

ARTICLE

Not all ballots should be considered equal: How education-based dehumanization undermines the democratic social contract

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Abstract

Less educated people are viewed negatively and their opinions are belittled in our society. Besides, along with other groups, they are underrepresented in the political arena which questions the legitimacy of democratic systems. Despite the existence of education-based devaluation, research on how people dehumanize individuals and groups with lesser education and minimize their democratic rights is scarce. In this project, we provide correlational evidence that less (vs. highly) educated individuals and groups are dehumanized (Study 1a, $N=304$) and their democratic rights (voting, running for office) are questioned (Study 1b, $N=504$). Furthermore, we identified that dehumanization tendencies of the less (vs. highly) educated targets predict support for denying them voting rights or the capability to run for public candidacies (Study 2, $N=447$). Finally, an experimental study confirmed that the target's educational background influences attributions of humanity, which in turn seem to affect the denial of democratic rights to the target (Study 3, $N=470$). These findings suggest that education-based dehumanization might undermine the inalienable democratic rights of lesser educated individuals and groups thus endangering the foundations of democratic systems.

KEYWORDS

dehumanization, democratic rights, education-based groups, public candidacies, voting

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INTRODUCTION

One of the critical principles of the democratic social contract is that each of us deposits our sovereignty on the society as a whole in exchange for being able to express our political will via voting in representative elections and the capability of being publicly elected to represent others in institutions (Zaum, 2007). However, theory sometimes strays from practice. Individuals' rights are often belittled and the voices of many are muffled. This is the case of many ethnic, racial or religious minorities (Logan et al., 2012; Shah & Smith, 2021), but also of one class that goes unnoticed: the less educated (Sandel, 2020). Individuals and groups without formal education are spelt from institutions (e.g. 87% of parliamentary members elected at the 2019 general election in the UK have a university degree, Cracknell & Tunncliffe, 2022) and their rights or voices are despised with profound consequences for them (Easterbrook & Hadden, 2021; Noordzij et al., 2020; Spruyt et al., 2020) and for the political and social stability of democratic societies (Bovens & Wille, 2017). The general aim of this project is to examine whether education-based dehumanization (considering the less educated as less evolved than those with higher education) leads people to minimize the democratic rights of individuals and groups with lesser education.

DEMOCRATIC RIGHTS AND FAIR REPRESENTATION

Contemporary democratic theorists tend to conceive democracy as any set of arrangements under which those affected by political decisions should have an equal opportunity to influence the making of this decision either directly or through the election of representatives (see Urbinati & Warren, 2008). In many electoral systems this definition would imply that, if all individuals have an equal opportunity to influence the electoral process (by being represented by others or by representing others), the procedure is considered fair. However, some authors (e.g. Williams, 1998) have questioned this individualistic, procedural vision of what constitutes a fair representation and denounced the systematic underrepresentation of the historically marginalized groups (e.g. women and ethnic minorities). Critics argue that the social and economic inequalities that persist in democratic societies contribute to produce and/or perpetuate differences in political participation by undermining the influence of certain groups and magnifying that of others (e.g. economically privileged people), which endangers the legitimacy of the democratic system (Young, 2002). Members of disadvantaged groups often encounter several barriers that hinder their political participation and influence. On the one hand, economically or socially powerless actors do not have the resources to buy media time and determine which issues dominate public debate or to contribute to the financing of the campaigns of the parties and candidates that promote their interests (Young, 2002). On the other hand, the negative stereotypes about disadvantaged groups may influence how voters and/or electoral gatekeepers evaluate candidates, consequently reducing their probability of being elected (Golebiowska, 2001; Mo, 2015; Sweet-Cushman, 2022).

Among the groups whose political influence is (increasingly) diminished are people with less formal education (Aars & Christensen, 2020; Bovens & Wille, 2010; Visser et al., 2021). Although formal qualifications are not required to vote or be voted for within representative democratic systems, in practice most political institutions are dominated by university graduates. Bovens and Wille (2017) point to the paradox that, in Western Europe, an overwhelming majority of members of parliaments (more than 90% in some countries) have a university education, while approximately 70% of the electorate have only completed, at most, secondary education. According to these authors, since the lifestyles, worldviews, concerns, and social environments of the more and less educated differ considerably, the rise of political meritocracy would pose a serious threat to the political and social stability by preventing fair representation, setting biased political agendas, and fuelling resentment and populism.

Surprisingly, the exclusion of the less educated from the political arena is not considered as worrisome or illegitimate as the underrepresentation of other groups (e.g. women) and is even defended from some positions. The Platonic utopia of a Republic ruled by the brightest individuals of the polis

has contemporary advocates in academic ranks (e.g. Brennan, 2011, 2016; Gibbons, 2022). Defenders of epistocracy, a political system in which the highly educated or knowledgeable monopolize political power, have proposed different strategies to minimize the political influence of the less educated (for a review, see Kloocksiem, 2019). These strategies include restricting the right to vote for those who do not possess sufficient political knowledge or granting additional votes to those who demonstrate high political knowledge (Bertsou & Caramani, 2022; Brennan, 2016).

These epistocratic theses are supported by the false assumption that formal qualifications are a reflection of individual ability and competence (Tannock, 2008). This could explain why education-based meritocracy seems to enjoy great popularity among both higher and lower educated people. Based on a dataset of 31 countries, van Noord et al. (2019) found that people, in general, consider that education is a legitimate basis for social inequality. Positive attitudes toward education-based meritocracy could penalize less educated individuals in the political arena, either by questioning their ability to vote or to perform political representation functions. Recent evidence suggests that people generally prefer higher over less educated political candidates partly because they attribute greater competence to those with more academic credentials (van Noord et al., 2023). In the current research, we go a step further and explore the extent to which people question the basic rights to vote and political representation of less educated people through processes of dehumanization.

EDUCATION-BASED DEHUMANIZATION

The scope of Social Psychology in understanding biases against less educated groups and individuals is limited (Durst, 2021; Kuppens et al., 2018; Spruyt & Kuppens, 2015a, 2015b). Research on education-based intergroup attitudes has been made by a few researchers who highlight how, in today's society, the devaluation of lesser educated individuals and groups seems to be more permissible and goes unnoticed as a form of bias when it is compared with discrimination against other national or ethnic categories (Kuppens et al., 2018). In general terms, the evidence shows that individuals with little education are viewed more negatively than individuals with a higher level of education, especially by those who themselves hold a higher educational background (Kuppens et al., 2018). The pervasiveness of this bias is such that individuals consider more blameworthy and responsible for their disadvantaged position targets whose disadvantaged position is due to the lack of education compared to when it is framed in the lack of income. This finding speaks of the importance and prevalence of education-based differences as hierarchical enhancement of intergroup categories (Domina et al., 2017; Spruyt et al., 2020), which can certainly contribute to shaping not only attitudes toward educational inequalities (Easterbrook et al., 2019; Easterbrook & Hadden, 2021) but also to trigger broader attitudes related to socioeconomic inequality (Batruch et al., 2022).

This education-based bias can potentially be extended to other social processes with detrimental consequences such as dehumanization. Although the prevalence and persistence of dehumanization in several domains of our lives are notorious (Kteily & Landry, 2022) and dehumanization research is extensive, not much attention has been paid to education-based dehumanization. Uniquely a few studies have analysed the role of dehumanization in interpersonal or intergroup relationships in educational contexts showing, for instance, how teachers can dehumanize students (Bruneau et al., 2020; Civitillo et al., 2022) or how dehumanization can appear among peers (Sin et al., 2023; van Noorden et al., 2014). Yet, no studies, to the best of our knowledge, have addressed the interplay between targets' educational levels and the humanity ascribed to them. On this matter, we wonder if less educated people are perceived as less human compared to highly educated people.

From our point of view, certain pieces of evidence would lead us to answer this question affirmatively. First, the proximity between negative attitudes and the dehumanization process (Haslam & Loughnan, 2014; Kteily & Landry, 2022) suggests that if less (vs. highly) educated people are devalued (Kuppens et al., 2018) they can also be dehumanized. Second, educational contexts and outcomes are easily perceived as hierarchically distributed (Spruyt et al., 2020). It is, thus, easy for people to understand

that having a university degree implies a more elaborated level of education than having the mandatory minimum level of education in society (Easterbrook et al., 2016; van Noord et al., 2021). This is especially relevant as humanity is also commonly understood as the hierarchical distribution of traits that differentiate humans (e.g. rational, refined, evolved) from animals (e.g. irrational, primitive, involuted; see Haslam, 2006; Kteily et al., 2015). The degree to which these Human Uniqueness traits are denied to individuals and groups serves to create hierarchies of human beings (Haslam & Loughnan, 2014) as previous research has shown in the socioeconomic contexts (Fourie et al., 2022; Sainz et al., 2019). So, our understanding, following this previous research, is that people could potentially ascribe humanity to educational groups as a function of their position on the educational hierarchy. Third, the existence of previous evidence on the socioeconomic domain that found how lower (vs. higher) socioeconomic status groups are perceived as scoring lower (vs. higher) on Human Uniqueness traits (Sainz et al., 2019; Sainz, Martínez, Sutton, et al., 2020) may be also tangential evidence of the existence of education-based dehumanization. Socioeconomic status is usually conceptualized by using not only income but also other signals of status such as the prestige of the target profession or the educational level of the individual (Diemer et al., 2013). For instance, studies on the socioeconomic domain that present participants with descriptions of targets that lack income, have a low-prestige job or have a minimum educational background found that these groups are considered less human (Sainz et al., 2019). Even when these studies did not address the issue we are exploring here, they offer hints consistent with the existence of education-based dehumanization. Finally, there is also evidence in related fields such as in the mentalization literature (Gray et al., 2007) that shows that people perceive more complex minds with higher inquisitive capability or more reflexive ones as more human than simple-minded individuals without the apparent capability to express complex thoughts or reasonings. Taking into account that stereotypical representations of highly educated individuals sometimes include some of these characteristics mentioned above (Fiske et al., 2002; Spruyt & Kuppens, 2015a) this could be considered as an initial proof of the interplay between the target's educational background and their perceived higher mentalization/humanization.

The existence of this education-based dehumanization process might be severe as we acknowledge that the dehumanization process favours the neglect of individuals' psychological needs (Schroeder & Epley, 2020) or their capability to suffer socially caused pain (e.g. exclusion, isolation, Summers et al., 2021). Consequences of dehumanization can also manifest in the lack of help when faced with a situation of need (Andrighetto et al., 2014; Sainz, Loughnan, Martínez, et al., 2020) or even in the denial of human rights to certain groups and individuals (Frick, 2021; Landry et al., 2021; Prati & Loughnan, 2018; Zlobina et al., 2023). On our matter of study, we believe that ascribing humanity as a function of the educational background of individuals and groups might have an effect on the abovementioned democratic rights that are an inalienable part of us as members of society (Albarello et al., 2018). Specifically, we propose that by dehumanizing those who have a lesser level of education people will minimize their voting rights or the capability to politically represent others. In short, we consider the dehumanization of less educated people as a factor that can put the foundations of our democracy at risk.

OVERVIEW

We performed a set of studies to address how the denial of humanity to individuals and groups that have a lower (vs. higher) educational background undermines the democratic social contract, which establishes inalienable rights of citizens regardless of any individual sociodemographic circumstance. Due to the novelty and lack of previous empirical evidence in some issues, we first started by conducting two exploratory correlational studies to identify the different attribution of humanity (Study 1a) and democratic rights (Study 1b) based on the educational background of the target (a single individual or groups). Second we moved to analyse, in a joint correlational study, whether humanity's attributions to educational groups related to the ascription of democratic rights to them (Study 2). We ended the project by

manipulating the educational background of a target (low-, middle- and high-educational background) to confirm its influence on the attribution of humanity and the perceived democratic rights of these educational groups (Study 3). Data and materials (items, syntax, supplementary materials) of the project can be found online: <https://osf.io/jnsqp/>.

STUDY 1A

This preliminary study aimed to explore the existence of a possible education-based dehumanization bias that could lead subjects to ascribe humanity to groups based on the group's educational background. To do so, following similar procedures to Kuppens et al. (2018), we asked participants to rate the humanity of seven educational groups that can be found in the context of our study. From lower to higher educational background groups were the following: No Formal Education (that cannot read or write), Mandatory Education, Technical Education, High School Degree, University Degree, Postgraduate Degree, and PhD Degree.¹ Further, when exploring differences in humanity scores we controlled by participants' educational level, identification with their own educational attainment and educational bias. Preregistration can be found online: <https://osf.io/g9n4x>.

Method

Participants and procedure

This study comprised Spanish participants recruited online via Prolific Academic (paid £0.50 per four-minute study). Based on G*Power estimations for a repeated ANOVA measure (within-between interaction, 80% power, $\alpha = .05$, $f = .09$, Faul et al., 2009) a minimum of 238 participants needed to be collected. The final sample, after excluding one participant who did not meet one of the preregistered criteria (i.e. Spanish nationality), was composed of 304 individuals (sex: 128 men, 169 women, 7 others; age: $M_{age} = 30.63$, $SD_{age} = 10.07$; education attainment: 10 mandatory education, 41 technical degree, 79 high school degree, 108 university degree, 62 postgraduate degree, 4 PhD degree).¹ Participants were asked to volunteer in a study about their opinion of educational groups. After being introduced to the aim of the study participants answered the following scales.

Attribution of humanity to educational groups

Participants were asked to rate the humanity of seven educational groups, which map the full educational spectrum in the Spanish context, from the ones with lesser to the ones with higher educational levels. To do so, participants were introduced to the Ascent of Man scale (Kteily et al., 2015). This measure captures blatant dehumanization processes by asking participants to rate the humanity of each education group from 0 (less evolved/less human) to 100 (more evolved/more human). Participants provided their humanity rating using seven sliders, one for each group, that were presented on the same questionnaire page in random order.

Participants' educational background

We measured individual educational level (single item reporting the highest educational level participants had achieved from 0—No formal education to 7—PhD degree), individuals' identification with their educational level (8 items of the multidimensional identification scale. Two from each sub-dimension, for example, 'My educational level is an important part of how I see myself', $\alpha = .913$; Leach et al., 2008) and participants' educational bias (6 items, e.g. 'I value people less when I know

¹Additional information about the educational levels in the Spanish context and sample educational characteristics can be found in the supplementary information.

that they have not completed their educational training', $\alpha = .851$; Kuppens et al., 2018). Finally, individuals provided demographic information (age, gender, nationality, language) at the end of the questionnaire.

Results and discussion

We conducted a mixed model analysis with humanity scores for each educational group as the repeated measure. We included participants' educational background, identification with their education, educational bias and the two-way interactions between each covariate and the repeated measure index as covariates in the analysis. The effect of the repeated measure was significant, suggesting significant differences regarding the attribution of humanity to the different educational groups (see Table 1 and Figure 1). Bonferroni comparisons showed that higher educational levels were associated with higher humanity scores than lower educational levels. All groups differed significantly from each other, $p < .006$, except for the PhD that was similar to the Postgraduate Degree group, $p = .063$, and the High School Degree that was similar to the Technical Degree, $p = .202$ (see descriptive statistics and correlations in Table 2). In addition, we found significant effects of the interaction between humanity scores (repeated measure index) and participants' identification (we do not discuss the interaction effect as it was inconsistent across our outcome variables, but the decomposition is available in Supplementary Materials); as well as the interaction between humanity scores (repeated measure index) and educational bias, indicating that all participants dehumanized people with no formal education more than other groups, but those differences were greater for participants with high (vs. weak) educational bias.

In short, results from this preliminary study indicated that people ascribe humanity to groups based on the target group's educational background with individuals who have lesser educational attainment being perceived as less evolved than those with higher educational levels, especially by those who present more educational bias. This preliminary evidence complements the existing literature showing

TABLE 1 Mixed model displaying the effects of the repeated measures index and the covariates included in Study 1a–b.

	Humanity scores (study 1a)	Voting rights (study 1b)	Rights to be elected (study 1b)
Main effects			
Repeated measure index	$F(6, 1800) = 296.97$ $p < .001$; $\eta_p^2 = .497$	$F(5, 2500) = 60.66$ $p < .001$; $\eta_p^2 = .108$	$F(5, 2500) = 466.16$ $p < .001$; $\eta_p^2 = .482$
Educational level	$F(1, 300) = 0.69$ $p = .408$; $\eta_p^2 = .002$	$F(1, 500) = 3.11$ $p = .078$; $\eta_p^2 = .006$	$F(1, 500) = 12.08$ $p < .001$; $\eta_p^2 = .023$
Identification educational level	$F(1, 300) = 1.34$ $p = .249$; $\eta_p^2 = .004$	$F(1, 500) = 0.82$ $p = .367$; $\eta_p^2 = .001$	$F(1, 500) = 7.00$ $p = .008$; $\eta_p^2 = .014$
Educational bias	$F(1, 300) = 2.34$ $p = .127$; $\eta_p^2 = .007$	$F(1, 500) = 5.79$ $p = .016$; $\eta_p^2 = .011$	$F(1, 500) = 8.04$ $p = .005$; $\eta_p^2 = .016$
Interaction effects			
Repeated measure index*	$F(6, 1800) = 1.28$	$F(5, 2500) = 0.86$	$F(5, 2500) = 0.11$
Educational level	$p = .262$; $\eta_p^2 = .004$	$p = .508$; $\eta_p^2 = .002$	$p = .990$; $\eta_p^2 = .001$
Repeated measure index*	$F(6, 1800) = 7.94$	$F(5, 2500) = 0.83$	$F(5, 2500) = 3.16$
Identification educational level	$p < .001$; $\eta_p^2 = .025$	$p = .527$; $\eta_p^2 = .002$	$p = .008$; $\eta_p^2 = .006$
Repeated measure index*	$F(6, 1800) = 15.03$	$F(5, 2500) = 10.24$	$F(5, 2500) = 3.77$
Educational bias	$p < .001$; $\eta_p^2 = .048$	$p < .001$; $\eta_p^2 = .020$	$p = .002$; $\eta_p^2 = .007$

Note: * is indicating an interaction between variables.

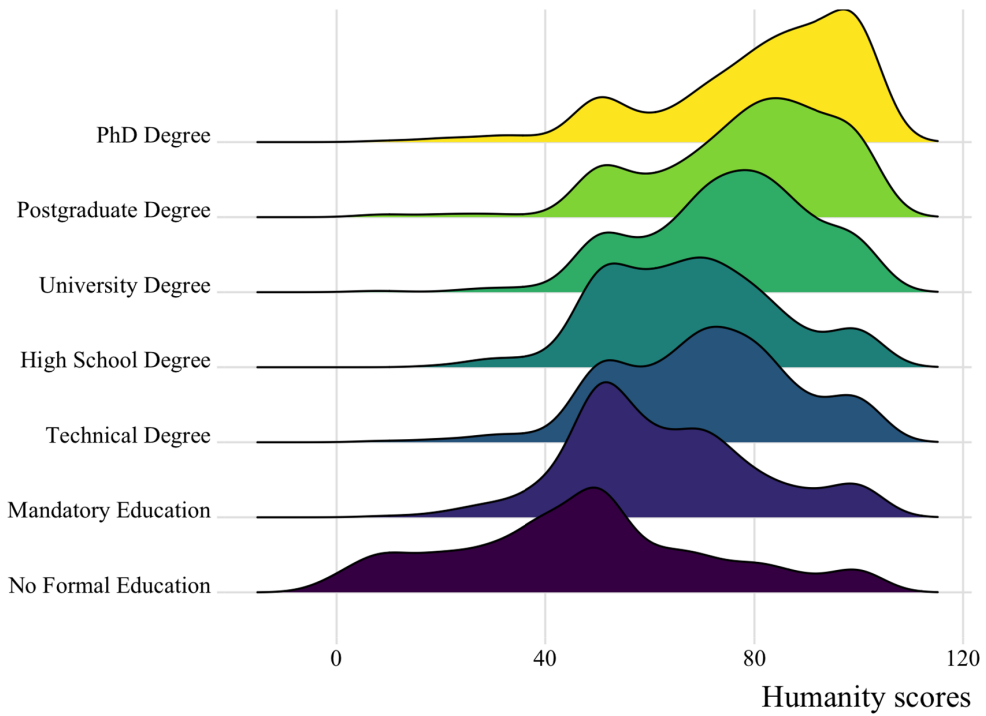


FIGURE 1 Density distribution plot representing the attribution of humanity scores as a function of the educational background of the target group in Study 1a.

how groups are judged as less or more human based on their position on the economic ladder (Sainz et al., 2019) by suggesting that humanity scores are hierarchically distributed according to positions on the educational ladder. Despite the commonalities of both areas of research, we acknowledge that income differences and educational differences do not necessarily overlap or are related to the same outcomes. Thus, in the following study, we explore and develop some measures that capture a possible outcome of this specific form of dehumanization.

STUDY 1B

In this second study, we aimed to explore if people perceive that groups should have different democratic rights based on the group's educational background. Specifically, our interest relied on understanding people's opinions about the right to vote or to be elected as a public representative in elections of targets with different educational levels. We controlled the effects of participants' educational characteristics as in Study 1a. Preregistration can be found online: <https://osf.io/869gt>.

Method

Participants and procedure

This study comprised Spanish students and ex-students from a national distance learning university and acquaintances of them who had participated in other research not related to this in previous courses and expressed their desire to continue collaborating in future studies. The students from

TABLE 2 Descriptive and correlations between Study 1a measures.

	Means (<i>SDs</i>)	1	2	3	4	5	6	7	8	9	10
1. No formal education humanity	47.14 (24.96)	—	.698**	.454**	.559**	.279**	.140*	.081	-.033	-.213**	-.283**
2. Mandatory education humanity	62.63 (18.01)		—	.748**	.877**	.613**	.471**	.414**	-.022	-.093	-.206**
3. Technical degree humanity	70.44 ^a (17.25)			—	.814**	.783**	.696**	.633**	.030	.061	-.078
4. High school degree humanity	68.01 ^a (16.63)				—	.767**	.682**	.587**	-.011	.046	-.087
5. University degree humanity	74.84 ^b (16.37)					—	.902**	.869**	.089	.174**	.114*
6. Postgraduate degree humanity	78.25 ^c (17.63)						—	.870**	.123*	.222**	.169**
7. PhD degree humanity	81.04 ^c (18.64)							—	.136*	.159**	.130*
8. Educational level	4.60 (1.09)								—	.190**	.124*
9. Identification educational level	3.73 (1.40)									—	.404**
10. Educational bias	2.46 (1.22)										—

Note: Means in columns with the same superscripts did not differ at $p = .050$; * $p \leq .05$; ** $p \leq .001$.

this university are more heterogeneous than typical students from face-to-face universities. They are older, distributed in rural and urban areas throughout all the regions of Spain, and often studied while working (see Sánchez-Elvira Paniagua et al., 2006). Participants received an email inviting them to participate voluntarily and without remuneration in a study about their opinion of the democratic rights of different education-based groups. We used the same G*Power estimations as in Study 1a (minimum required $n = 238$). The questionnaire was distributed among a large pool of students leading to a final sample, after 18 exclusions based on the preregistered criteria, of 504 individuals (sex: 209 men, 290 women, 5 others; age: $M_{age} = 40.35$, $SD_{age} = 13.23$; education attainment: 11 mandatory education, 73 technical degree, 115 high school degree, 169 university degree, 118 postgraduate degree, 18 PhD degree). In this study, participants were presented with different items and asked to rate the extent to which they agreed with the statements from 1 (Completely disagree) to 10 (Completely agree) for each of the six education-based groups (to simplify data collection we merged both High School Degree and Technical Degrees in a single category as both can be considered parallel educative paths).¹

Democratic rights of educational groups

In order to capture participants' ascription of democratic rights to educational groups we created different scales based on previous studies that analysed similar issues (Rosenberg & Wejryd, 2022).² The items aimed to capture two different variables: the support for voting rights (four items, e.g. 'People with a high school degree should have the right to cast their vote in elections', α from .757 to .942) and the support for the right to be an elected representative in elections (four items, e.g. 'People with a high school degree should have the right to run for public office', α from .689 to .921).

Participants' educational background

Participants answered to the same previous measures of educational level, identification with their educational level ($\alpha = .908$), educational bias ($\alpha = .733$), and demographic information as in Study 1a.

Results and discussion

As in the previous study, we conducted a mixed model analysis with voting rights and right-to-be-elected scores for each educational group as the repeated measures. We included participants' educational background, identification with their education and educational bias and the two-way interactions between each covariate and the repeated measure index as covariates in the analysis. The effects of the repeated measures were significant for both voting rights and right-to-be-elected (see Table 1), leading to the conclusion that differences can be found between educational groups in these variables. Bonferroni comparisons showed that higher (vs. lower) educational levels were associated with higher voting rights. The No Formal Education group received fewer voting rights than the rest of the groups, all $ps > .001$. Differences in voting rights were not found among higher-educated groups (see Table 3). Bonferroni comparisons also showed that lesser educated groups (i.e. Not Formal Education, Mandatory Education and High School/Technical Degree) were considered as having fewer rights to be elected compared with higher educated groups (i.e. University Degree, Postgraduate Degree and PhD Degree), all $ps > .001$. No differences were found between higher educated groups in rights to be elected (see Table 3).

Regarding the covariates, the interaction between the repeated measure index and participants' identification with their educational level had a significant effect on representation but not on voting rights. The effects of the interaction between the repeated measure index and educational bias on voting and rights to be elected were also significant and consistent with Study 1. All participants

²Interested readers can find the conditional effects and plots of significant interactions along with other details of the analyses in the supplementary information.

TABLE 3 Descriptives and correlations between Study 1b measures.

	Means (SDs)	Educational level	Identification level	Educational bias
		<i>r</i>	<i>r</i>	<i>r</i>
Voting rights				
No formal education	8.88 ^a (2.42)	.015	-.072	-.176*
Mandatory education	9.40 ^b (1.59)	.091*	-.096*	-.122**
High school/technical degree	9.60 ^c (1.23)	.053	-.066	-.110*
University degree	9.69 ^c (1.08)	.077***	-.033	-.055
Postgraduate degree	9.70 ^c (1.07)	.081***	-.016	-.050
PhD degree	9.71 ^c (1.07)	.079***	-.025	-.043
Rights to be elected				
No formal education	4.96 ^a (3.55)	-.048	-.128*	-.148**
Mandatory education	7.10 ^b (2.94)	-.047	-.169**	-.169**
High school/technical degree	8.00 ^c (2.38)	-.081*	-.115*	-.149**
University degree	9.22 ^d (1.38)	-.195**	-.029	-.103*
Postgraduate degree	9.24 ^d (1.40)	-.195*	-.051	-.075***
PhD degree	9.31 ^d (1.34)	-.110**	-.047	-.026

Note: Means in columns with the same superscripts did not differ at $p = .010$; * $p \leq .05$; ** $p \leq .001$; *** $p \leq .004$.

assigned fewer democratic rights (voting and being elected) to people with no formal education than to other groups, but those differences were greater for highly (vs. weakly) educationally-biased participants. Participants' educational background only had a significant effect on their rights to be elected.³

Overall, people seem to reduce endorsement of democratic rights, such as voting or presenting a candidature to certain elections, for those who have lesser formal education compared with more educated people. This seems to be even clearer when we are talking about people with no formal education whose democratic rights are clearly the most questioned of all the educational-based groups and when perceivers present greater educational bias. Once we have established the (de)humanization (Study 1a) and the (lack of) endorsement of democratic rights (Study 1b) of education-based groups separately, we aimed to conduct a second study analysing the interplay between these two previous findings.

STUDY 2

In this study, we aimed to analyse the interplay between the attribution of humanity and the ascription of democratic rights to education-based groups. We expected that higher humanity scores would predict higher endorsement of voting rights and rights to be a public representative. Further, we anticipated to replicate previous findings by identifying the hierarchical distribution of humanity and democratic rights scores as a function of (higher vs. lower) educational attainment. We controlled the effects of participants' educational characteristics as in previous studies. Preregistration can be found online: <https://osf.io/67ugn>.

³A secondary aim of Study 1b was to design the scales that we will be using along the project due to the lack of existing scales that could be adequate for the context of the study. Thus, we provide additional information regarding the scale structures in the supplementary information.

Method

Participants and procedure

We recruited participants online, via Prolific Academic, following a similar procedure as in Study 1a. This time we computed G*Power estimates for regression analysis (three predictors, 80% power, $\alpha = .05$, small effect of $f = .03$) to identify that a minimum of 368 participants was required. We recruited a final sample of 447 Spanish participants after two exclusions (sex: 228 men, 210 women, 9 others; age: $M_{age} = 31.51$, $SD_{age} = 10.54$; education attainment: 1 not formal education, 11 mandatory education, 44 technical degree, 103 high school degree, 174 university degree, 108 postgraduate degree, 6 PhD degree).¹ Participants answered the same dehumanization scale as in Study 1a and the same items about democratic rights (voting: α from .790 to .944; rights to be elected: α from .738 to .923) as in Study 1b. Further, measures of educational level, identification with their educational level ($\alpha = .927$), educational bias ($\alpha = .841$), and demographic information were also included as in the previous studies.

Results and discussion

Attribution of humanity and democratic rights of educational groups

We first replicated previous findings by performing the same mixed model analyses as in previous studies. The effects of the repeated measures were significant for humanity, voting rights, and right-to-be-elected scores (see Table 4). Bonferroni comparisons showed that differences can be found between lesser and higher educated groups on these variables. The No Formal Education group scores lower on the three variables compared with the other groups, all $p < .001$. No differences were found among highly educated groups on democratic rights (Table 5). Regarding the covariates, the interaction between the repeated measure index and participants' identification with their educational level

TABLE 4 Mixed model displaying the effects of the repeated measures index and the covariates included in Study 2.

	Humanity scores	Voting rights	Rights to be elected
Main effects			
Repeated measure index	$F(5, 2215) = 450.22$ $p < .001$; $\eta_p^2 = .504$	$F(5, 2215) = 91.13$ $p < .001$; $\eta_p^2 = .171$	$F(5, 2215) = 452.29$ $p < .001$; $\eta_p^2 = .505$
Educational level	$F(1, 443) = 0.30$ $p = .583$; $\eta_p^2 = .001$	$F(1, 443) = 0.06$ $p = .808$; $\eta_p^2 = .001$	$F(1, 443) = 0.23$ $p = .631$; $\eta_p^2 = .001$
Identification educational level	$F(1, 443) = 4.16$ $p = .042$; $\eta_p^2 = .009$	$F(1, 443) = 0.10$ $p = .756$; $\eta_p^2 = .001$	$F(1, 443) = 5.70$ $p = .017$; $\eta_p^2 = .012$
Educational bias	$F(1, 443) = 8.54$ $p = .004$; $\eta_p^2 = .019$	$F(1, 443) = 50.69$ $p < .001$; $\eta_p^2 = .103$	$F(1, 443) = 25.31$ $p < .001$; $\eta_p^2 = .054$
Interaction effects			
Repeated measure index*	$F(5, 2215) = 1.61$ $p = .155$; $\eta_p^2 = .004$	$F(5, 2215) = 0.29$ $p = .919$; $\eta_p^2 = .001$	$F(5, 2215) = 1.58$ $p = .162$; $\eta_p^2 = .003$
Educational level	$F(5, 2215) = 7.03$ $p < .001$; $\eta_p^2 = .016$	$F(5, 2215) = 0.03$ $p = .999$; $\eta_p^2 = .001$	$F(5, 2215) = 1.57$ $p = .165$; $\eta_p^2 = .003$
Repeated measure index*	$F(5, 2215) = 67.10$ $p < .001$; $\eta_p^2 = .131$	$F(5, 2215) = 44.05$ $p < .001$; $\eta_p^2 = .090$	$F(5, 2215) = 14.64$ $p < .001$; $\eta_p^2 = .032$
Educational bias			

Note: * is indicating an interaction between variables.

had a significant effect on dehumanization but not on democratic rights.³ The interaction between the repeated measure index and participants' educational bias had significant effects on all the outcome variables. All participants dehumanized people with no formal education more and assigned them fewer rights to vote and being elected than other groups, but those differences were greater for participants with high (vs. weak) educational bias.

We secondly computed correlations and regression analyses using humanity scores as predictors of the democratic rights of education-based groups (Table 5). Results regarding the correlations showed that in general humanity scores were related to the democratic rights of the educational groups. Interestingly correlations seemed to follow a pattern in which the strength of the correlation decreases as the educational background of the group increases. For instance, the correlation between humanity scores and voting rights for groups with no formal education was higher ($r = .307, p < .001$) than the same correlation for groups with a PhD degree ($r = .055, p = .244$). In fact, z -test comparisons indicated that the correlations for groups with No Formal Education were significantly different compared with PhD level on voting rights ($z = 3.89, p < .001$) and rights to be elected ($z = 3.59, p < .001$). In addition, we computed multiple regression analyses using the humanity scores of each educational group on voting rights and elected rights while controlling by participants' educational level and identification with their educational attainment. Results from the regression analyses indicated that the humanity of the different educational groups positively predicted their voting and electing rights.

We finally conducted exploratory analyses to see if humanity attributions to educational targets mediated the relationship between the repeated measure index and the voting rights/right to be elected scores, while controlling by participants' educational level and identification with their educational attainment and used the educational bias as the moderator based on results in Table 4 (PROCESS, model 8, 10,000 interactions, Hayes, 2018). To simplify these analyses, we modified the repeated measure index by grouping educational targets into three categories: low- (No Formal Education target), middle- (Mandatory Education and High School/Technical Degree targets), and high-educational attainment (University degree and above targets). This modification allowed us to use multicategory independent variables following recommendations from Hayes and Preacher (2014). Specifically, we computed three different comparisons for each dependent variable: low- vs. high-; low- vs. middle-; middle- vs. high-education comparisons. Results from these analyses indicated that the educational target level (dummy coded) had a significant effect on humanity scores: Low- vs. high-condition ($effect = 0.56; SE = 0.05; p < .001$); low- vs. middle-condition ($effect = 0.26; SE = 0.05; p < .001$); middle- vs. high-condition ($effect = 0.29; SE = 0.04; p < .001$), while humanity scores had an effect on voting rights ($effect = 0.16; SE = 0.02; p < .001$) and rights to be elected ($effect = 0.18; SE = 0.02; p < .001$; Figure 2). Further, we found that humanity scores seemed to partially mediate the relationships between the educational target level (dummy coded)

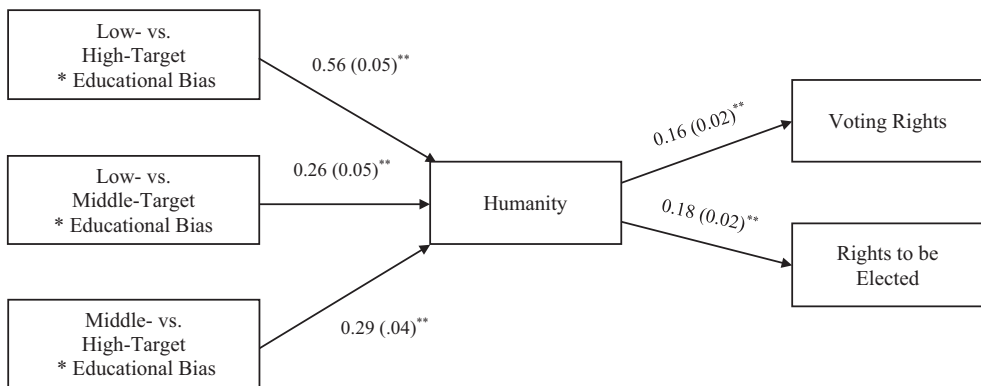


FIGURE 2 Interaction effects between the educational targets (dummy coded) and educational bias for education groups on humanity and democratic rights scores in Study 2. Coefficients are standardized. ** $p \leq .001$; * $p \leq .05$.

TABLE 6 Exploratory mediation analyses of humanity scores in the relationship between the educational targets (dummy coded: low-, middle-, and high-educational level) and the democratic rights controlled by participants' educational level, and identification with their educational attainment and educational bias as a moderator in Study 2.

	Indirect effect		Direct effect		Index of moderated mediation	
	Effect (<i>SE</i>)	95% CI	Effect (<i>SE</i>)	95% CI	Effect (<i>SE</i>)	95% CI
Low- (vs. High-)—Voting rights					0.09 (0.02)	[0.06; 0.12]
Bias -1 <i>SD</i>	0.11 (0.02)	[0.07; 0.16]	0.05 (0.07)	[-0.08; 0.19]		
Bias <i>Mean</i>	0.20 (0.04)	[0.14; 0.27]	0.50 (0.05)	[0.39; 0.61]		
Bias $+1$ <i>SD</i>	0.29 (0.04)	[0.21; 0.38]	0.94 (0.07)	[0.79; 1.09]		
Low- (vs. High-)—Rights to be elected					0.10 (0.01)	[0.07; 0.13]
Bias -1 <i>SD</i>	0.12 (0.02)	[0.08; 0.16]	1.13 (0.06)	[1.01; 1.25]		
Bias <i>Mean</i>	0.22 (0.03)	[0.17; 0.28]	1.34 (0.05)	[1.25; 1.43]		
Bias $+1$ <i>SD</i>	0.32 (0.04)	[0.24; 0.39]	1.55 (0.07)	[1.42; 1.69]		
Low- (vs. Middle-)—Voting rights					0.04 (0.01)	[0.02; 0.06]
Bias -1 <i>SD</i>	0.08 (0.02)	[0.05; 0.12]	0.06 (0.07)	[-0.08; 0.21]		
Bias <i>Mean</i>	0.12 (0.02)	[0.08; 0.16]	0.42 (0.05)	[0.32; 0.53]		
Bias $+1$ <i>SD</i>	0.16 (0.03)	[0.11; 0.22]	0.79 (0.08)	[0.64; 0.95]		
Low- (vs. Middle-)—Rights to be elected					0.05 (0.01)	[0.03; 0.07]
Bias -1 <i>SD</i>	0.08 (0.02)	[0.05; 0.12]	0.79 (0.06)	[0.67; 0.92]		
Bias <i>Mean</i>	0.13 (0.02)	[0.10; 0.17]	0.87 (0.05)	[0.77; 0.96]		
Bias $+1$ <i>SD</i>	0.18 (0.02)	[0.13; 0.23]	0.93 (0.07)	[0.81; 1.06]		
Middle- (vs. High-)—Voting rights					0.05 (0.01)	[0.03; 0.05]
Bias -1 <i>SD</i>	0.03 (0.01)	[0.01; 0.05]	-0.01 (0.05)	[-0.11; 0.11]		
Bias <i>Mean</i>	0.08 (0.01)	[0.05; 0.11]	0.07 (0.04)	[-0.01; 0.15]		
Bias $+1$ <i>SD</i>	0.13 (0.02)	[0.09; 0.17]	0.15 (0.05)	[0.03; 0.25]		
Middle- (vs. High-)—Rights to be elected					0.05 (0.01)	[0.03; 0.07]
Bias -1 <i>SD</i>	0.03 (0.01)	[0.02; 0.06]	0.33 (0.05)	[0.24; 0.43]		
Bias <i>Mean</i>	0.08 (0.01)	[0.07; 0.11]	0.47 (0.03)	[0.40; 0.54]		
Bias $+1$ <i>SD</i>	0.14 (0.02)	[0.11; 0.12]	0.61 (0.05)	[0.52; 0.71]		

Note. Coefficients are standardized.

and democratic rights (Table 6) with a few exceptions in which we identified a full mediation model (with a non-significant direct effect). In addition, the effect of the educational target level (dummy coded) on democratic rights via humanity scores was moderated by educational bias in all the possible comparisons. Specifically, the indirect effect via humanity was stronger for those high (vs. low) in educational bias across all the comparisons.

In short, this correlational study (1) replicated the tendency to ascribe humanity and democratic rights as a function of the lower (vs. higher) educational background of the target, especially by those who present more educational bias, while also (2) showed that for the vast majority of education-based groups, the ascription of humanity to them was positively related to their right to cast a vote and being able to present themselves to public candidacies. Interestingly, humanity played a more important role in predicting the adherence to democratic rights for groups that have a lesser educational background. As a final step in the project, we aimed to experimentally confirm the influence of educational attainment differences on the endorsement of democratic rights through the perceived group humanity that we explore in this study.

STUDY 3

In this final study, we aimed to confirm previous findings by testing the influence of a target educational background (low-, middle- or high-educational level) on the attribution of humanity and on the endorsement of voting rights and rights to be a public representative of the target. Further, we wanted to confirm the mediational processes using humanity scores as a mediator in the relationship between the target educational background and their 'democratic' rights. We controlled the effects of participants' educational characteristics as in previous studies. Preregistration can be found online: <https://osf.io/c4kyv>.

Method

Participants and procedure

We recruited participants using a snowball sampling method among relatives and acquaintances of the students in a distance-learning university. Using G*Power we estimated that a minimum of 432 participants were required (ANOVA, 80% power, $\alpha = .05$, medium-small effect of $f = .15$). The final sample, after excluding 12 participants who did not meet the inclusion criteria (i.e. different nationality), was composed of 470 Spanish individuals from the general population (sex: 242 women, 226 men, 2 others; age: $M_{age} = 39.69$, $SD_{age} = 12.81$; education attainment: 11 not formal education, 38 mandatory education, 83 technical degree, 143 high school degree, 112 university degree, 72 postgraduate degree, 11 PhD degree).¹ Participants were asked to read a profile of an individual and then answer some questions about the profile information.

Manipulation of the educational background

In order to manipulate the educational background of a target, participants were asked to read information from an individual profile that included some socio-demographic information. In all the conditions the profile presented information about a middle-aged man called Jaime who lived in a middle-size city in Spain and had 15 years of working experience. Along with this filler information we included the educational attainment of the individual modifying the maximum level he reached. Specifically, we had a low- (the individual had uniquely the mandatory education certificate), a middle- (the individual had a high school/technical degree) and a high-educational background (the individual had a university degree and a postgraduate certificate) condition (between-subject design).

Once participants had read the information, they answered an attentional check to ensure they had captured the educational level of the target (seven categories from 1 - 'Not formal education' to 7 'PhD level'). Then, they rated the individual's humanity and democratic rights (voting: $a = .814$; rights to be elected: $a = .855$) using the same scales as before. Further, measures of educational level, identification with their educational level ($a = .903$), educational bias ($a = .784$) and demographic information were also included as in the previous studies.

Results and discussion

Firstly, we identified differences in the manipulation check, $F(2, 469) = 860.21$, $p < .001$, $\eta_p^2 = .787$, confirming that participants correctly identified the existing differences in the target educational level between experimental conditions (Low-: $M = 1.98$, $SD = 1.02$; Middle-: $M = 3.75$, $SD = .61$; High-educational level of the target: $M = 5.69$, $SD = .71$), while we also replicated previous regression effects of the experimental conditions on the dependent variables (see online supplementary information for descriptives and regression analyses).

Secondly, we carried out analyses to confirm the potential mediation effects of humanity scores in the relationships between the experimental condition (low-, middle- and high-educational

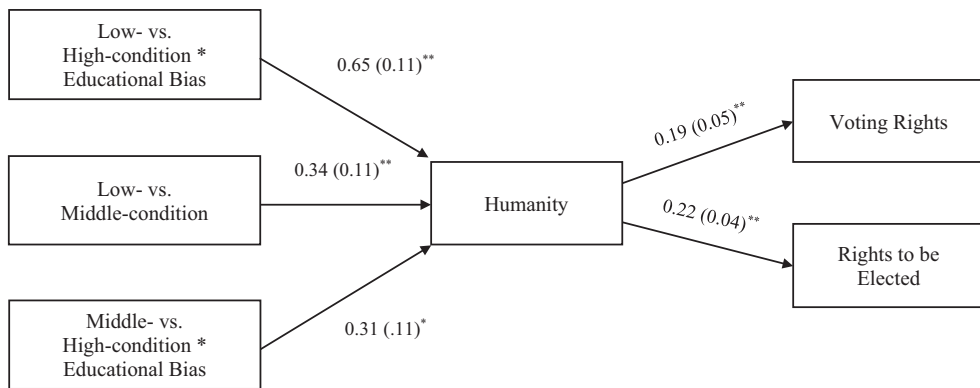


FIGURE 3 Interaction effects between the experimental conditions and educational bias for low-/high- and middle-high-education groups and the main effect of low-/middle-education groups on humanity and democratic rights scores in Study 3. Coefficients are standardized. ** $p \leq .001$; * $p \leq .05$.

background of the target) and the voting rights/right to be elected scores. We controlled by participants' educational level and identification with their educational attainment and used the educational bias as the moderator on the effect of the manipulation on the mediator and the dependent variables (PROCESS, model 8, 10,000 interactions, Hayes, 2018).⁴ Further, to perform the analyses, we computed three different comparisons for each dependent variable: Low- vs. high-; low- vs. middle-; middle- vs. high-education condition. Results from these analyses indicated that the experimental conditions had a significant main effect on humanity scores: Low- vs. high-condition ($effect = 0.65$; $SE = 0.11$; $p < .001$); low- vs. middle-condition ($effect = 0.34$; $SE = 0.11$; $p = .001$); middle- vs. high-condition ($effect = 0.31$; $SE = 0.11$; $p = .004$), while humanity scores had an effect on voting rights ($effect = 0.19$; $SE = 0.05$; $p < .001$) and rights to be elected ($effect = 0.22$; $SE = 0.04$; $p < .001$; Figure 3). In addition, humanity scores played a significant mediating role in most of the relationships between the experimental conditions and democratic rights (Table 7). However, the effect of condition on democratic rights via humanity scores was moderated by educational bias in the comparisons between the low-/high- and middle-/high-education conditions. Specifically, the indirect effect via humanity was stronger for those high (vs. low) in educational bias in the low-/high-conditions, while the indirect effect via humanity was uniquely significant for highly educational-biased participants but not for the weakly-biased participants in the middle-/high-comparisons. No moderated mediations were found when comparing low- and middle-education conditions, neither a significant indirect effect of humanity scores on highly biased participants in low-/middle-comparisons. Moreover, we should acknowledge that humanity scores fully mediated the relationship between the experimental conditions and the democratic rights in four of the six groups of comparisons but with the exceptions of the comparisons between low-/high-conditions and low-/middle-conditions on rights to be elected. In these analyses, the relationships were partially mediated by humanity scores as the direct effect remained significant after including the mediator.

In general, results from this experimental study confirmed the previous pattern of results: Less educated targets were perceived as less human and with fewer democratic rights when they were compared with higher educated targets. This is especially true for the right-to-be-elected variable whose effects seem to be stronger than the one we identified for voting rights, as well as for individuals who display higher educational bias. Further, humanity's scores of educational targets seemed to be the variable that links the differences in education with differences in ascribed rights to individuals.

⁴We deviated from our preregistration to perform moderated mediational analyses based on the findings we identified in the regression analyses.

TABLE 7 Mediation analysis of humanity scores in the relationship between the experimental conditions and the democratic rights of educational targets controlled by participants' educational level, and identification with their educational attainment and educational bias as a moderator in Study 3.

	Indirect effect		Direct effect		Index of moderated mediation	
	Effect (<i>SE</i>)	95% CI	Effect (<i>SE</i>)	95% CI	Effect (<i>SE</i>)	95% CI
Low- (vs. High-)—Voting rights					0.04 (0.02)	[0.02; 0.09]
Bias -1 <i>SD</i>	0.08 (0.04)	[0.02; 0.17]	0.13 (0.15)	[-0.16; 0.42]		
Bias <i>Mean</i>	0.12 (0.04)	[0.04; 0.22]	0.08 (0.11)	[-0.14; 0.30]		
Bias $+1$ <i>SD</i>	0.17 (0.06)	[0.06; 0.31]	0.03 (0.16)	[-0.27; 0.34]		
Low- (vs. High-)—Rights to be elected					0.04 (0.02)	[0.01; 0.09]
Bias -1 <i>SD</i>	0.10 (0.04)	[0.03; 0.19]	0.65 (0.13)	[0.39; 0.91]		
Bias <i>Mean</i>	0.15 (0.04)	[0.07; 0.23]	0.70 (0.10)	[0.50; 0.90]		
Bias $+1$ <i>SD</i>	0.20 (0.05)	[0.10; 0.31]	0.74 (0.14)	[0.46; 1.03]		
Low- (vs. Middle-)—Voting rights					-0.01 (0.02)	[-0.05; 0.03]
Bias -1 <i>SD</i>	0.07 (0.04)	[0.01; 0.15]	0.09 (0.14)	[-0.20; 0.38]		
Bias <i>Mean</i>	0.07 (0.03)	[0.01; 0.13]	0.15 (0.11)	[-0.06; 0.37]		
Bias $+1$ <i>SD</i>	0.06 (0.04)	[-0.01; 0.15]	0.22 (0.15)	[-0.07; 0.52]		
Low- (vs. Middle-)—Rights to be elected					-0.04 (0.02)	[-0.05; 0.04]
Bias -1 <i>SD</i>	0.08 (0.04)	[0.02; 0.16]	0.68 (0.13)	[0.42; 0.94]		
Bias <i>Mean</i>	0.08 (0.03)	[0.02; 0.14]	0.71 (0.10)	[0.52; 0.91]		
Bias $+1$ <i>SD</i>	0.07 (0.04)	[-0.01; 0.16]	0.75 (0.13)	[0.49; 1.02]		
Middle- (vs. High-)—Voting rights					0.04 (0.02)	[0.01; 0.09]
Bias -1 <i>SD</i>	0.01 (0.03)	[-0.04; 0.07]	-0.09 (0.15)	[-0.38; 0.20]		
Bias <i>Mean</i>	0.06 (0.03)	[0.15; 0.12]	-0.15 (0.11)	[-0.37; 0.06]		
Bias $+1$ <i>SD</i>	0.11 (0.05)	[0.03; 0.21]	-0.22 (0.15)	[-0.52; 0.07]		
Middle- (vs. High-)—Rights to be elected					0.05 (0.02)	[0.01; 0.09]
Bias -1 <i>SD</i>	0.02 (0.03)	[-0.04; -0.01]	-0.03 (0.13)	[-0.29; 0.23]		
Bias <i>Mean</i>	0.07 (0.03)	[0.02; 0.13]	-0.02 (0.10)	[-0.21; 0.17]		
Bias $+1$ <i>SD</i>	0.13 (0.04)	[0.05; 0.22]	-0.01 (0.15)	[-0.29; 0.28]		

Note. Coefficients are standardized.

GENERAL DISCUSSION

Democratic political institutions are currently dominated by highly educated individuals, which questions democratic legitimacy and fuels political and social instability and populism (Bovens & Wille, 2017). Curiously, the scant political participation of less educated people is not a matter of debate and is even legitimized based on supposedly meritocratic criteria. The aim of this project was to delve into the understanding of a non-explored form of bias, educated-based dehumanization, and its repercussions on the democratic rights to vote and exercise political representation. Along four correlational and one experimental study, accounting for a total of 1728 participants, we found evidence of the existence of a dehumanized perception of lesser educated individuals and groups. Besides, we identified the consequences of dehumanizing those with lesser educational attainment in an uncharted process as the denial of the democratic rights through which each of us expresses our voice in society.

The evidence we provided in the studies allows us to discern some patterns. First, as hypothesized, educational disparities among targets were related to human trait differences. Individuals and groups with higher education were considered as more evolved compared with lesser educated individuals,

especially those who lack formal education, who were the most dehumanized. This is consistent with previous studies from Kuppens and Spears (2014) and Kuppens et al. (2018) who highlighted that people endorse school meritocracy even more than general meritocracy. This leads to the conclusion that less educated people are seen as more responsible and blameworthy for their situation as compared to other disadvantaged groups. These previous findings showed the existence of a generalized educationist bias, suggesting that the education ladder is perceived as legitimate, resulting in the devaluation and denial of positive traits to the lower educated, which have profound consequences on their political rights. Further, this is also consistent with previous evidence about the interplay between humanity attributions and socioeconomic status which has found a linear ascription of uniquely human traits as a function of the socioeconomic status of targets (Loughnan et al., 2014; Sainz, Martínez, Sutton, et al., 2020). However, we should recognize that, despite the commonalities of education-based dehumanization with previous research on the dehumanization of (dis)advantaged groups, the educative ladder provides a unique context in which targets, especially those lacking education, are subject to a strongly negative perception. This occurs without the existence of social norms that penalize derogatory comments or discriminatory behaviours against them to the extent that individuals seem to even desire to exclude them from the social democratic contract.

Second, the perceived entitlement to democratic rights (voting and being elected as a candidate) was shaped to some extent by individuals' educational attainment. This is especially true when we compare the ascription of these democratic rights to groups with higher education (university degree or higher) with the ones who do not hold a degree. Having higher education seemed to be a cutting point, especially for being considered a suitable profile to exercise public representation. Along with structural barriers, educational bias could partly explain the high prevalence of elected representatives with higher education in official institutions (Bovens & Wille, 2017). Further, bias in the ascription of democratic rights appeared to be predicted by educated-based dehumanization. This pattern extends previous findings highlighting how (de)humanization triggers the denial of human rights to individuals and groups (Zlobina et al., 2023) by analysing its effects on previously unexplored democratic rights.

Third, educated-based dehumanization seemed to be independent of individuals' educational level or identification with their own education as opposed to previous findings (Kuppens et al., 2015, 2018). Instead, humanity differences interacted with participants' level of educational bias: Those who had a more entitled view of education and a stronger preference for individuals with formal education above the lesser educated seemed to dehumanize more and exclude the less educated from being involved in the democratic sphere. This is in line with similar findings on the socioeconomic domain in which individual characteristics (e.g. subjective or objective socioeconomic status) play a minor role in predicting poor people's dehumanization in comparison with attitudinal or ideological positionings (e.g. system justification or hostile classism; Sainz & Jiménez-Moya, 2023). In our context of the study, it seems that personal educational bias, rather than the individual's position on the educational ladder, predicts to a higher extent the outcomes we are measuring. This pattern of results needs to be addressed in future studies to understand how the less educated could legitimize the existence of educational barriers that exclude them from democratic decisions and participation.

Limitations can be found in the present project. The exploratory nature of the studies that aimed to identify the ascription of voting and being elected rights led us to measure these processes in an explicit manner. This, despite its usefulness, might have produced certain patterns of results (e.g. ceiling effects) that could have potentially made us miss subtle differences in, for instance, voting rights assignments. Capturing subtle biases might be adequate for improving our understanding of the extent to which people deny democratic rights to groups with lesser education. Further, when performing the studies, we also tested whether identification interacted with participants' level of education (see online supplementary materials). Despite the null effect of these variables in most of the analyses, we should acknowledge that we did not have an adequate number of participants for each educational attainment with lesser individuals in the extremes of the educational ladder (e.g. not formal education). This unequal distribution of individuals across educational levels and identifications could reduce the accuracy of the results within the underrepresented groups which also limits the conclusion that we

can draw from the lack of interaction effects in some analyses. Providing future studies with a balanced distribution of individuals along the educational attainment continuum will help to accurately examine the main or interaction effects of educational background and identification with their attainment on dehumanization and ascription of democratic rights scores. Finally, to reinforce the present findings and establish the robustness of education-based dehumanization against related processes future studies should account for social perception categories such as the perceived competence of the educational targets in light of the previous findings that highlight the importance of the attribution of competence when depositing our sovereignty on political candidates (van Noord et al., 2023). By doing this, future studies will overcome the limitations of the present studies that uniquely focus on humanity's attributions to educational targets.

Further, future studies should also deepen the understanding of the consequences of education-based dehumanization. On the one hand, future studies could provide evidence of the effect of education-based dehumanization on other related variables that could potentially capture subtle biases rather than manifest processes such as the ones we aimed to capture on this project (e.g. the explicit endorsement of voting rights). Exploring other subtle processes related to the ones we included in this project might help to understand how education-based dehumanization might shape the perception of our political agenda and the existence of subtle biases that could lead individuals to exclude citizens from public participation and public affairs (Spruyt et al., 2020). On the other hand, future projects can approach the study of education-based dehumanization from the target's perspective. It would be interesting to explore whether the extent to which individuals with lesser education perceive that they are dehumanized within society leads to a possible self-dehumanization that could potentially motivate them to refrain from public participation in democratic decisions as voters or as representatives. In this sense, previous research has tested how low (vs. high) socioeconomic individuals perceive higher meta-dehumanization from society (Sainz, Martínez, Moya, et al., 2020) or that meta-dehumanization can trigger individuals' self-dehumanization (Sainz et al., 2023). These processes contribute to undermining individuals' well-being or decreasing individuals' dignity. Therefore, in the context of our study, we consider that meta-dehumanization and self-dehumanization might reinforce the existing exclusion of non-educated individuals from society (Landry et al., 2021). If less educated people perceive that society dehumanizes them and internalizes these dehumanized perceptions, they could in turn show decreased intentions to engage in the public sphere. This will favour the overrepresentation of the voice and desires of an educated minority in institutions minimizing the plurality of political representatives and, thus, eroding democracy itself by fuelling resentment and populism (Bovens & Wille, 2017).

Overall, we established the existence of an education-based dehumanization tendency which constitutes a risk factor leading individuals to deny democratic rights to those who lack an extended educational background. Equating formal education with the disposition to fully exercise the right to express their voice and participate in public affairs through (de)humanization process constitutes an insufficiently studied social issue that needs to be addressed before it can put the foundations of our democracy at risk.

AUTHOR CONTRIBUTIONS

Mario Sainz: Conceptualization; investigation; writing – original draft; methodology; writing – review and editing; formal analysis; project administration; data curation. **Alexandra Vázquez:** Investigation; writing – original draft; methodology; writing – review and editing; formal analysis; data curation; project administration.

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DATA AVAILABILITY STATEMENT

Data and materials can be found online <https://osf.io/jnsqp/>.

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