3.502

Note. HE=higher educated. LE=less educated.

Discussion

Education bias in explicit, self-reported evaluation of groups is present in university students: Participants in these studies evaluated highly educated people more positively than lowly educated people. Across samples of British, Dutch, and German students, the effect size was large, consistent, and approximately the same size as bias based on nationality. That education bias is not smaller overall than ethnic/national bias adds weight to the question of why education bias has not previously been studied.

In Study 1 we only assessed the attitudes of students, who are destined to occupy a relatively high rung on the education ladder. However, Study 1 does not

inform us about education bias among lowly educated people. Study 2 therefore includes participants from a wider range of educational backgrounds.

Study 2

Method

Participants. 466 Mechanical Turk workers (56.7 % female, M_{age} = 37.2, *SD* = 12.7) completed an online study. Fifteen participants did not disagree with the item "The word 'political' has twenty letters," and three did not select 'Strongly disagree' on the item "Please select 'Strongly disagree' to indicate you are paying attention". These 18 inattentive participants were excluded, leaving 448 in the sample.

Respondent's education. Participants were asked to indicate their highest educational qualification. Responses were recoded into five categories: 'High school diploma or less,' 'Some college but no degree,' '2-year college degree,' '4-year college degree,' and 'Post-graduate degree.'

Education bias. As in Study 1, a series of groups were evaluated on a thermometer measure. The focal groups were 'Lowly educated people (people who dropped out or stopped studying after high school)' and 'Highly educated people (people with at least a Bachelor's degree).' The 14 other groups included Christian fundamentalists, liberals, the military, Trump supporters, disabled people, and entrepreneurs. Groups were presented in a random order.

Procedure. The thermometer measures for lowly and highly educated people were embedded in a larger, unrelated study. Participants first answered items about whether they were independent thinkers or tended to follow social norms. Depending on condition, they then completed an 18-item scale about attitudes towards political correctness and received bogus information about the relation between political correctness and prejudice, or between political correctness and independent thinking.

Next, measures of symbolic racism, attitudes towards Muslims, and benevolent sexism were presented in random order. Then participants filled out all the thermometer measures, and provided demographic information.

Results

We conducted a mixed ANOVA in which thermometer ratings were modeled as a function of participant education, group (lowly versus highly educated people, varied within-subjects), and their interaction. Overall the higher educated (M = 70.7, SD = 19.7) were evaluated more positively than the less educated (M = 49.7, SD = 25.6), $F(1,447) = 204.14$, $p < .001$, $\eta_p^2 = .31$. This main effect was qualified by an interaction with participant education, $F(4,443) = 6.06$, $p < .001$, $\eta_p^2 = .05$. Participants from all education levels made more positive evaluations of the higher educated than the less educated, but this difference was larger for higher educated participants (for means and effect sizes split by respondent's education, see Table 2). The fact that education bias is stronger among higher educated participants seems primarily due to their relatively more negative evaluation of the less educated, compared to less educated participants.

Table 2: Education bias on thermometer ratings, by respondent's education (Study 2)

		Mean thermometer rating (SD)			
Respondent's education	N	Lowly educated	Highly educated	Hedges' g_{av}	p
High school or less	40	62.8 (24.6)	69.2 (19.9)	0.30	.08
Some college, no degree	111	52.9 (26.1)	68.4 (21.8)	0.64	< .001
2-year college degree	48	53.3 (24.9)	68.1 (18.0)	0.67	< .001
4-year college degree	174	43.8 (24.3)	71.6 (19.2)	1.26	< .001

Post-graduate degree	75	49.2 (25.5)	74.2 (18.3)	1.12	< .001

Discussion

Confirming the results of Study 1, higher educated participants showed strong education-based intergroup bias on a feeling thermometer measure and evaluated the higher educated much more positively than the less educated. Less educated participants, however, did not evaluate their own educational group (i.e., the less educated) more positively than the out-group (i.e., the higher educated). Indeed, even participants with only a high school diploma or less tended to evaluate their own group less positively than the group of higher educated people. In sum, higher educated participants showed more intergroup bias than did less educated participants, and this was mainly due to their more negative evaluation of the group of less educated people. This is a first indication that the supposed moral enlightenment of the higher educated is not reflected in evaluations of education-based groups.

The thermometer measure used in Studies 1 and 2 is a direct self-report measure of the evaluation of groups. Such measures are important because they index attitudes that are openly expressed and that reflect aspects of the current discourse about education-based groups. However, less direct measures are also important because they reveal less explicit attitudes and biases that can also feed into behavior. We therefore used a less direct measure of education bias in Studies 3 and 4. We also used a measure of identification with education-based groups to investigate whether high identifiers show more education bias.

Study 3

The goal of Study 3 was to investigate whether minimal information about a person's educational background affects how others evaluate that person. We created

short descriptions of individuals who differed in educational and ethnic background, and this allowed us to calculate measures of *education bias* and *ethnic bias*. For present purposes ethnic bias serves as a comparison.[6]

As explained above, the moral enlightenment hypothesis leads one to expect that higher educated participants would express tolerance towards people with a different educational background. By contrast, a conflict-based model would predict that the higher educated show as much education bias as the less educated do, or even more. In relation to predictions for our measure of ethnic bias, there is a lot of evidence that less educated people generally hold more negative self-reported attitudes towards ethnic minorities.

We included a measure of identification with education-based groups and a between-subjects manipulation of the salience of education. Both high identification and the salience of people's educational level could be expected to lead to higher education bias (especially for the highly educated), because these should make the education category more relevant (see Kuppens et al., 2015; Spears, Doosje, & Ellemers, 1999).

Method

This study had a 2 (target education: target individual highly versus lowly educated) by 2 (target ethnicity: target individual Muslim versus non-Muslim) by 3 (participant education: No secondary school diploma, Secondary school or vocational higher education diploma, or University degree) by 2 (education salience: education salient versus not salient) by continuous (identification) design. Target education and ethnicity were manipulated within participants; the other factors vary between participants.

---

[6] Other data from this study were reported as Study 2 in Kuppens et al. (2015).

Participants. Initially 208 participants were recruited through a research assistant's social network. Thirty-seven participants who did not provide information about their educational level or did not answer the identification questions were excluded from analyses. Three participants who were 15/16 years old and still in secondary education were also excluded; 168 remained (age *M* = 24.5, *SD* = 5.7; 65 male, 97 female, 6 gender unknown). A further 314 participants were recruited through an online loyalty program (www.maximiles.co.uk); by way of compensation, they received points that could be exchanged for consumer purchases. Forty participants who did not provide information about their educational level or did not answer the identification questions were excluded from analyses. One participant was excluded because he responded '1' to 42 consecutive questions; 273 participants remained. Thus in total there were 441 participants (293 female, 129 male, 19 gender unknown; age *M* = 32.78; *SD* = 11.50). Nine further participants were excluded from analyses because they indicated they were Muslim, leaving 432 participants. Participants completed an online questionnaire.

Education bias and Muslim bias. As an indirect measure of bias due to group membership, participants were asked to evaluate four individuals who differed in education level and ethnicity. We told participants that we were interested in how people form first impressions on the basis of limited information. We presented four individuals in a 2 (ethnicity: native British versus Muslim) by 2 (education: less versus higher educated) within-subjects design. Presentation order of the four individuals was determined by a balanced Latin square design such that each individual was presented once in each location (first, second, etc.) and was preceded by each of the other individuals once. Information not relevant to education or ethnicity was counterbalanced with the education and ethnicity information, but

presented in a fixed order. For example, the first individual who was presented always lived in London, had a dog, and played cricket (regardless of education and ethnicity). Here is an example of a higher educated Muslim individual: "Mohammed Hussain is 25 years old and currently lives in London, where he works as a doctor. He lives in rented accommodation with a work colleague. People who know him would describe him as a chatty kind of character. He was born and grew up in Bournemouth, but moved to London to go to university. This is where he studied medicine and he continued to reside after completing his degree. Mohammed likes playing cricket on the weekends and his favourite hobby is walking his dog, which helps him to relax after a busy day at work."

For each individual, three questions assessed liking (e.g., "Do you like this person?"). Two questions assessed similarity (e.g., "Do you feel you are similar to this person?") and one final question read "To what extent do you think you could be friends with this person?". All these items correlated highly but because liking is conceptually different from similarity and because the possibility of friendship depends on both the self and the other, we used the three liking questions as the main measure of evaluation (α = .91 for Muslim higher educated, .92 for Muslim less educated, .90 for non-Muslim higher educated, and .90 for non-Muslim less educated). The similarity items also formed a reliable scale (*r*s = .76 for Muslim higher educated, .75 for Muslim less educated, .71 for non-Muslim higher educated, and .76 for non-Muslim less educated).

Education. Participants were asked to indicate the highest educational level they had achieved. Responses were recoded into three categories: No secondary school diploma (n = 97), Secondary school or vocational higher education diploma (n = 101), and University degree (n = 234). Because we had a young sample and 19.3%

were still in full-time education, we categorized those who were currently students as holding the degree or certificate for which they were studying.

Identification. Identification was assessed immediately after the question about participants' level of education. We used 10 items ($\alpha = .91$) from Leach et al.'s (2008) multidimensional identification scale, two items from each subscale (e.g., "I feel a bond with people who have had the same education as me").

Education salience. We manipulated the salience of participants' own education level by varying the question order. In the 'education salient' condition, questions about their parents' and their own education (including the identification question) preceded the dependent variables. In the 'education not salient' condition, these questions followed the dependent variables.

Results

Analytic strategy. We conducted a mixed ANOVA, where liking and similarity ratings were modeled as a function of the education of the target person, the ethnicity of the target person, participant education, education salience, and all interactions. However, because the participant education variable is not balanced (does not have equal numbers in each category), main effects are estimated without the interaction term with participant education in the model. Because we estimated parallel models for similarity and liking, we used a Bonferroni correction by only considering effects to be statistically significant when the p-value is .025 or smaller.

Education bias, anti-Muslim bias, and education level. As expected, there was an interaction between the education of the target and participants' own education both for similarity, $F(2,385) = 25.72$, $p < .001$, $\eta_p^2 = .12$, and liking, $F(2,386) = 5.38$, $p = .005$, $\eta_p^2 = .03$. Simple effects indicated that higher educated participants judged the higher educated target to be more similar to themselves ($M =$

3.94, *SD* = 1.23) than the less educated target (*M* = 3.35, *SD* = 1.24), $F(1,385) = 48.92$, $p < .001$, $\eta_p^2 = .11$, and also liked the higher educated target (*M* = 4.57, *SD* = 0.99) more than the less educated target (*M* = 4.32, *SD* = 1.00), $F(1,386) = 25.40$, $p < .001$, $\eta_p^2 = .06$. The least educated participants judged the less educated target to be more similar to themselves (*M* = 3.78, *SD* = 1.24) than the higher educated target (*M* = 3.30, *SD* = 1.21), $F(1,385) = 12.76$, $p < .001$, $\eta_p^2 = .03$. In contrast to the higher educated participants, however, for the least educated participants the education of the target did not affect liking, $F(1,386) = 0.002$, $p = .96$, $\eta_p^2 < .001$. This means that although the least educated group perceived that they were more similar to the less educated target, they did not evaluate it more positively.

There was a main effect of target ethnicity, indicating that participants saw Muslim targets (*M* = 3.48, *SD* = 1.24) as less similar to themselves than non-Muslim targets (*M* = 3.84, *SD* = 1.16), $F(1,389) = 49.38$, $p < .001$, $\eta_p^2 = .11$, and they also liked Muslim targets less (*M* = 4.37, *SD* = 1.14) than non-Muslim targets (*M* = 4.54, *SD* = 1.06), $F(1,390) = 13.23$, $p < .001$, $\eta_p^2 = .03$. There was no interaction between target ethnicity and participant education for similarity, $F(2,385) = .05$, $p = .95$, $\eta_p^2 < .001$, nor liking , $F(2,386) = 2.18$, $p = .11$, $\eta_p^2 = .01$. Although the latter interaction was not significant, ethnic intergroup bias in liking was highest among the least educated group.

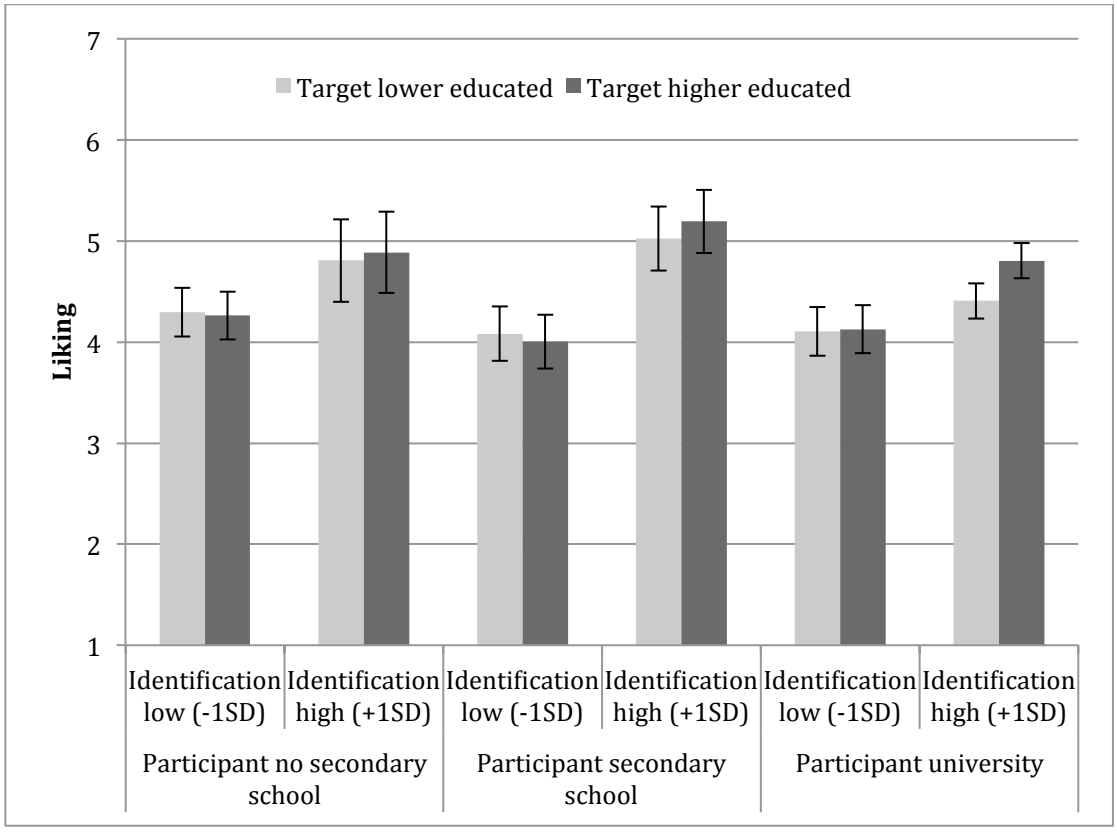
Education salience did not have any main or interaction effects.

Identification. Identification with one's educational group was higher among the higher educated (*M* = 4.80) compared to the intermediate educated (*M* = 4.33) and the least educated (*M* = 3.94) group, $F(2,429) = 22.77$, $p < .001$, $\eta^2 = .10$. For a detailed analysis of identification based on the data of Studies 3-4, see Kuppens et al. (2015). We added identification as a predictor to the previous model. For similarity

ratings, there was a three-way interaction between identification, target education, and participant education, $F(2,379) = 4.47$, $p = .01$, $\eta_p^2 = .02$. Higher educated participants who were low in identification (1SD below the mean) did not see themselves as more similar to highly educated targets (M =3.40) compared to less educated targets ($M = 3.30$), $F(1,379) = 0.38$, $p = .54$, $\eta_p^2 = .001$. By contrast, higher educated participants who were high in identification (1SD above the mean) saw highly educated targets as more similar to themselves ($M = 4.25$) than less educated targets ($M = 3.36$), $F(1,379) = 66.47$, $p < .001$, $\eta_p^2 = .15$. Identification had a weaker relation with the similarity judgments of the least educated. Participants without a secondary school diploma rated the less educated target as more similar to themselves regardless of whether they were low, Ms = 3.56 and 3.11, $F(1,379) = 8.71$, $p = .003$, $\eta_p^2 = .02$, or high in identification with their education group, Ms = 4.39 and 3.82, $F(1,379) = 5.21$, $p = .02$, $\eta_p^2 = .01$.

For liking, there was a two-way interaction between identification and target education, $F(1,380) = 8.37$, $p = .004$, $\eta_p^2 = .02$. Among low identifiers there was no education bias, $F(1,380) = 0.31$, $p = .58$, $\eta_p^2 = .001$. However, highly identified participants liked the higher educated target more ($M = 4.96$) than the lower educated target ($M = 4.75$), $F(1,380) = 10.11$, $p = .002$, $\eta_p^2 = .03$. Figure 2 shows that this pattern is more pronounced among higher educated participants, although the 3-way interaction with participant education is not significant, $p = .42$. This makes the pattern for ratings of liking very similar to that of the similarity ratings reported in the previous paragraph.

Figure 2: Liking of target individual: interaction between identification and target education, plotted separately for three educational groups (Study 3). Error bars are 95% CIs.



Although there was also a two-way interaction between ethnicity of the profile and identification both for similarity, $F(1,379) = 8.80$, $p = .003$, $\eta_p^2 = .02$, and for liking, $F(1,380) = 5.82$, $p = .02$, $\eta_p^2 = .02$, this is not relevant for the current paper because there was no interaction with participant education.

Discussion

Participants with a university degree showed educational intergroup bias in the liking of otherwise identical profiles of less and higher educated target individuals: they liked higher educated targets more than less educated targets. In contrast, the less educated did *not* show educational intergroup bias, even if they perceived themselves to be more similar to the less educated profiles, which was especially the

case for those without a secondary school diploma. The education bias of the higher educated therefore goes beyond mere similarity. Furthermore, the education bias is evident on a dimension (liking) that is not close to the status-defining dimension, so it is not simply a reflection of social reality (which could be said of the similarity ratings). The fact that the higher educated showed more intergroup bias than the less educated did is inconsistent with the notion that the higher educated engage in superior moral reasoning. In this particular intergroup context, higher educated people are more biased than their less educated counterparts.

Education bias among the higher educated was stronger for those who identified highly with other higher educated people; it was absent for those who identified less. Thus, education bias only occurs for those higher educated people for whom education is an important part of their identity. This is further evidence that these effects do not simply reflect social reality but are based in people's motivation to have a positive social identity (Tajfel & Turner, 1979).

The higher educated did not show significantly less anti-Muslim bias than the less educated did. This is not surprising, given that education effects on racial attitudes have been shown to be weaker when indirect measures are used (Kuppens & Spears, 2014).

Study 4

Study 4 is very similar to Study 3 but was run with U.S. rather than British participants. Studies 4a and 4b were run as independent studies with participants from Amazon Mechanical Turk. The main difference was that whereas Study 4a used the same Muslim and non-Muslim profiles as Study 3, in Study 4b we used profiles of Black and White people instead. We wanted to be able to generalize the findings to other ethnic minority groups, and Black people are one of the most visible ethnic

minority groups in the U.S. These are the same studies as those reported as Studies 3a and 3b in Kuppens et al. (2015).

Method

Participants. In Study 4a 420 MTurk workers (157 female, M_{age} = 30.7, SD_{age} = 11.1) completed an online questionnaire. Nineteen participants did not answer "Agree strongly" to the question "Please select the 'Agree strongly' answer" and a further 18 did not disagree with the item "I am an elephant and I live in Africa." These 37 inattentive participants were excluded from all analyses. A further five participants indicated they were Muslim and were excluded from analyses; 378 participants remained.

In Study 4b 532 MTurk workers (340 female, M_{age} = 34.7, SD_{age} = 12.4) completed an online questionnaire. Forty participants failed similar attention checks to those used in Study 4a and were excluded from analyses. A further 35 participants self-identified as African American and were also excluded; 457 participants remained.

Education bias and Muslim bias. In Study 4a the four profiles were identical to those used in Study 3, but we adapted them to a U.S. context. The names implying that the individual was Muslim or non-Muslim individuals were the same as in Study 3. Here is an example of a less educated non-Muslim individual: "William King is 30 years old and works as a convenience store clerk in the Northwest of the country. He lives alone in a rented apartment, but has many friends who visit him and is known to be very amusing. He has always lived in the Northwest and after getting a job in a shop and enjoying his time there, he decided to settle there. William is an avid basketball fan and player and regularly plays for a local team. His favorite hobby to pursue when he has time off work is going camping in the countryside."

In Study 4b the four profiles were identical to Study 4a, but we changed the typically Muslim names to typically Black names (Tyrone Banks and DeShawn Jefferson) and the non-Muslim names were now typically White names (Dylan Johnson and Bradley Smith).

For each individual, the same three questions as in Study 3 assessed liking (α = .88 for higher educated ethnic outgroup, α = .90 for less educated ethnic outgroup, α = .87 for higher educated ethnic in-group, and α = .88 for less educated ethnic in-group). Two new questions assessed perceived competence ("How competent do you think this person is?" and "How hard-working do you think this person is?") and they formed a reliable scale (*r*s = .78 for higher educated ethnic outgroup, .68 for less educated ethnic outgroup, .76 for higher educated ethnic in-group, and .65 for less educated ethnic in-group).

Salience of education. Participants were randomly assigned to the "Education salient" or the "Education not salient" condition and the manipulation was the same as in Study 3.

Education. Participants' highest educational level was recoded into three categories: High school or less (*n* = 100), Some college or 2-year degree (*n* = 309), and At least a 4-year college degree (*n* = 426).

Identification. We used the same identification scale as used in Study 1 (Leach et al., 2008), but now included all 14 items (α = .93).

Results

Analytic strategy. We conducted a mixed ANOVA, where liking and competence ratings were modeled as a function of the education of the target person, the ethnicity of the target person, participant education, education salience, and all interactions. However, because the participant education variable is not balanced

(does not have equal numbers in each category), main effects are estimated without the interaction term with participant education in the model.

Education bias, ethnic bias, and education level. In Study 4 we measured competence rather than similarity. We first discuss competence and then liking judgments. Unsurprisingly, higher educated targets (M = 4.89, SD = 0.87) were seen as more competent than less educated targets (M = 4.24, SD = 0.94), $F(1,832)$ = 419.72, $p < .001$, $\eta_p^2 = .34$. This large main effect was qualified by an interaction with participant education, $F(2,828) = 13.28$, $p < .001$, $\eta_p^2 = .03$: higher educated targets were evaluated as more competent, but this effect was stronger for the higher educated, $F(1,828) = 327.59$, $p < .001$, $\eta_p^2 = .28$ than for the intermediate educated, $F(1,828) = 115.74$, $p < .001$, $\eta_p^2 = .12$, or for the least educated group, $F(1,828)$ = 13.9253, $p < .001$, $\eta_p^2 = .02$. There was also an interaction between the ethnicity of the target and participant education, $F(2,828) = 3.92$, $p = .02$, $\eta_p^2 = .01$. Higher educated participants judged ethnic outgroups (M = 4.51, SD = 0.88) to be more competent than ethnic in-groups (M = 4.43, SD = 0.85), $F(1,828) = 4.25$, $p = .04$, η_p^2 = .005. This pattern was absent for the intermediate educated group, $F(1,828) = 0.05$, $p = .83$, $\eta_p^2 < .001$, and reversed for the least educated group, where ethnic outgroups were judged to be *less* competent (M = 4.65, SD = 1.03) than ethnic in-groups (M = 4.81, SD = 0.84), $F(1,828) = 3.97$, $p = .05$, $\eta_p^2 = .005$. In sum, higher educated participants show ethnic out-group bias and less educated participants show ethnic in-group bias in their competence ratings.

For liking judgments, consistent with the results of Study 3, higher educated targets were evaluated more positively than less educated targets, $F(1,833) = 26.42$, $p < .001$, $\eta_p^2 = .03$, but this main effect was qualified by an interaction with participant education, $F(2,829) = 5.67$, $p = .004$, $\eta_p^2 = .01$. Simple effects indicated that, as in

Study 3, higher educated participants liked the higher educated target more (M = 4.06, SD = 0.91) than the less educated target (M = 3.86, SD = 0.97), $F(1,829) = 29.73$, $p < .001$, $\eta_p^2 = .03$, but the least educated participants had similar liking for the higher educated (M = 3.94, SD = 1.17) and less educated (M = 4.02, SD = 1.17) targets, $F(1,829) = 1.09$, $p = .30$, $\eta_p^2 = .001$. As in Study 3, ethnic in-group individuals (M = 4.01, SD = 0.95) were liked more than ethnic outgroup individuals (M = 3.94, SD = 1.05), but this difference was not significant, $F(1,833) = 1.76$, $p = .18$, $\eta_p^2 = .002$. There was no significant interaction with participant education, $F(2,829) = 1.92$, $p = .15$, $\eta_p^2 = .005$, but, again as in Study 3, ethnic intergroup bias was highest among the least educated participants.

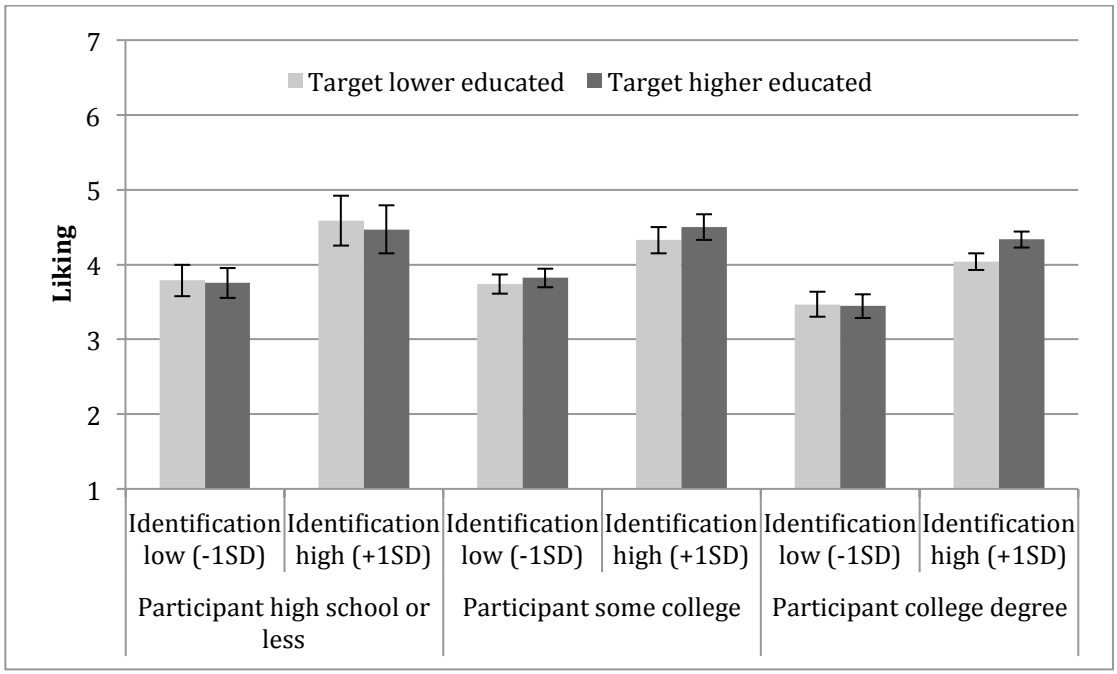
Education salience did not have any main or interaction effects.

Identification. We added identification to the previous model for competence judgments. There was a three-way interaction between identification, education of the target, and participant education, $F(2,822) = 3.78$, $p = .02$, $\eta_p^2 = .01$. Among higher educated participants, the highly identified (1SD above the mean) showed a stronger education bias in competence ratings ($F(1,822) = 262.55$, $p < .001$, $\eta_p^2 = .24$) than did the less identified (1SD below the mean, $F(1,822) =56.80$, $p < .001$, $\eta_p^2 = .06$). Among the less educated, all groups also evaluated the higher educated targets as more competent than the less educated targets (i.e., showing out-group bias). However, less educated participants who highly identified with their education group showed less education out-group bias ($F(1,822) = 1.72$, $p = .19$, $\eta_p^2 = .002$) in competence ratings than did their counterparts who identified less highly ($F(1,822) = 16.23$, $p < .001$, $\eta_p^2 = .02$).

For liking judgments there was the same three-way interaction between identification, education of the profile, and participant education, $F(2,823) = 3.70$, $p =$

.03, η_p^2 = .01 (see Figure 3). Among low identifiers there was no education bias among higher educated ($F(1,823) = 0.13$, $p = .02$, $p = .72$, $\eta_p^2 < .001$), intermediate educated ($F(1,823) = 2.53$, $p = .11$, $\eta_p^2 = .003$), or lowly educated participants ($F(1,823) = 0.15$, $p = .70$, $\eta_p^2 < .001$). However, higher educated participants who identified highly liked the higher educated target more ($M = 4.34$) than the less educated target ($M = 4.04$), $F(1,823) = 44.95$, $p < .001$, $\eta_p^2 = .05$. This effect was smaller for the intermediate educated group, *M*s = 4.50 and 4.33, $F(1,823) = 5.80$, $p = .02$, $\eta_p^2 = .007$, and absent for the least educated group, *M*s = 4.47 and 4.59, for higher and less educated target respectively, $F(1,823) = 0.79$, $p = .38$, $\eta_p^2 = .001$.

Figure 3: Liking of target individual: interaction between target education, participant education, and identification (Study 4). Error bars are 95% CIs.



Discussion

Results replicated those from Study 3. Higher educated participants showed education intergroup bias in their liking of otherwise identical individuals, liking

higher educated targets more than lower educated targets. Less educated participants did not show education intergroup bias. Intergroup bias was more pronounced for higher educated participants who identified highly with people who have a similar level of education as their own, compared to those who identified less highly.

That the higher educated show more intergroup bias than the less educated do (Studies 2-4), is inconsistent with the supposed moral enlightenment of the higher educated. If intelligence or sophisticated moral reasoning were responsible for the often-reported tolerance of the higher educated, then this should also apply to attitudes towards the less educated. Instead, the higher educated show clear and strong intergroup bias and the less educated do not. In fact, given their vulnerable and low-status position the *less* educated could benefit most from showing intergroup bias. Usually low-status groups indeed show more intergroup bias than high-status groups do, especially when judgments are made on a dimension other than the status-defining dimension (Mullen et al., 1992), as is the case in all our studies. This is because they have more to gain from such intergroup bias (Scheepers, Spears, Doosje, & Manstead, 2006a). In contrast, the less educated do not show intergroup bias at all, and this adds to previous research that already found that the less educated have great difficulty in creating a positive identity (Kuppens et al, 2015).

Regarding competence, higher educated individuals were perceived as much more competent than less educated individuals by both highly educated and less highly educated participants. This is not surprising given that perceived competence is part of the status-defining dimension. The effect of education on competence was stronger among higher educated participants, especially among those who identified highly with their level of education. Among the least educated participants who identified highly with their level of education, the out-group bias in competence

ratings was small and not statistically significant. This is consistent with a previous study (Spruyt & Kuppens, 2015b) in which similar effects of identification and participant education on explicit self-report ratings of the competence of less educated and higher educated people were found.

Whereas higher educated participants showed intergroup bias with respect to lower educated groups and the less educated did not, the reverse was the case for *ethnic* intergroup bias in competence: Less educated participants evaluated the ethnic in-group more positively than the ethnic out-group but the higher educated evaluated the out-group more positively than the in-group. For liking, there was a non-significant trend for less educated participants to show more bias than higher educated participants. The same trend was found in Study 3 and when the data from Studies 3 and 4 are pooled, the interaction between target ethnicity and participant education is significant, $F(1, 1215) = 4.15$, $p = .02$, $\eta_p^2 = .01$; the least educated participants like ethnic in-group members more ($M = 4.33$) than ethnic out-group members ($M = 4.06$), $F(1, 1215) = 17.58$, $p < .001$, $\eta_p^2 = .01$, and there is no bias among the intermediate or higher educated group (both *p*s > .09).

Thus, although the least educated appear to be more prejudiced towards the classic targets of prejudice compared to those who are more highly educated, a noteworthy point is that for the higher educated prejudice toward the lower educated seems to be *acceptable*, whereas it is not for the classical targets. In short, it seems that the claim that the lower educated are more prejudiced is only part of the story. It is rather that the targets of prejudice are different. Indeed, the inability of the less educated to show intergroup bias on the education dimension, due to reality constraints, fits with notions of prejudice displaced to other target groups (Glick, 2008; Leach & Spears, 2008) in order to achieve a positive social identity (Tajfel &

Turner, 1979), although investigating this issue is beyond the scope of the current paper.

In four studies we have shown that participants who are relatively high on the education ladder, and especially those who identify with their education group, show medium to large education intergroup bias, both on a self-report and on a more indirect measure. In Studies 5, 6, and 7 we investigate possible reasons underlying this education intergroup bias. Our main interest lies in the perceived responsibility for educational outcomes. Attribution of responsibility (Weiner, 1995; see Weiner et al., 1988) is very important for education-based groups. As explained earlier, educational achievement is often seen as the consequence of individual effort. The implied role of individual responsibility is a factor that distinguishes the less educated from many other disadvantaged groups, and is what sets them apart from other groups with low socio-economic status. By comparison with being poor or working class, having a low level of education might be more likely to be perceived as something that individuals could have avoided. Moreover, the increased importance of education for life outcomes may have led to an increased perception that existing socio-economic differences are based on merit. In other words, the role of perceived responsibility for being less educated may have consequences that extend far beyond the evaluation of less educated people. We address this in Study 5 and develop it further in Studies 6-7.

Study 5

In this study we aimed to examine the possibility that attributional differences underlie the education intergroup bias observed in Studies 1-4. Specifically, we asked about the importance of talent, hard work, and luck for being successful in an academic versus a professional context. We expected that academic achievement

would be seen as due more to hard work and less to luck, in comparison with professional achievement. We expected the less educated to at least partly endorse this meritocratic view of academic achievement.

An important advantage of Study 5 is that it uses a sample that is representative of the population. This means that any differences found between higher and lower educated participants are representative of the differences in the general population.

Method

Participants. The sample of 1575 respondents is representative for the population aged 18-75 in Flanders (the Northern part of Belgium) and is described in detail in De Keere, Vandebroeck, and Spruyt (2015). The sample used in the current analysis is somewhat smaller due to missing values on the education variable (n = 55) and the attribution questions (up to n = 106).

Attributions. Six questions about attributions to talent, hard work, and luck were asked regarding academic achievement and professional achievement. For example, a question about the importance of hard work read "Anyone can get a degree if they work hard enough" for academic achievement and "Anyone can be successful in their job if they work hard enough" for professional achievement. A question about the importance of luck read "Getting a degree strongly depends on coincidence" for academic achievement and "Being successful professionally strongly depends on coincidence" for professional achievement. All items were answered on a scale from 1 (= "Completely disagree") to 5 (= "Completely agree"). The two items assessing talent (r = .46 and r = .45 for academic and professional achievement, respectively), hard work (r = .48 and r = .39 for academic and professional achievement, respectively), and luck (r = .42 and r = .30 for academic and

professional achievement, respectively) were averaged. There were also some questions about attributions to structural factors (i.e., the labor market or schools), to people's family situation, to globalization, and to new technologies, but these were less relevant here. The survey also contained a wide range of measures not relevant to attributions for success.

Results

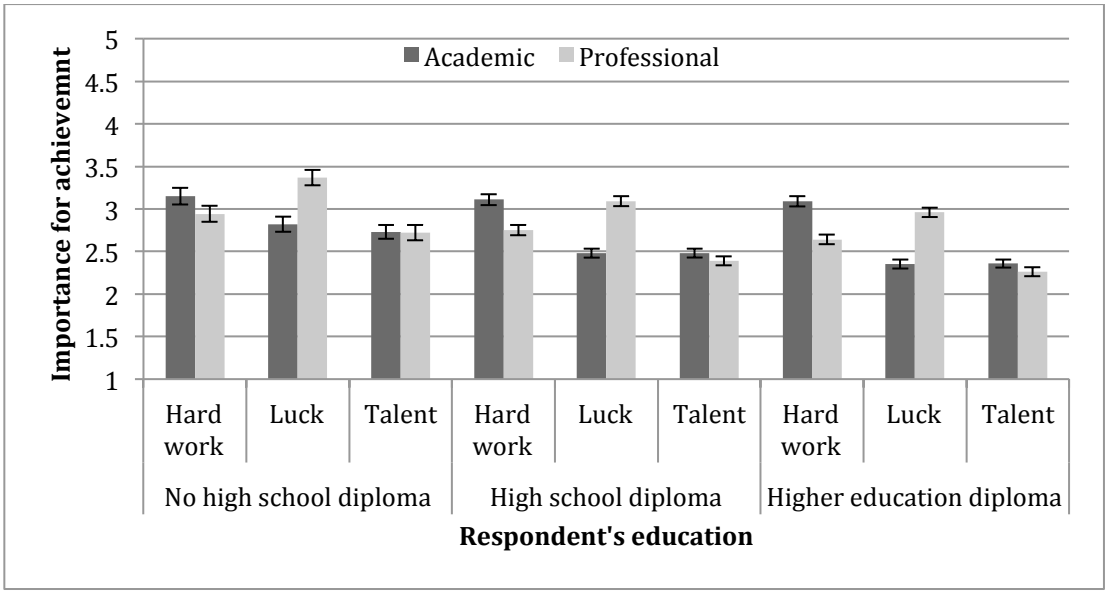
Analytic strategy. We estimated separate models for talent, hard work, and luck as dependent variables, and therefore applied a Bonferroni correction to control for multiple testing, by considering effects to be statistically significant when their p-value is .0167 or smaller. Predictors were the domain of achievement (academic versus professional), the education level of the respondents, and their interaction.

Academic versus professional achievement. As expected, respondents believed that academic achievement was less due to luck, $F(1, 1426) = 665.65$, $p < .001$, $\eta_p^2 = .32$, and more due to hard work, $F(1, 1433) = 183.92$, $p < .001$, $\eta_p^2 = .11$, compared to professional achievement (see Figure 4). Talent was also seen as more important for academic than professional success, $F(1, 1438) = 11.32$, $p < .001$, $\eta_p^2 = .01$), although this effect was much smaller than those for hard work or luck.

Respondent's education. Main effects of education ($\eta_p^2 = .01$, .07, and .06 for hard work, luck, and talent, respectively) showed that the less educated tended to agree more with all items. More interestingly, there was an interaction between domain and respondent education for hard work, $F(2, 1433) = 6.82$, $p = .001$, $\eta_p^2 = .01$, but not for talent, $F(2, 1438) = 1.45$, $p = .24$, $\eta_p^2 = .002$, or luck, $F(2, 1426) = 0.44$, $p = .64$, $\eta_p^2 = .001$ (see Figure 4). The fact that hard work was seen as more important for academic compared to professional achievement was less pronounced among the least educated respondents compared to other respondents. However, even

the least educated respondents found hard work more important for academic (*M* = 3.15) than for professional achievement (*M* = 2.94), 95% CI for the difference [.10, .32].

Figure 4: Importance of hard work, luck, and talent for academic and professional achievement (Study 5). Error bars are 95% CIs.



Discussion

In a sample representative of the adult population, academic success was attributed more to hard work and less to luck, compared to professional achievement. This highlights a possible reason for the negative attitudes toward less educated people (found in Studies 1-4).

Interestingly, results were quite similar for higher educated and less educated respondents. Although differences in attributions to hard work were less pronounced among less educated participants, even the least educated clearly found hard work more important for academic than for professional achievement. Our use of a representative sample means that these results for respondent's education cannot be

attributed to a different selection process of higher versus lower educated participants. In other words, this is good evidence that the less educated do not seem to contest the legitimacy attached to their low educational status.

The possible difference in the attribution of responsibility to the less educated as compared to other disadvantaged groups is addressed in more detail in Studies 6 and 7. In Study 5 we found initial evidence that educational achievement carries more attributions of responsibility than professional achievement does. In Studies 6-7 we measure attributions about and emotions towards a range of disadvantaged groups.

Study 6

In Study 6 we investigated further the factors underlying the negative evaluation of the less educated. We used the attribution-emotion model (Weiner et al., 1988), according to which attributions about why people have ended up in a adverse situation shape our emotional reactions (primarily anger and pity) and behavioral intentions towards them.

Specifically, if people's adversity is caused by external factors, we are likely to feel pity and help them. However, to the extent that people are perceived to be responsible for a stigma or low achievement, this evokes emotional reactions of anger rather than pity, and decreases willingness to help them (Weiner, 1995; Weiner et al., 1988). Here we apply this framework to disadvantaged groups. In previous research guided by this model (Dijker & Koomen, 2003; Weiner, 1995; Weiner et al., 1988) participants typically evaluated one particular individual; here we focus on evaluations of social groups.

We assessed attributions, emotions, and attitudes about government intervention related to less educated people, and compared these to the same evaluations of other disadvantaged groups. Attitudes toward government intervention

are relevant because they assess a general inclination that might feed into specific political or policy preferences. The poor are an important comparison group because it is also a group with low socio-economic status but a different status dimension defines the group (i.e., income rather than education). Socio-economic disadvantage has many dimensions but, as we argued earlier, education has become more important in recent decades. We expect the less educated to be evaluated more negatively than the poor on all dependent variables because lack of education is likely to be seen by many as a controllable factor, and therefore as something for which the less educated can be blamed. Thus, we expect the less educated to be seen as more responsible, to be less likely to be perceived as being treated unfairly, and to elicit less positive and more negative emotions, compared to the poor. We expect that this will also lead to less favorable attitudes towards helping the less educated through government intervention.

Obese people were selected as another comparison group because they are another stigmatized group that is often blamed for its own disadvantage (Crandall et al., 2001; Wirtz, van der Pligt, & Doosje, 2015). For attributions of responsibility, we therefore expect both less educated people and obese people to attract higher ratings than the other groups.

Blind people, the fourth group we included, are usually not seen as accountable for their situation so should score low on responsibility. Finally, people of Turkish descent living in Western Europe are one of the most visible low-status ethnic minority groups for our participants. We expected at least some acknowledgment of discrimination against Turks, because this is sometimes reported in the media and is a topic of ongoing political debate. Therefore, we expect that less

educated people are less likely to be perceived as victims of discrimination compared to Turkish people (as well as compared to poor people).

Liking is the only variable that is similar to the dependent variables of Studies 1-4. Given the results in those studies, we expected the less educated to be liked less than the other disadvantaged groups.

Method

Participants. We recruited 75 student participants (42 women, age *M* = 21.6, *SD* = 2.7) at the University of Groningen. Five participants were excluded from analyses because they were not from European Union countries. Most remaining participants were either Dutch (n = 36) or German (n = 31).

Procedure. After giving demographic information, participants completed measures of Social Dominance Orientation (SDO) and authoritarianism.[7] They then responded to the attributions, emotions, and behavior questions for the five disadvantaged groups (less educated, poor, blind, Turks, obese). Order of the groups was randomized. At the end there were some questions about the participant's own educational career.

Attributions. Two items were about the group's responsibility: "To what extent are [group] responsible for the fact that they are [group]?" (with a 7-point response scale from "Not at all responsible" to "Entirely responsible) and "To what extent can [group] be blamed for their situation?" (with a 7-point response scale from "Not at all" to "Completely"). To measure perceived discrimination and treatment in

[7] SDO was measured using six items (α = .75) from the SDO scale (Pratto, Sidanius, Stallworth, & Malle, 1994). To measure authoritarianism (α = .84) we used eight items from Duckitt (2010) and two from Zakrisson (2005). Results for these measures are reported in the supplemental online material (Tables S5-S8).

society we asked "To what extent are [group] treated unfairly by others?" (with a 7-point response scale from "Not at all unfairly" to "Very unfairly") and "To what extent does society value [group]?" (with a 7-point response scale from "Not at all" to "Very much").

Emotions. We measured the emotions pity (pity, feel sorry for, $r = .72$), anger (anger, irritation, resentment, $\alpha = .84$), sympathy, contempt, and how much participants liked the group (all on 11-point scales from 0 = "Not at all" to 10 = Extremely").

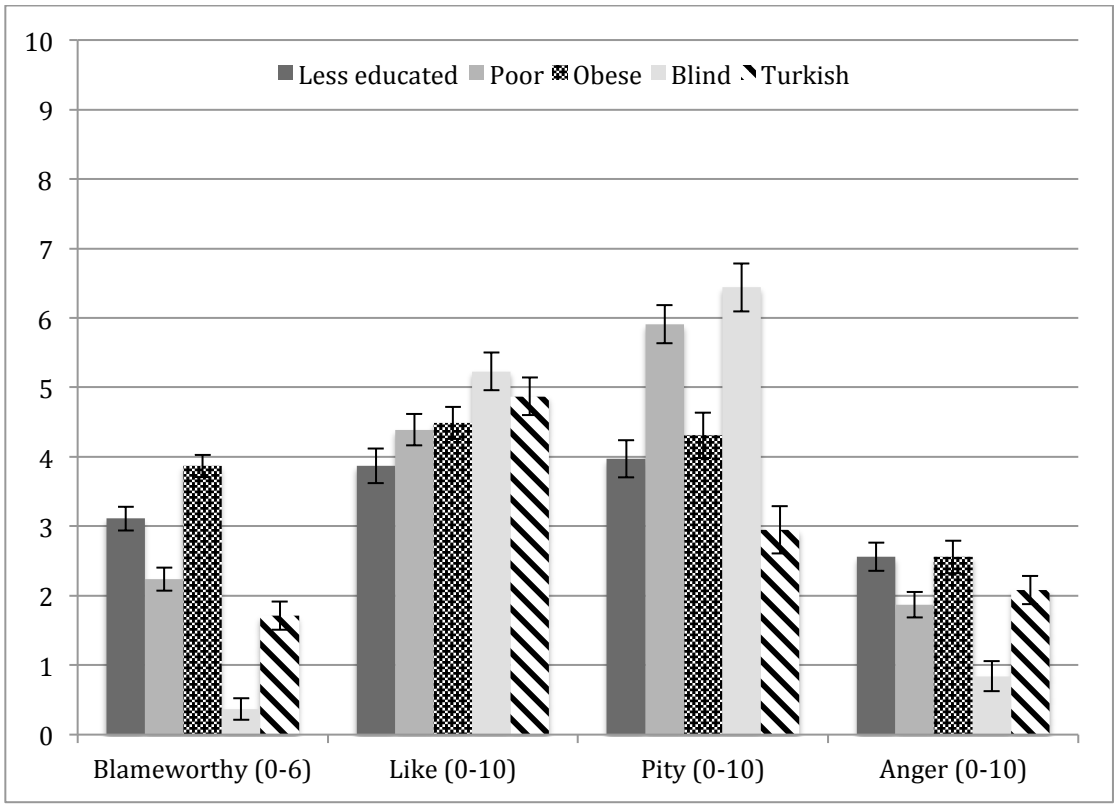
Government intervention. We asked whether the government should help a particular group ("Do you think [group] should be helped by the government to improve their situation?," rated on a 7-point scale from 0 = "No help" to 6 = "A lot of help") and whether participants thought that helping would improve the group's situation ("If the government provided help to [group], would that be likely to improve their situation?," rated on a 7-point scale from "Very unlikely" to "Very likely").

Results

Analytic strategy. We used multilevel modeling to analyze these data because ratings of groups (level-1 units) were nested within individual participants (level-2 units). The model controlled for the correlations between the ratings of all groups and possible differences in variances between the groups by fitting an unstructured covariance matrix. Comparisons between groups are investigated using planned contrasts. We specified the contrasts so that unstandardized coefficients (the *b*s reported below) reflect the difference in means between two groups. They can therefore be interpreted directly as unstandardized effect sizes (and the standard errors that we report allow the calculation of confidence intervals).

Overall patterns of attributions. We used planned contrasts to test the predictions that we developed in the introduction to Study 6. As predicted, less educated people and obese people were together judged to be more responsible, b = 2.10, SE = .12, p < .001, and blameworthy, b = 2.04, SE = .11, p < .001, compared to the three other groups combined (see Figure 5, and Table S4 in the supplemental material for all means). However, the less educated were unexpectedly seen as less responsible, b = -0.91, SE = .16, p < .001, and less blameworthy, b = -0.72, SE = .16, p < .001, than obese people. Blind people were seen as less responsible, b = -1.47, SE = .13, p < .001, and blameworthy, b = -1.71, SE = .13, p < .001, than poor and Turkish people combined.

Figure 5: Blameworthiness, liking, pity, and anger in relation to five disadvantaged groups (Study 6). Error bars are Cousineau-Morey 95% CIs that allow within-subject comparisons between the five groups.



In line with our predictions, the less educated were perceived as being treated unfairly less often than poor and Turkish people (combined), b = -0.81, SE = .15, p < .001. Finally, the less educated were liked less than any other group (all four mean differences > .50 and ps < .031).

These results for attributions and liking are in line with our hypotheses. The results for liking confirm the results of Studies 1-4 showing that higher educated people do not like less educated people. We now turn to a more specific comparison between less educated people and the poor.

Comparison of the less educated with the poor. For all variables the less educated attracted significantly more negative scores than the poor: They were seen as more responsible (b = .89, SE = .17, p < .001), blameworthy (b = .87, SE = .17, p < .001), and less unfairly treated (b = -.54, SE = .17, p = .002); they were liked less (b = -.51, SE = .23, p = .03); they elicited much less sympathy (b = -1.76, SE = .22, p < .001), much less pity (b = -1.94, SE = .26, p < .001), more anger (b = .69, SE = .19, p < .001), and more contempt (b = .61, SE = .23, p = .009); and they were seen as less deserving of government help (b = -.76, SE = .16, p < .001). As expected, socio-economic disadvantage in term of education was judged more negatively than socio-economic disadvantage in terms of wealth.

Finally, we tested whether differences in liking of and emotions towards the less educated versus the poor were mediated by differences in attributions. We tested mediation by examining the joint significance of the IV to mediator path and the mediator to DV path (Fritz, Taylor, & MacKinnon, 2012; Hayes & Scharkow, 2013; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). A confidence interval around the indirect effect estimate was calculated with PRODCLIN (MacKinnon,

Fritz, Williams, & Lockwood, 2007; Tofighi & MacKinnon, 2011). The results are presented in Table 3. We did this by estimating regression models in which responsibility, blameworthiness, and perceived unfair treatment were simultaneously entered as possible mediators of the difference between less educated and poor on liking, pity, anger, sympathy, and contempt. The unstandardized coefficients and associated standard errors for all paths in the mediation models are reported in Table 3. Consistent with Weiner (1988), the effect of group (less educated versus poor) on anger (see Figure 6) was mediated by responsibility (indirect effect = .32, 95% CI = [0.08, 0.60]); the corresponding effect on pity was mediated by perceived unfair treatment (indirect effect = -.31, 95% CI = [-0.61, -0.09]). Lower sympathy towards the less educated was mediated by judgments of greater blameworthiness for the less educated compared to the poor (indirect effect = -.40, 95% CI = [-0.81, -0.06]). The lower liking of the less educated compared to the poor (see Figure 7) was mediated by the higher perceived responsibility of the less educated (indirect effect = -.31, 95% CI = [-0.68, -0.001]) and a lower level of perceived unfair treatment against the less educated, compared to the poor (indirect effect = -.15, 95% CI = [-0.36, 0.01]). It should be noted, however that the relations between the mediators and liking were only marginally significant, *p*s < .08.

Table 3: Unstandardized coefficients (and standard errors below) for the mediation models where the difference between the less educated and the poor in liking and emotions is mediated by the attributions (Study 6).

	Dependent variable				
	Pity	Anger	Sympathy	Contempt	Liking
IV to mediator (a)					
Responsible	.89***	.89***	.89***	.89***	.89***
	(.17)	(.17)	(.17)	(.17)	(.17)
Blameworthy	.87***	.87***	.87***	.87***	.87***
	(.17)	(.17)	(.17)	(.17)	(.17)

Unfairly treated	-.54**	-.54**	-.54**	-.54**	-.54**
	(.17)	(.17)	(.17)	(.17)	(.17)
Mediator to DV (b)					
Responsible	-.09	.36**	.13	.20	-.35†
	(.19)	(.13)	(.18)	(.18)	(.18)
Blameworthy	-.05	.08	-.46*	.13	.01
	(.22)	(.14)	(.20)	(.20)	(.20)
Unfairly treated	.58***	-.02	.18	.06	.27†
	(.16)	(.11)	(.15)	(.15)	(.15)
Total effect (c)	-1.94***	.69***	-1.76***	.61**	-.51*
	(.26)	(.19)	(.22)	(.23)	(.23)
Direct effect (c')	-1.50***	.29	-1.37***	.36	-.07
	(.29)	(.20)	(.26)	(.26)	(.26)
Indirect effect (ab)					
Responsible	-0.08	0.32**	0.11	0.18	-0.31†
Blameworthy	-0.04	0.07	-0.40*	0.11	0.01
Unfairly treated	-0.31**	0.01	-0.10	-0.03	-0.15†

Note. The coefficients related to the IV (a, c, c', and ab paths) can be read as mean differences between less educated and working class. IV=independent variable. DV=dependent variable. *** $p < .001$. ** $p < .01$. * $p < .05$. † $p < .10$.

Figure 6: Mediation of the difference in anger towards less educated versus the poor, by attributions (Study 6). Parameters are unstandardized regression coefficients (and standard errors).

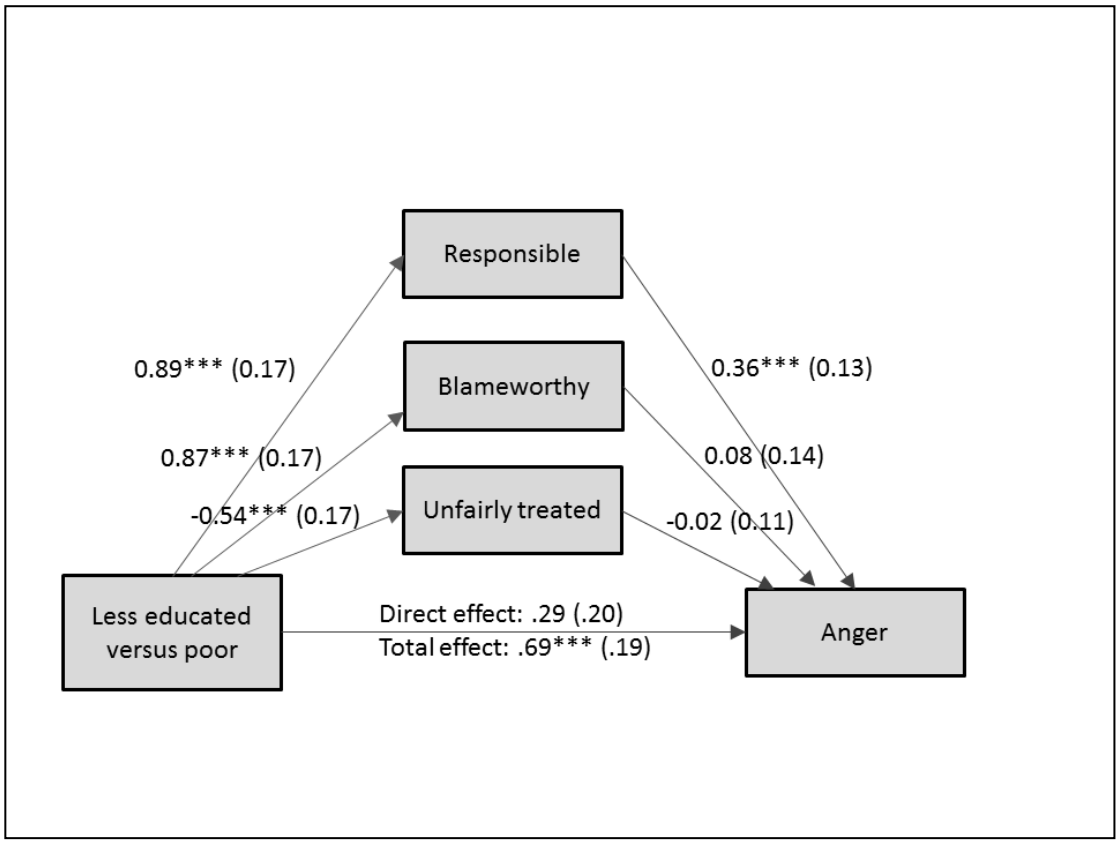
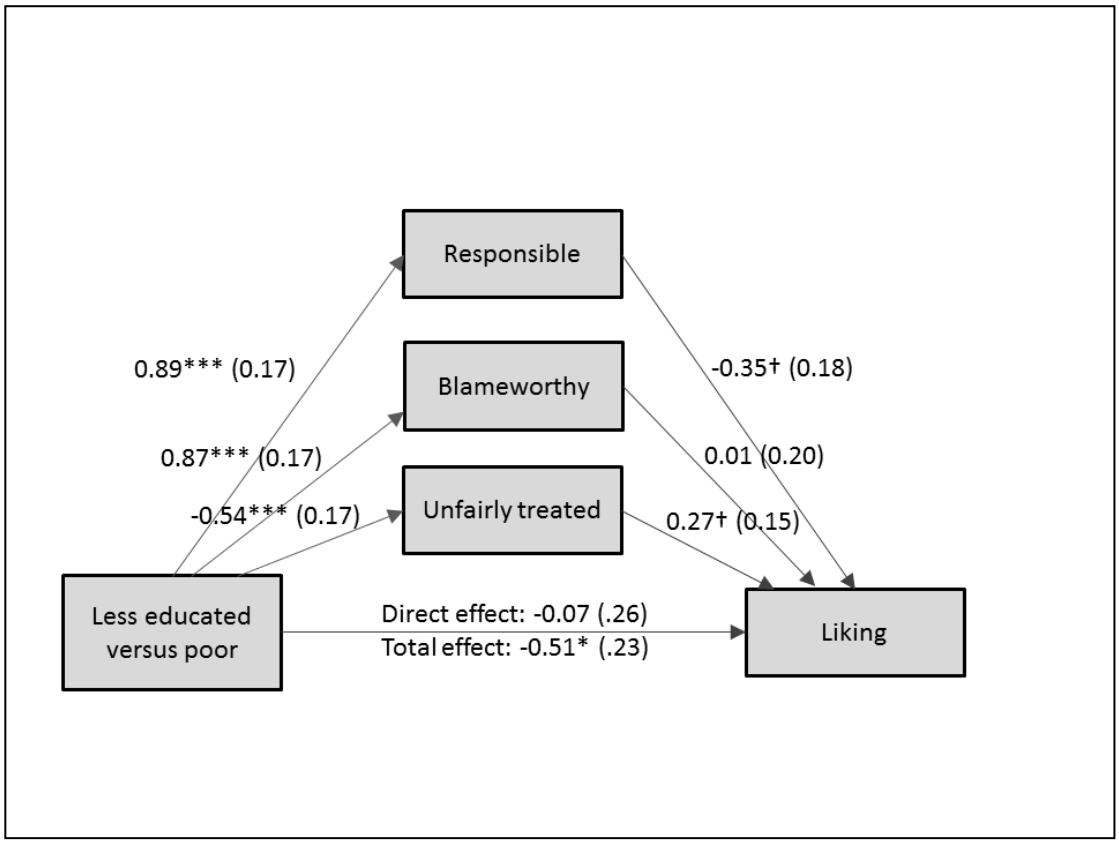


Figure 7: Mediation of the difference in liking between the less educated and the poor, by attributions (Study 6). Parameters are unstandardized regression coefficients (and standard errors).



Discussion

Less educated people were seen as more responsible and blameworthy than poor people, and as less unfairly treated. These differences mediated the lower liking of the less educated and the stronger anger felt towards the less educated, compared to the poor. They also mediated the lesser pity and sympathy felt for the less educated compared to the poor. For pity and sympathy, a large direct effect of group remained after taking into account the mediators. This might be due to the fact that poverty more directly implies suffering, which could elicit pity and sympathy.

The broader implication of these findings is that it matters how low socio-economic status groups are characterized. Describing them in terms of their education level leads to more negative evaluations than describing them in terms of their income. At a societal level, the increased importance of education (Grusky & DiPrete, 1990) and the suggestion that education is a universal social problem solver (Depaepe & Smeyers, 2008) may increase the risk that groups with low levels of socio-economic status will be especially negatively evaluated while strengthening the ideology of meritocracy. We investigate this idea more directly in Study 7, where we include measures of meritocratic ideology.

Study 7

Study 7 was similar to Study 6 but was conducted in the U.S. and included some important changes. First, we replaced 'the poor' with 'the working class' in order to have a comparison with a different low socio-economic status group. We also replaced Turkish with Black people to adapt to the U.S. context, and dropped the blind as a target group. Our predictions were similar to those for Study 6. We expected the less educated and the obese to be seen as more responsible and blameworthy than the other groups. Furthermore, we expected less educated people to be seen as less unfairly treated than Black people and working class people. We also expected the less educated to be liked less than other groups. Importantly, in the comparison with the working class, we expected the less educated to be evaluated more negatively on all dependent variables.

We added measures of meritocratic ideology in order to investigate the extent to which the results of Study 6 reflect ideological beliefs about inequality. Measuring meritocratic ideology enables us to relate ideological beliefs to processes of attribution and emotions regarding the less educated. Because those who believe in

meritocracy assume that people get what they deserve, we expected that meritocracy beliefs would be related positively to judgments of responsibility and blameworthiness, and negatively to perceptions of unfairness and deservingness of help.

We also measured the extent to which participants thought they deserved their own level of educational achievement and had had to work hard for it. People who thought that they had to work hard to obtain their educational qualification might be more likely to think that educational differences are fair. Similarly, believing that your own educational achievement was mainly due to hard work is likely to be related to meritocratic ideology and to judgments of responsibility for educational outcomes.

To investigate the construct validity of our measures of attributions, emotions, and liking of the less educated, we added a self-report measure of bias against lower educated people. We predicted that this *self-reported education bias* would be related to evaluations of the less educated, especially the measure of liking.

A final change is that we recruited a diverse sample. Doing so enabled us to investigate (as in Study 5) the extent to which the lower educated also make negative attributions and feel negative emotions about those with low levels of education.

Method

Participants. We recruited 290 MTurk workers (129 women, age $M = 35.9$, $SD = 11.9$). Nine participants did not disagree with the attention check question "Seven plus five equals twenty-nine". A further two participants did not answer "Agree strongly" to the question "Please select 'agree strongly' for this item." These 11 inattentive participants were excluded from analyses.

Procedure. After giving demographic information, participants completed measures of Social Dominance Orientation (SDO) and authoritarianism.[8] They then responded to the attributions, emotions, and behavior questions for the four disadvantaged groups (less educated, working class, Blacks, obese). Order of presentation of the groups was randomized. Finally, participants completed the meritocracy scales and responded to questions about their own educational career.

Attributions. Items assessing responsibility and blameworthiness were the same as those used in Study 6. To measure perceived discrimination, we asked "To what extent are [group] treated unfairly by [others]?" For the item about less educated people, these "others" were "higher educated people," for working class they were "middle and upper class people," for obese they were "non-obese people", and for Black people we used "people from other races." The 7-point response scale for these items was anchored at 0 (= "Not at all unfairly") and 6 (= "Very unfairly"). We also added a measure of perceived suffering: "How much do [group] suffer due to their situation?" Responses were given on a 7-point scale from 0 (= "Do not suffer at all") to 6 (= "Suffer very much").

Emotions. We measured the emotions pity (pity, feel sorry for, r = .78), anger (anger, irritation, resentment, α = .90), sympathy, contempt, and how much participants liked the group in the same way as in Study 6.

Help. Attitudes towards helping were measured with the item "Do you think [group] deserve help to improve their situation?" Responses were given on a 7-point scale from 0 (= "No help") to 6 (= "A lot of help").

---

[8] We used the same scales for SDO (α = .88) and authoritarianism (α = .89) as in Study 6. Results for these scales are reported in the supplemental material (Tables S10-S14).

Meritocracy measures. We included measures of individual mobility (4 items, $\alpha = .84$) (McCoy & Major, 2007), protestant work ethic (5 items, $\alpha = .91$) (Quinn & Crocker, 1999), and belief in a just world (8 items, $\alpha = .94$) (Lipkus, Dalbert, & Siegler, 1996). Because the three measures correlated highly (all *r*s > .67), we constructed a single meritocracy scale ($\alpha = .88$).

Education. Participants' highest educational level was recoded into three categories: High school or less ($n = 35$), Some college or 2-year degree ($n = 112$), and At least a 4-year college degree ($n = 131$).

Identification. We assessed participants' identification with their educational group using 11 items ($\alpha = .94$) from Leach et al. (2008), excluding the in-group homogeneity subscale and the item "I often think about the fact that I am [education group]".

Own education difficulty. Two items (e.g., "I have had to make big efforts for my education", $r = .73$) assessed how difficult participants thought their own educational achievements had been.

Own education merit. Two items (e.g., "What I have achieved in my education is mostly due to my own effort", $r = .65$) assessed the extent to which participants thought their own educational achievements were due to their own effort and qualities.

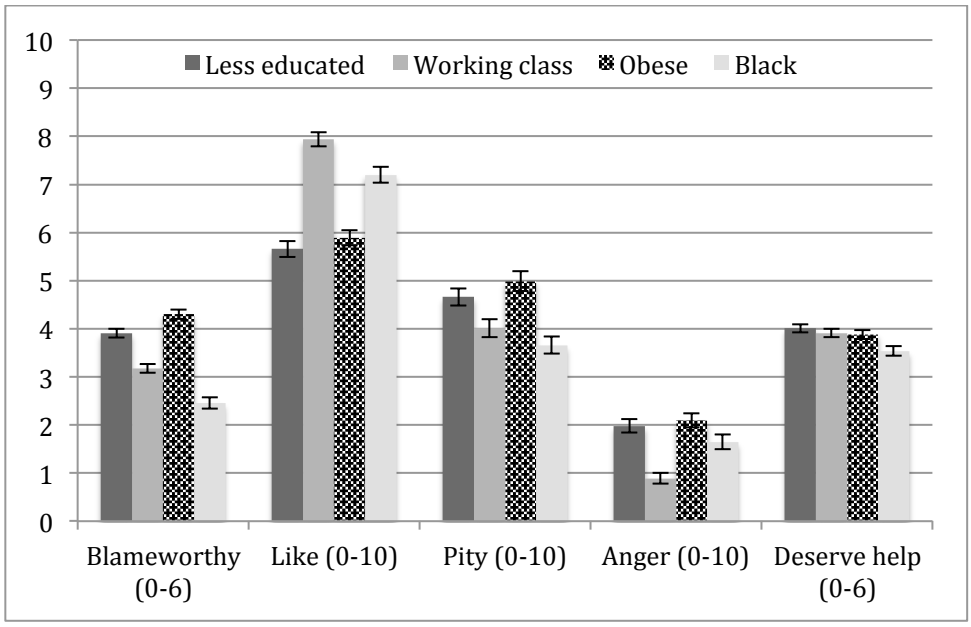
Self-reported education bias. We formulated six items ($\alpha = .87$) to measure the extent to which participants reported preferring higher over lower educated persons. Example items are "I think less of someone when they haven't finished their education," and "I evaluate less and higher educated people in the same way" (reverse-coded).

Results

The same model as that used in Study 6 was used to analyze the data.

Overall patterns of attributions. As predicted, less educated and obese people were together judged to be more responsible, $b = 1.49$, $SE = .07$, $p < .001$, and blameworthy, $b = 1.15$, $SE = .08$, $p < .001$, compared to the other groups combined (see Figure 8, and Table S9 in the supplemental material for all means). However, as in Study 6, the less educated were seen as less responsible, $b = -0.47$, $SE = .09$, $p < .001$, and less blameworthy, $b = -0.38$, $SE = .09$, $p < .001$, than obese people. None of these effects were qualified by a significant interaction with participant education (all *p*s > .06).

Figure 8: Blameworthiness, liking, pity, anger, and deservingness of help in relation with four disadvantaged groups (Study 7). Error bars are Cousineau-Morey 95% CIs that allow within-subject comparisons between the four groups.



For perceptions of unfair treatment there were only very small differences between groups and no main or interaction effects of education. In contrast to expectations and the results of Study 6, the less educated were not perceived as being

treated unfairly significantly less than working class and Black people (combined), $b = -0.07$, $SE = .09$, $p = .46$.

The less educated were liked less than Blacks, $b = -2.28$, $SE = .16$, $p < .001$, and the working class, $b = -1.54$, $SE = .18$, $p < .001$, but not significantly less than the obese, $b = -0.24$, $SE = .16$, $p = .13$. In line with the results of Studies 1-4 and Study 6, this again illustrates that the less educated are not liked.

Comparison of less educated with working class people. In Study 6, the comparison of less educated and poor people showed that less educated people were evaluated more negatively than the poor on *all* variables. Here we compare the less educated with the working class, and we also take participant education into account.

For some outcome variables, there was only an effect of group (less educated versus working class) but no main effect or interaction with participant education. The less educated were seen as more responsible ($b = .43$, $SE = .09$, $p < .001$) than working class people. They were also liked much less ($b = -2.28$, $SE = .16$, $p < .001$) and elicited more anger ($b = 1.09$, $SE = .12$, $p < .001$). Unexpectedly, the less educated were perceived to suffer more ($b = 0.76$, $SE = .10$, $p < .001$), and elicited more pity ($b = 0.65$, $SE = .19$, $p < .001$), but less sympathy ($b = -0.30$, $SE = .21$, $p = .16$) than the working class. This contrasts somewhat with Study 6, where more pity was reported towards the poor than the less educated. We return to this point in the Discussion.

There were interactions between group (less educated versus working class) and participant education for blameworthiness, $F\ (2,275) = 4.76$, $p = .009$, and contempt, $F\ (2,275) = 3.46$, $p = .03$. All education groups blamed the less educated more than the working class, but surprisingly the effect size was larger for participants with only a high school diploma ($\Delta M = 1.29$, $SE = .26$, $p < .001$) than for

those with a 4-year degree ($\Delta M = 0.46$, $SE = .13$, $p < .001$), with the intermediate educated group taking an intermediate position ($\Delta M = 0.87$, $SE = .15$, $p < .001$). In other words, those with less education were the ones who blamed the group of less educated people most, showing a striking internalization of negative opinions about their group. Higher educated participants felt more contempt for the less educated than for the working class ($\Delta M = 0.83$, $SE = .20$, $p < .001$), an effect that was smaller for the intermediate educated group ($\Delta M = 0.63$, $SE = .22$, $p = .004$) and reversed, albeit non-significantly so, for the least educated group of participants ($\Delta M = -0.31$, $SE = .39$, $p = .42$). Finally, there were no effects of group or participant education on perceived unfair treatment, sympathy, or deservingness of help (all *p*s > .15).

In sum, and as expected, socio-economic disadvantage in terms of education was judged more negatively than socio-economic disadvantage in terms of occupation. Overall, this pattern did not differ much between participants with lower or higher levels of education.

As in Study 6, we tested whether differences in liking of and emotions towards the less educated versus the working class were mediated by differences in attributions. We estimated regression models in which responsibility, blameworthiness, unfair treatment, and suffering were simultaneously entered as possible mediators of the difference between less educated and working class people on liking, pity, and anger. Responsibility and blameworthiness correlated highly ($r = .81$) and were therefore averaged and added as a single mediator to the models. The stronger pity towards the less educated (compared to the working class) was mediated by the fact that the lower educated were perceived as suffering more than the working class, indirect effect = .62, 95% CI [0.42, 0.83] (see Table 4). The stronger anger towards the less educated was mediated by increased perceptions of responsibility,

indirect effect = .14, 95% CI [0.07, 0.22], and suffering, indirect effect = .16, 95% CI [0.07, 0.26]. However, the lower liking of the less educated was not mediated by perceptions of responsibility, unfair treatment, or suffering.

Table 4: Differences between perceptions of the less educated and the working class. Unstandardized coefficients (and standard errors) for the mediation models where the difference in liking and emotions is mediated by perceptions of responsibility, unfair treatment, and suffering (Study 7).

	Dependent variable		
	Pity	Anger	Liking
IV to mediator (a)			
Responsible	0.58***	0.58***	0.58***
	(0.09)	(0.09)	(0.09)
Unfairly treated	0.03	0.03	0.03
	(0.10)	(0.10)	(0.10)
Suffer	0.76***	0.76***	0.76***
	(0.10)	(0.10)	(0.10)
Mediator to DV (b)			
Responsible	-0.14	0.24***	0.01
	(0.08)	(0.05)	(0.08)
Unfairly treated	0.41***	-0.04	0.16*
	(0.08)	(0.05)	(0.07)
Suffer	0.81***	0.21***	-0.002
	(0.08)	(0.06)	(0.08)
Total effect (c)	0.65***	1.09***	-2.28***
	(0.19)	(0.12)	(0.16)
Direct effect (c')	0.10	0.79***	-2.29***
	(0.18)	(0.12)	(0.18)
Indirect effect (ab)			

Responsible	-0.08	0.14***	0.01
Unfairly treated	0.01	-0.001	0.01
Suffer	0.62***	0.16***	-0.002

Note: The coefficients related to the IV (a, c, c', and ab paths) can be read as mean differences between less educated and working class. IV=independent variable. DV=dependent variable. *** $p < .001$. * $p < .05$.

Beliefs about meritocracy, own education, and education bias. As expected, meritocracy beliefs were strongly related to attributions of responsibility ($r = .47$, $p < .001$) and blameworthiness ($r = .48$, $p < .001$) in relation to the less educated, and this was the case regardless of participants' own educational group. Meritocracy beliefs were related to a similar degree to attributions of responsibility and blameworthiness for the other four disadvantaged groups (see Table S10 in the supplemental material). This is consistent with the fact that meritocratic beliefs include beliefs that people deserve their own outcomes.

Meritocracy beliefs were also moderately negatively related to judgments of unfair treatment ($r = -.34$, $p < .001$), suffering ($r = -.21$, $p < .001$), and deservingness of help ($r = -.35$, $p < .001$) in relation to the less educated, and this was similar when working class people and obese people were the target group. However, these relations were stronger in relation to Black people (all *r*s > .53, see Tables S11-S12 in the supplemental material). With respect to emotions, meritocracy beliefs were related to less sympathy ($r = -.23$, $p < .001$) and less pity ($r = -.19$, $p = .001$) towards the less educated. Again, correlations were similar for working class people and obese people, but stronger in relation to Black people (see Tables S12-S14 in supplemental material). Thus, apart from the responsibility and blameworthiness ratings, meritocracy beliefs were especially related to attributions, emotions, and

liking with regard to Black people compared to the three other disadvantaged groups we investigated.

Turning to participants' beliefs about their own educational achievement, we found that internal attributions for own achievement and difficulty of own achievement were both positively related to judgments of responsibility (r = .23 and .14, respectively, ps < .05) and blameworthiness (r = .27 and .13, respectively, ps < .05) in relation to the less educated. Meritocracy beliefs were also related to internal attributions for participants' own achievement, r = .31, p < .001, but not to difficulty of own achievement, r = .10, p = .11. Although these correlational data do not warrant strong conclusions, they suggest that people's own experiences in the educational system might predispose them to perceive others as being responsible for their educational outcomes. Note, however, that these relations are similar for the other three target groups, so further research is needed to clarify the direction of causal processes involved in these relations.

Overall, self-reported education bias was low, with a mean of 1.85 (SD = 1.36) on a 0 to 6 scale. Nevertheless, 24.1 percent of participants scored at or above the midpoint of the scale, which is remarkable given the blatantly discriminatory nature of the items. As predicted, self-reported education bias was positively related to anger (r = .44, p < .001) and contempt (r = .29, p < .001) felt towards the less educated, and negatively related to liking of the less educated (r = -.47, p < .001). As well as showing that education bias is expressed openly, this demonstrates convergent validity for the emotion measures used in Studies 6-7.

None of the above relations regarding meritocracy beliefs, participants' own educational achievement, and self-reported education bias were moderated by participant education. We did find that higher educated participants showed more

education bias, $F(2,271) = 3.89$, $p = .02$, and felt they had had to work harder for their educational achievement, $F(2,272) = 6.01$, $p = .003$, compared to less educated participants (the mean of the intermediate educated group fell between those of the other groups).

Discussion

Compared to the working class, the less educated were perceived to be more responsible and more blameworthy, they elicited more anger, and they were liked less. In sum and as predicted, less educated people were evaluated more negatively than other groups with low socio-economic status.

In Study 6, the poor elicited much more pity than the less educated did, but in the current study the working class elicited *less* pity than the less educated did. The high level of pity towards the poor found in Study 6 probably has more to do with the inherent suffering associated with being poor than with something specific about less educated people. Participants in the current study seemed to acknowledge that the less educated suffer more than the working class, and they felt more pity—but not more *sympathy*—for the less educated, compared to the working class. The greater pity felt towards the less educated compared to the working class should not be interpreted positively because the higher educated also felt more contempt for the less educated, compared to the working class. The pity felt towards the less educated therefore seems to reflect the negative, patronizing side of pity rather than its positive side (Florian, Mikulincer, & Hirschberger, 2000; Nadler, Harpaz-Gorodeisky, & Ben-David, 2009).

Interestingly, there were few differences between the perceptions of less and more highly educated participants. However, these similar responses represent very different psychological perspectives between these two groups: The more highly

educated showed out-group derogation whereas the less educated showed *in-group* derogation. Lower educated participants also judged the less educated to be more responsible for their situation. To a large extent, therefore, lower educated people endorse the negative evaluations that are made about them. Indeed, the one moderation by participant education that we did find was that lower educated participants blamed less educated people to an even greater extent than higher educated people did. Bearing in mind that our sample of people with no more than a high school degree was modest in size, we conclude that there are no indications that less educated people resist the negative attributions made about them and even seem to internalize them. This interpretation is rendered more plausible by the consistent results observed in Study 5, which used a representative sample (albeit from a different country).

Meritocracy beliefs were strongly related to making internal attributions for the situation of disadvantaged groups, including less educated people. Given that the less educated are seen as particularly blameworthy for their own situation, this suggests a link between the ideology of meritocracy and people's opinions about educational inequality.

General Discussion

Across seven studies we (1) reported the first evidence of education-based intergroup bias, (2) showed that, contrary to popular ideas, the higher educated show more education intergroup bias than do the less educated, (3) found that less educated people are evaluated more negatively than the poor or the working class, two other groups with low socioeconomic status, and (4) argued and demonstrated that perceived personal responsibility for one's educational level plays an important role in evaluations of less educated people.

Regarding education bias, Studies 1-2 showed that higher educated people show strong education-based intergroup bias on a feeling thermometer: They feel much warmer towards highly educated people than towards their less highly educated counterparts. In Studies 3-4 higher educated participants evaluated otherwise identical target individuals more positively when they were more highly educated rather than less highly educated. This education bias among the higher educated was stronger for those who identified strongly with the group of higher educated people, implying that social identity processes are operating. In contrast, less educated participants did not show such education-based intergroup bias (but they did show more ethnic intergroup bias). In Studies 5-7 we went beyond studying evaluation and found that the less educated are seen as responsible and blameworthy for their situation, even by the less educated themselves. Importantly, the less educated are liked less and are seen as more blameworthy than poor people and working class people, two other groups defined by low socioeconomic status.

Are the higher educated more tolerant?

These findings appear to be at odds with the moral enlightenment hypothesis, which states that higher educated people show less negative attitudes towards out-groups because they have superior moral reasoning. First, in Studies 3-4 the higher educated showed more education-based intergroup bias than did the less educated when we used indirect measures of bias. Second, in Study 7 the higher educated had higher explicit self-reported education bias than did the less educated. Such findings are incompatible with the idea that the superior moral reasoning of the higher educated prevents them from forming negative opinions about out-groups. At the very least, this particular intergroup relation (i.e., attitudes toward less educated)

constitutes an exception, one for which the moral enlightenment idea cannot provide an explanation.

Similar to the case of the higher educated, political liberals in the U.S. were also thought to be more tolerant than political conservatives (Farwell & Weiner, 2000; Sears & Henry, 2003). However, recent evidence shows that they are not more tolerant, but rather are intolerant of different groups than conservatives are. Both liberals and conservatives are intolerant of groups with whom they perceive an ideological worldview conflict (Brandt, Reyna, Chambers, Crawford, & Wetherell, 2014; Crawford, 2014). In this light it is important to note that the higher educated are not in a direct worldview conflict with the less educated. They might of course have values or political views that are, on average, different from those of the less educated, but being less educated does not directly entail such views and therefore cannot be an explanation for our results. Indeed, if anything the lower educated reinforce the privileged position of the higher educated, rather than being in conflict with it. Interestingly, a recent longitudinal study also found that enlightenment is an unlikely explanation for the effect of education on social liberalism (Surridge, 2016). Future research should investigate whether education-based groups are the only exception to the rule of tolerance among the higher educated. This would enable us to reach more definite conclusions about the moral enlightenment hypothesis and the nature of the education effect on traditional forms of prejudice.

In our studies there was always an explicit reference to the educational level of the target person or group. How likely is it that we will see similar effects when education is not explicitly mentioned, for example in day-to-day social interactions? We know that people are able to judge another's social background from observing brief social interactions (Kraus & Keltner, 2009), and that this can influence their

interactions with others (Kraus, Horberg, Goetz, & Keltner, 2011; Kraus, Park, & Tan, 2017). These processes likely exist for the more specific case of educational background as well. Therefore, the attitudes toward education-based groups that we investigated here potentially affect many social interactions.

Intergroup bias among the less educated

In contrast to the higher educated, the less educated do *not* show education-based intergroup bias. This is noteworthy because the less educated could actually benefit most from intergroup bias. Intergroup bias is instrumental for low-status groups because it is part of a process of social change (Scheepers et al., 2006a), and intergroup bias is indeed common among low-status groups (Mullen et al., 1992). So, education-based intergroup bias is not merely another demonstration of the existence of intergroup bias, but it reveals that the less educated stand out because they are a low-status group that does *not* evaluate their own group more positively than an out-group. This adds to other evidence that the less educated occupy a very special and vulnerable psychological position (Kuppens et al, 2015), which is often reinforced through societal institutions (Bourdieu & Passeron, 1990; Depaepe & Smeyers, 2008; Labaree, 2008; Meyer, 1977; Stephens, Markus, & Phillips, 2014).

Regarding classic targets of prejudice, such as Muslims and Blacks, we did find evidence of more intergroup bias among the less educated than among the higher educated in Studies 3-4. However, this relation was weak, which may be partly due to the indirect measure used in those studies (see also Kuppens & Spears, 2014).

A comprehensive explanation for these findings regarding education bias and ethnic bias might be found in social identity theory (Tajfel & Turner, 1979). Education bias can be safely used by the higher educated to construct a positive social identity because higher education is both positive and legitimate. This is supported

by our finding that identification is related to higher education bias among the higher educated. For the less educated it is difficult to use their educational level to attain a positive identity. Therefore, denigrating out-groups such as ethnic minorities might be an attempt by the less educated to use another dimension (i.e., ethnicity) to distinguish themselves positively. As noted earlier, this fits with the idea of displaced prejudice (Glick, 2008; Leach & Spears, 2008).

Education-based groups and social inequality

These results have important consequences for the changing nature of social inequality, and citizens' attitudes towards inequality. Given the increased importance of education for many life outcomes, education has become a key aspect of social inequality in recent decades. The attributions associated with high and low educational levels may therefore have changed the way that people view social inequality. If education is regarded as being an individual's own responsibility, then people are likely to be less critical of social inequality that stems from differences in education. Relatedly, more highly educated high-status groups can use references to education as a means to justify and legitimize their position. If educational outcomes are seen as largely deserved, then their consequence are, too. Michael Young (1958) (sarcastically) coined the term 'meritocracy' to refer to a dystopian future society in which power and status was believed to fairly reflect differences in intelligence and education. He predicted that this would lead to strong and initially uncontested social inequality, and a negative view of those with lower levels of education. Our evidence suggests that his warning was correct. Ironically, his term 'meritocracy' is now generally used in an uncritically positive way (Young, 2001).

Emphasizing the importance of education could therefore be the last bastion of acceptable prejudice among the higher educated (see also Jackman, 1994).

Remember that across Studies 6 and 7 the obese were seen as even more responsible and blameworthy than the less educated, but the less educated were still liked slightly less than the obese. This could reflect a vested interest on the part of the higher educated to denigrate the lower educated, which does not exist in the case of the obese. With respect to the denigration of the less educated it is important to note, as we did in the Introduction, that there is a wealth of evidence that educational achievement is not simply the result of talent and hard work (e.g., Bukodi et al., 2014). This means that negative attitudes toward the less educated cannot be justified in terms of the greater merit of those with higher education.

In Studies 5-7 we made use of Weiner's attribution-emotion model to gain insight into the bases of these negative attitudes towards the less educated. Results showed that perceived responsibility was high for the less educated, but there could of course be other judgment dimensions that set the less educated apart from other social groups. Differences in liking between the less educated and the poor/working class were not always fully explained by the attributions (such as responsibility) that we assessed. One question for future research is therefore what these remaining differences in liking are based on.

Theoretically our work extends Weiner's attribution model to explanations for intergroup differences and integrates with research on group-based emotions as explanations of prejudice towards social groups. The results also provide some support for what Pettigrew (1979) termed the "ultimate attribution error," whereby groups are blamed for negative outcomes but also given credit for positive outcomes (in the current context, the higher educated regard themselves as responsible for their own educational level). However, the present research goes beyond simply defining a new area of application for these ideas, in the sense that it focuses on a target group,

the lower educated, that has thus far gone unnoticed as a victim of prejudice, and identifies an unlikely perpetrator group, the higher educated. We argue that this particular combination of an overlooked target group and an overlooked perpetrator group represents a lacuna in the literature that needs to be explained. We believe that the lack of attention to education-based groups until now has served to justify social inequality, although we do not wish to undermine the efforts of those who have focused on groups (based on ethnicity, gender, age) that are now acknowledged to be unacceptable targets of prejudice and discrimination. We argue that the key social psychological theories of intergroup inequality (relative deprivation theory, social identity theory, resource mobilization theory, social dominance theory, system justification theory) need to accord educational intergroup bias more theoretical scrutiny if they are to provide a full account of how social inequality persists and is reproduced.

Why has the topic of education-based groups been neglected?

Scholars are almost by definition highly educated. No human being is free from biases in judgment or attitudes, so it is likely that the lack of attention paid to educational groups is partly due to the fact that the less educated have no ready means of defending themselves in academic research and literature. Sexism, racism, and other forms of prejudice in the social sciences have been contested by scholars belonging to groups on the receiving end of these types of prejudice and discrimination. In the case of education, however, this is not possible. Less educated people are almost by definition excluded from the business of conducting research. If you are reading this, you are almost certainly highly educated yourself. In other words, it is possible that the issue of prejudice towards education-based groups has not been studied because scholars all belong to the advantaged group.

One could argue that the economy needs (highly) skilled workers, and that it is therefore unavoidable that a positive value is accorded to education. While this is obviously correct, it does not alter the fact that from a psychological point of view, the study of education-based groups is long overdue (see also Spruyt & Kuppens, 2015a) and should yield theoretical as well as practical knowledge that, in the longer term, could improve the well-being of the less educated.

Acknowledgements

We would like to thank Namkje Koudenburg, Maja Kutlaca, Jolien van Breen, Bibiana Armenta Gutiérrez, Justin Richardson, Babet LeKander-Kanis, and Simon Dalley for their helpful comments on an earlier draft of this paper.

Open practices

The research in this article earned Open Materials and Open Data badges for transparent practices. Materials and data for the research are available at https://osf.io/v6a8x.

References

Aronson, E., Wilson, T. D., & Akert, R. M. (2013). *Social psychology* (Eighth ed.). Upper Saddle River, NJ: Pearson Education.

Autin, F., Batruch, A., & Butera, F. (2016). The function of selection of assessment leads evaluators to artificially create the social class achievement gap. *Manuscript Submitted for Publication*.

Baguley, T. (2012). Calculating and graphing within-subject confidence intervals for ANOVA. *Behavior Research Methods*, *44*(1), 158–175. http://doi.org/10.3758/s13428-011-0123-7

Bourdieu, P., & Passeron, J.-C. (1990). *Reproduction in education, society and culture*. London: Sage.

Brandt, M. J., Reyna, C., Chambers, J. R., Crawford, J. T., & Wetherell, G. (2014). The ideological-conflict hypothesis: Intolerance among both liberals and conservatives. *Current Directions in Psychological Science*, *23*(1), 27–34. http://doi.org/10.1177/0963721413510932

Bukodi, E., Erikson, R., & Goldthorpe, J. H. (2014). The effects of social origins and cognitive ability on educational attainment: Evidence from Britain and Sweden. *Acta Sociologica*, *57*(4), 293–310. http://doi.org/10.1177/0001699314543803

Bukodi, E., Goldthorpe, J. H., Waller, L., & Kuha, J. (2015). The mobility problem in Britain: new findings from the analysis of birth cohort data. *The British Journal of Sociology*, *66*, 93–117. http://doi.org/10.1111/1468-4446.12096

Carvacho, H., Zick, A., Haye, A., González, R., Manzi, J., Kocik, C., & Bertl, M. (2013). On the relation between social class and prejudice: The roles of education, income, and ideological attitudes. *European Journal of Social Psychology*, *43*(4), 272–285. http://doi.org/10.1002/ejsp.1961

Crandall, C. S., D'Anello, S., Sakalli, N., Lazarus, E., Nejtardt, G. W., & Feather, N. T. (2001). An attribution-value model of prejudice: Anti-fat attitudes in six nations. *Personality and Social Psychology Bulletin*, *27*(1), 30–37. http://doi.org/10.1177/0146167201271003

Crawford, J. T. (2014). Ideological symmetries and asymmetries in political intolerance and prejudice toward political activist groups. *Journal of Experimental Social Psychology*, *55*, 284–298. http://doi.org/http://dx.doi.org/10.1016/j.jesp.2014.08.002

Cuddy, A. J. C., Fiske, S. T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: The stereotype content model and the BIAS map. *Advances in Experimental Social Psychology*, *40*, 61–149.

Damian, R. I., Su, R., Shanahan, M., Trautwein, U., & Roberts, B. W. (2014). Can personality traits and intelligence compensate for background disadvantage? Predicting status attainment in adulthood. *Journal of Personality and Social Psychology*, *109*, 473–489. http://doi.org/10.1037/pspp0000024

De Keere, K., Vandebroeck, D., & Spruyt, B. (2015). *Technical report OMM 2013. Survey on attitudes regarding self and society*. Brussels, Belgium. Retrieved from www.vub.ac.be/TOR/publications

Deary, I. J., Batty, G. D., & Gale, C. R. (2008). Bright children become enlightened adults. *Psychological Science*, *19*(1), 1–6. http://doi.org/10.1111/j.1467-9280.2008.02036.x

Depaepe, M., & Smeyers, P. (2008). Educationalization as an ongoing modernization process. *Educational Theory*, *58*(4), 379–389.

Dijker, A. J., & Koomen, W. (2003). Extending Weiner's attribution-emotion model of stigmatization of ill persons. *Basic & Applied Social Psychology*, *25*(1), 51–

68.

Duckitt, J., Bizumic, B., Krauss, S. W., & Heled, E. (2010). A tripartite approach to right-wing authoritarianism: The authoritarianism-conservatism-traditionalism model. *Political Psychology*, *31*(5), 685–715. http://doi.org/10.1111/j.1467-9221.2010.00781.x

Easterbrook, M. J., Kuppens, T., & Manstead, A. S. R. (2016). The education effect: Higher educational qualifications are robustly associated with beneficial personal and socio-political outcomes. *Social Indicators Research*, *126*, 1261–1298. http://doi.org/10.1007/s11205-015-0946-1

Farwell, L., & Weiner, B. (2000). Bleeding hearts and the heartless: Popular perceptions of liberal and conservative ideologies. *Personality and Social Psychology Bulletin*, *26*(7), 845–852. http://doi.org/10.1177/0146167200269009

Featherman, D. L., & Hauser, R. M. (1976). Sexual inequalities and socioeconomic achievement in the U.S., 1962-1973. *American Sociological Review*, *41*(3), 462–483. http://doi.org/10.2307/2094254

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878.

Florian, V., Mikulincer, M., & Hirschberger, G. (2000). The anatomy of a problematic emotion: The conceptualization and measurement of the experience of pity. *Imagination, Cognition and Personality*, *19*(1), 3–25. http://doi.org/10.2190/4JG9-M79P-HJYK-AQNE

Fritz, M. S., Taylor, A. B., & MacKinnon, D. P. (2012). Explanation of two anomalous results in statistical mediation analysis. *Multivariate Behavioral*

Research, *47*(1), 61–87. http://doi.org/10.1080/00273171.2012.640596

Glick, P. (2008). When neighbors blame neighbors: Scapegoating and the breakdown of ethnic relations. In V. M. Esses & R. A. Vernon (Eds.), *Explaining the breakdown of ethnic relations* (pp. 123–146). Blackwell.

Goodwin, M., & Heath, O. (2016). *Brexit vote explained: Poverty, low skills and lack of opportunities*. York, UK. Retrieved from https://www.jrf.org.uk/report/brexit-vote-explained-poverty-low-skills-and-lack-opportunities

Grusky, D., & DiPrete, T. (1990). Recent trends in the process of stratification. *Demography*, *27*(4), 617–637. http://doi.org/10.2307/2061574

Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychological Science*, *24*, 1918–1927. http://doi.org/10.1177/0956797613480187

Hewstone, M., Stroebe, W., & Jonas, K. (2012). *An introduction to social psychology* (Fifth ed.). Chichester, UK: BPS Blackwell.

Hogg, M. A., & Vaughan, G. M. (2008). *Social psychology* (Fifth). Harlow, England: Pearson Education.

Jackman, M. R. (1994). *The velvet glove: Paternalism and conflict in gender, class, and race relations*. Berkeley, CA: University of California Press.

Jackman, M. R., & Crane, M. (1986). "Some of my best friends are black. . .": Interracial friendship and Whites' racial attitudes. *Public Opinion Quarterly*, *50*(4), 459.

Jackman, M. R., & Muha, M. J. (1984). Education and intergroup attitudes: Moral enlightenment, superficial democratic commitment, or ideological refinement? *American Sociological Review*, *49*, 751–769.

JASP Team. (2017). JASP (Version 0.8.1.2).

Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, *33*(1), 1–27. http://doi.org/10.1111/j.2044-8309.1994.tb01008.x

Kraus, M. W., Horberg, E. J., Goetz, J. L., & Keltner, D. (2011). Social class rank, threat vigilance, and hostile reactivity. *Personality and Social Psychology Bulletin*, *37*(10), 1376–1388. http://doi.org/10.1177/0146167211410987

Kraus, M. W., & Keltner, D. (2009). Signs of socioeconomic status: A thin-slicing approach. *Psychological Science*, *20*(1), 99–106.

Kraus, M. W., Park, J. W., & Tan, J. J. X. (2017). Signs of social class: The experience of economic inequality in everyday life. *Perspectives on Psychological Science*, 12, 422-435.

Kuppens, T., Easterbrook, M. J., Spears, R., & Manstead, A. S. R. (2015). Life at both ends of the ladder: Education-based identification and its association with well-being and social attitudes. *Personality and Social Psychology Bulletin*, *41*, 1260–1275.

Kuppens, T., & Spears, R. (2014). You don't have to be well-educated to be an aversive racist, but it helps. *Social Science Research*, *45*, 211–223. http://doi.org/10.1016/j.ssresearch.2014.01.006

Labaree, D. F. (2008). The winning ways of a losing strategy: Educationalizing social problems in the United States. *Educational Theory*, *58*(4), 447–460.

Leach, C. W., & Spears, R. (2008). "A vengefulness of the impotent": The pain of in-group inferiority and schadenfreude toward successful out-groups. *Journal of Personality and Social Psychology*, *95*(6), 1383–1396.

Leach, C. W., van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F.,

Doosje, B., … Spears, R. (2008). Group-level self-definition and self-investment: A hierarchical (multicomponent) model of in-group identification. *Journal of Personality and Social Psychology*, *95*(1), 144–165.

Lipkus, I. M., Dalbert, C., & Siegler, I. C. (1996). The importance of distinguishing the belief in a just world for self versus for others: Implications for psychological well-being. *Personality and Social Psychology Bulletin*, *22*(7), 666–677.

Lipset, S. M. (1959). Democracy and working-class authoritarianism. *American Sociological Review*, *24*(4), 482–501.

Livingstone, A. G., Sweetman, J., Bracht, E. M. V. A. M., & Haslam, S. A. (2015). "We have no quarrel with you": Effects of group status on characterizations of "conflict" with an outgroup. *European Journal of Social Psychology*, *26*, 16–26. http://doi.org/10.1002/ejsp.2062

MacKinnon, D. P., Fritz, M. S., Williams, J., & Lockwood, C. M. (2007). Distribution of the product confidence limits for the indirect effect: Program PRODCLIN. *Behavior Research Methods*, *39*, 384–389.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, *7*(1), 83–104.

Marmot, M., Ryff, C. D., Bumpass, L. L., Shipley, M., & Marks, N. F. (1997). Social inequalities in health: Next questions and converging evidence. *Social Science & Medicine*, *44*(6), 901–910. http://doi.org/10.1016/S0277-9536(96)00194-3

Marmot, M., & Wilkinson, R. G. (2005). *Social determinants of health* (Second). Oxford: Oxford University Press.

McCoy, S. K., & Major, B. (2007). Priming meritocracy and the psychological justification of inequality. *Journal of Experimental Social Psychology*, *43*(3),

341–351. http://doi.org/http://dx.doi.org/10.1016/j.jesp.2006.04.009

Meyer, J. W. (1977). The effects of education as an institution. *American Journal of Sociology*, *83*(1), 55–77.

Mullen, B., Brown, R., & Smith, C. (1992). Ingroup bias as a function of salience, relevance, and status: An integration. *European Journal of Social Psychology*, *22*(2), 103–122. http://doi.org/10.1002/ejsp.2420220202

Nadler, A., Harpaz-Gorodeisky, G., & Ben-David, Y. (2009). Defensive helping: Threat to group identity, ingroup identification, status stability, and common group identity as determinants of intergroup help-giving. *Journal of Personality and Social Psychology*, *97*(5), 823–834. http://doi.org/doi: DOI: 10.1037/a0015968

OECD. (2013). *PISA 2012 results: Excellence through equity: Giving every student the chance to succeed (Volume II)*. Paris.

Pettigrew, T. F. (1979). The ultimate attribution error: Extending Allport's cognitive analysis of prejudice. *Personality and Social Psychology Bulletin*, *5*(4), 461–476. http://doi.org/10.1177/014616727900500407

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, *67*, 741–763.

Quinn, D. M., & Crocker, J. (1999). When ideology hurts: effects of belief in the protestant ethic and feeling overweight on the psychological well-being of women. *Journal of Personality and Social Psychology*, *77*(2), 402–414. http://doi.org/10.1037/0022-3514.77.2.402

Rouder, J. N., Morey, R. D., Speckman, P. L., & Province, J. M. (2012). Default Bayes factors for ANOVA designs. *Journal of Mathematical Psychology*, *56*(5),

356–374. http://doi.org/http://dx.doi.org/10.1016/j.jmp.2012.08.001

Scheepers, D., Spears, R., Doosje, B., & Manstead, A. S. R. (2006a). Diversity in ingroup bias: Structural factors, situational features, and social functions. *Journal of Personality and Social Psychology*, *90*(944–960).

Scheepers, D., Spears, R., Doosje, B., & Manstead, A. S. R. (2006b). The social functions of ingroup bias: Creating, confirming, or changing social reality. *European Review of Social Psychology*, *17*, 359–396. http://doi.org/10.1080/10463280601088773

Schoon, I., Cheng, H., Gale, C. R., Batty, G. D., & Deary, I. J. (2010). Social status, cognitive ability, and educational attainment as predictors of liberal social attitudes and political trust. *Intelligence*, *38*(1), 144–150. http://doi.org/10.1016/j.intell.2009.09.005

Sears, D. O., & Henry, P. J. (2003). The origins of symbolic racism. *Journal of Personality and Social Psychology*, *85*(2), 259–275. http://doi.org/10.1037/0022-3514.85.2.259

Smeding, A., Darnon, C., Souchal, C., Toczek-Capelle, M.-C., & Butera, F. (2013). Reducing the socio-economic status achievement gap at university by promoting mastery-oriented assessment. *PLoS ONE*, *8*(8), e71678. http://doi.org/10.1371/journal.pone.0071678

Spears, R., Doosje, B., & Ellemers, N. (1999). Commitment and the context of social perception. In N. Ellemers, R. Spears, & B. Doosje (Eds.), *Social identity: Context, commitment, content* (pp. 59–83). Oxford, UK: Blackwell.

Spruyt, B. (2014). An asymmetric group relation? An investigation into public perceptions of education-based groups and the support for populism. *Acta Politica*, *49*(2), 123–143. http://doi.org/10.1057/ap.2013.9

Spruyt, B., & Kuppens, T. (2015a). Education based thinking and behaving? Towards an identity perspective for studying education differentials in public opinion and political participation. *European Journal of Cultural and Political Sociology*, *2*, 291–312. http://doi.org/10.1080/23254823.2016.1150689

Spruyt, B., & Kuppens, T. (2015b). Warm, cold, competent or incompetent? An empirical assessment of public perceptions of the higher and less educated. *Current Sociology*, *63*(7), 1058–1077. http://doi.org/10.1177/0011392114554843

Stember, C. H. (1961). *Education and attitude change*. New York: Institute of human relations.

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: how American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of Personality and Social Psychology*, *102*(6), 1178.

Stephens, N. M., Markus, H. R., & Phillips, L. T. (2014). Social class culture cycles: How three gateway contexts shape selves and fuel inequality. *Annual Review of Psychology*, *65*(1), 611–634. http://doi.org/doi:10.1146/annurev-psych-010213-115143

Stephens, N. M., Townsend, S. S. M., Markus, H. R., & Phillips, L. T. (2012). A cultural mismatch: Independent cultural norms produce greater increases in cortisol and more negative emotions among first-generation college students. *Journal of Experimental Social Psychology*, *48*(6), 1389–1393. http://doi.org/10.1016/j.jesp.2012.07.008

Stouffer, S. A. (1955). *Communism, conformity, and civil liberties: A cross-section of the nation speaks its mind*. New York: Doubleday & Company.

Stubager, R. (2009). Education-based group identity and consciousness in the

authoritarian-libertarian value conflict. *European Journal of Political Research*, *48*, 204–233.

Surridge, P. (2016). Education and liberalism: pursuing the link. *Oxford Review of Education*, *4985*(March), 1–19. http://doi.org/10.1080/03054985.2016.1151408

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole Publishing Company.

Tofighi, D., & MacKinnon, D. P. (2011). RMediation: An R package for mediation analysis confidence intervals. *Behavior Research Methods*, *43*(3), 692–700. doi:10.3758/s13428-011-0076-x

Wagner, U., & Zick, A. (1995). The relation of formal education to ethnic prejudice: Its reliability, validity and explanation. *European Journal of Social Psychology*, *25*(1), 41–56. http://doi.org/10.1002/ejsp.2420250105

Weidman, J. C. (1975). Resistance of White adults to the busing of school children. *Journal of Research & Development in Education*, *9*(1), 123–129.

Weiner, B. (1995). *Judgments of responsibility: A foundation for a theory of social conduct*. New York: The Guilford Press.

Weiner, B., Perry, R. P., & Magnusson, J. (1988). An attributional analysis of reactions to stigmas. *Journal of Personality and Social Psychology*, *55*(5), 738.

Wirtz, C., van der Pligt, J., & Doosje, B. (2015). Derogating obese individuals: the role of blame, contempt, and disgust. *Journal of Applied Social Psychology*, *46*(4), 216–228. http://doi.org/10.1111/jasp.12357

Young, M. (1958). *The rise of the meritocracy 1870-2033. An essay on education and equality*. London: Thames and Hudson.

Young, M. (2001, June 29). Down with meritocracy. The man who coined the word

four decades ago wishes Tony Blair would stop using it. *The Guardian*.

Zakrisson, I. (2005). Construction of a short version of the Right-Wing Authoritarianism (RWA) scale. *Personality and Individual Differences*, *39*(5), 863–872.