



Lacking socio-economic status reduces subjective well-being through perceptions of meta-dehumanization

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Previous research has identified that both low- and high-socio-economic groups tend to be dehumanized. However, groups that have a deprived position are more willing to interiorize the negative perceptions that others have about them compared with affluent groups. In this project, we address the role of meta-(de)humanization (the perceived humanity one thinks is ascribed or denied to one's group) based on socio-economic status differences and its influence in the perceived psychological well-being. We conducted two studies: In Study 1 (correlational, $N = 990$), we analysed the relationship between socio-economic status, meta-dehumanization, and well-being. Results indicated that lower socio-economic status positively predicted more meta-dehumanization and worse well-being. Moreover, meta-dehumanization mediated the relationship between socio-economic status and well-being. In Study 2 (experimental, $N = 354$), we manipulated socio-economic status (low-, middle-, and high-socio-economic status conditions) to evaluate its influence on meta-dehumanization and well-being. Results indicated that individuals of low (vs. higher)-socio-economic status perceived more meta-dehumanization and reported worse well-being. Finally, a multicategorical mediational analysis indicated that low (vs. middle or high)-socio-economic status led to worse well-being through higher perceived meta-dehumanization. We discuss differences in perceived meta-(de)humanization based on groups' socio-economic status and implications on the population's well-being.

Differences in socio-economic status (SES) between groups have been found to shape multiple psychological processes (Manstead, 2018). For instance, previous studies have identified that SES has an influence on the way people define themselves (Easterbrook, Kuppens, & Manstead, 2020; Kraus & Park, 2014), the form they interpret the world (Kraus, Côté, & Keltner, 2010; Kraus, Piff, & Keltner, 2009), or even on people's psychological subjective well-being (Anderson, Kraus, Galinsky, & Keltner, 2012; Diener & Oishi, 2000). Moreover, socio-economic differences influence the way society perceives groups based on their social rank. Previous evidence highlights that groups at both extremes of the social ladder (i.e., low- and high-SES groups) tend to be stereotyped (Durante, Tablante, & Fiske, 2017) and dehumanized (Loughnan, Haslam, Sutton, &

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Spencer, 2014; Sainz, Martínez, Moya, & Rodríguez-Bailón, 2019). Based on previous evidence, we advance the idea that being dehumanized has a detrimental effect on the targets' psychological well-being (Haslam & Loughnan, 2014).

However, it is unlikely that perceptions of being dehumanized have the same consequences for those who have a low economic standing compared with those who have a privileged position within society. Thus, the main goal of this research is to analyse the extent to which SES (i.e., low-, middle-, or high-SES groups) fosters subjective well-being through the perceived humanity that others ascribe to a group (i.e., meta-dehumanization; Kteily, Hodson, & Bruneau, 2016). We also aimed to analyse the extent to which meta-dehumanization perceptions mediate the relationship between SES and perceived psychological well-being.

Socio-economic status differences and subjective psychological well-being

Socio-economic disparities among individuals or groups that coexist in the same society affect their subjective psychological well-being (Anderson *et al.*, 2012; Curhan *et al.*, 2014; Vera-Villaruel *et al.*, 2015). Specifically, the influence that SES can exert on well-being has been studied from different perspectives (Kraus, 2018). On the one hand, the impact on people's well-being has been studied by taking into consideration the material conditions or the objective SES (OSS) in which they live (Tay & Diener, 2011) which refers to the capability to cover their basic needs (i.e., food, shelter, heat). These material conditions are predictors of psychological well-being (Diener & Oishi, 2000), especially among those who face scarcity in unequal contexts (Sommet, Morselli, & Spini, 2018). On the other hand, well-being has been studied by using the relative conditions or the subjective SES (SSS; Adler, Epel, Castellazzo, & Ickovics, 2000) that lead people or groups to (up or down) social comparisons with other individuals or groups within their society. This perceived social ranking has also been found to be a suitable predictor of life satisfaction or psychological well-being (Anderson *et al.*, 2012; Diener & Fujita, 1997). Previous research has also indicated that SSS is a better predictor of psychological well-being than OSS (Diener *et al.*, 1993). This is especially true when OSS is measured using raw income indicators as proxies of well-being instead of measuring relative income where people can allocate themselves within their society compared to others (Boyce, Brown, & Moore, 2010; Fournier, 2019). Thus, OSS indicators appear to be less relevant compared to the subjective perception of the personal standing of each individual within society (Anderson *et al.*, 2012; Kraus, 2018).

Furthermore, previous research has shown that socio-economic differences influence not only psychological well-being but also individuals' self-representation or self-definition (Easterbrook *et al.*, 2020). For instance, researchers have found that members of high-SES groups are more self-focused than those of low-SES groups, who tend to be more oriented towards others (Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012). In addition, low-SES group members interiorize their deprived position by engaging in negative self-evaluations in a higher extent than high-SES groups (Kraus & Park, 2014; Tan & Kraus, 2015). All of these findings suggest that social class has a direct influence on the way people define themselves (i.e., self-definition). In addition, these results reinforce the idea that low-SES groups are more susceptible to being affected by external factors (e.g., their plight, opinion of others towards them, stereotypes) as a consequence of their communal and other-oriented self-construal (Easterbrook *et al.*, 2020). High-SES groups are less prone to pay attention to the opinion that others have about them or to how they are regarded within their society as a consequence of their

individualistic and more narcissistic tendencies (Kraus *et al.*, 2012; Piff, 2014). Therefore, it is plausible that there could be differences in the extent to which low- and high-SES groups perceive that they are the target of detrimental processes such as being dehumanized (Sainz, Martínez, Moya *et al.*, 2019). In fact, there are grounds to believe that even though both extremes of the social ladder are dehumanized, only those who have experienced scarcity are affected by how they are perceived within the society.

Consequences and targets of meta-dehumanization

The denial of humanity to others is a pervasive process within our societies that contributes to deteriorating interpersonal and intergroup relationships (for reviews, see Haslam & Loughnan, 2014; Haslam & Stratemeyer, 2016; Vaes *et al.*, 2012). Researchers distinguish between different forms of dehumanization such as animalistic dehumanization (i.e., the perception of others as closer to animals than humans, as a consequence of denying uniquely human traits such as civility or rationality) or mechanistic dehumanization (i.e., the perception of others as closer to machines/objects than humans, as a consequence of denying human nature traits such as emotionality or interpersonal warmth). These forms of dehumanization are applied to different groups (e.g., animalistic dehumanization is usually associated with low-SES groups, whereas mechanistic dehumanization is associated with high-SES groups; Sainz, Martínez, Rodríguez-Bailón, & Moya, 2019) and have different social consequences (e.g., maintaining the status quo, disconnecting from others' emotional experiences; Haslam & Loughnan, 2014).

Furthermore, humanity cannot be denied exclusively to others; it can also be denied, or ascribed, to one's own self. This process is known as self-dehumanization (Bastian & Crimston, 2014; Bastian, Jetten, & Haslam, 2014). Specifically, this consists in a failure to attribute traits and characteristics associated with one, or both, dimensions of humanity to the self (i.e., self-dehumanization; Bastian & Haslam, 2011) or the perception that others/third persons fail to attribute humanity to themselves or to their ingroup (i.e., meta-dehumanization; Kteily *et al.*, 2016; Sainz, Loughnan, Eyssel, & Pina, 2019). From this perspective, the lack of self-humanity might have detrimental consequences for groups or individuals. For instance, the perception of self-dehumanization has been associated with self-deconstructive states such as mental apathy or reduced clarity of thoughts, but also with negative emotional experiences such as sadness, shame, and/or guilt, or a higher tendency to engage in immoral behaviours (Bastian & Haslam, 2011; Kouchaki *et al.*, 2018). Indeed, previous researchers have mainly examined the interplay between self-dehumanization and the tendency to engage in immoral behaviours, showing that individuals tend to self-dehumanize after engaging in aggressive behaviours towards others in a video game context (Bastian, Jetten, & Radke, 2012), but also when they ostracized another person (Bastian *et al.*, 2013). Recently, research demonstrated how engaging in immoral behaviours led to a vicious circle of self-dehumanization that increased posterior dishonest behaviours (Kouchaki *et al.*, 2018). In a similar vein, researchers who focused on meta-dehumanization have identified that the awareness that one is being perceived as less than human by others increased the tendency to dehumanize those others (Kteily *et al.*, 2016). This, ultimately, facilitates the perseverance of a vicious circle of violence, which facilitates the maintenance of longstanding economic, political, or ethnic conflicts (Bruneau & Kteily, 2017; Kteily & Bruneau, 2017; Sainz, Loughnan *et al.*, 2019).

Interestingly, studies focusing on the victim's perspective have highlighted that interpersonal maltreatments such as social exclusion (i.e., ostracism) or intragroup

disrespect can drive the emergence of self-dehumanization (Bastian & Haslam, 2010; Renger *et al.*, 2016). Therefore, certain social categories or conditions, such as belonging to disadvantaged groups or being socially deprived within society, make people more susceptible to social ostracism or maltreatments, leading them to see themselves as less human and increase their awareness that they are perceived as less human by others (Brondolo *et al.*, 2009; Saminaden, Loughnan, & Haslam, 2010). Additionally, people in a low-power position viewed themselves, and perceived that others viewed them, as less human compared with people in a high-power position (Yang, Jin, He, Fan, & Zhu, 2015). In fact, low-power groups or those who suffer social deprivation (e.g., the homeless, immigrants, refugees) are not only expected to internalize self-dehumanization to a higher extent but also are more susceptible to suffer its negative consequences (Bastian & Haslam, 2010, 2011) and, thus, potentially report lower levels of psychological well-being.

So far, studies on perceived meta-dehumanization have mainly focused on the consequences that arise from being aware that one is perceived as less human, that is, increased dehumanization of others and a higher tendency to attack or refrain from giving support to outgroups (Kteily *et al.*, 2016). To our knowledge, no researchers have studied how one's socio-economic ranking (e.g., poverty, wealth) might impact the phenomenon of meta-dehumanization and the way it influences a person's psychological well-being. Based on the idea that low- and high-SES individuals internalize their deprived situation differently, we expected that a person's socio-economic ranking would make them differently aware of the dehumanized perception that people have towards them (Sainz, Martínez, Moya *et al.*, 2019) and negatively influence their psychological well-being. Specifically, we expected low-SES individuals in comparison with middle- or high-SES individuals to report higher levels of meta-dehumanization and worse self-reported psychological well-being. We were also interested in examining whether meta-dehumanization mediates the relationship between SES differences and subjective psychological well-being. To test these hypotheses, we conducted a correlational (Study 1) and an experimental (Study 2) study. All data and supplementary materials are available online (<https://osf.io/cxyd5/>).

STUDY 1

The main goal of this study was to analyse the relationship between SES (both OSS and SSS), perceived meta-dehumanization, and subjective psychological well-being. We expected that SES would negatively predict meta-dehumanization (Hypothesis 1) and positively predict subjective well-being (Hypothesis 2). Moreover, we expected to find a mediation of meta-dehumanization in the relationship between SES (both OSS and SSS) and subjective well-being (Hypothesis 3).

Method

Participants and procedure

We decided to implement our study in a highly unequal context in which socio-economic differences would be more salient, thus constituting a better context for identifying the process in which we are interested. Therefore, we recruited participants from the general population in a northern industrial city of Mexico, a place that has a Gini index of .44. The Gini coefficient is a score that reflects the level of income inequality in a population; this index ranges from 0 (i.e., most equal society in which the income is the same among all

members of the population) to 1 (i.e., most unequal society in which all income is hoarded in the hands of one single individual; CONEVAL, 2018).

To collect data, we distributed an advertisement including the survey about the well-being of the population through social media. Participants volunteered for the study in exchange for their participation in a raffle (3,000 MXN/US\$150). We calculated sample size based on a small effect of SES on well-being (Kraus & Park, 2014). G-power analysis indicated that a minimum of 485 participants were required ($f = .02$, $\alpha = .05$, 80% power; Faul, Erdfelder, Buchner, & Lang, 2009). The final sample was composed of 990 participants (678 females, 310 males, 2 non-binary; $M_{age} = 36.96$, $SD = 11.09$). Once participants agreed to participate, they responded to the following measures:

Objective socio-economic status

We measured the objective indicators of SES using six items from the NSE AMAI (2018). This scale was created to classify households that make up Mexican society according to the extent to which each family covered its economic needs ($\alpha = .700$; e.g., *'In your home, how many rooms are used for sleeping, without counting corridors or bathrooms?'* from *Zero* to *More than four*). Scores are computed by adding up the responses of the participants.

Subjective socio-economic status

To indicate their perceived SES, we asked participants to locate their family on a 10-step ladder, having in mind the socio-economic differences that can be found in their society (Adler *et al.*, 2000). Before rating their subjective situation, they were informed that people at the bottom of the ladder are the people who are the worst off (i.e., least money, least educated, and least respected jobs), whereas people at the very top are the people who are the best off (i.e., most money, most educated, and most respected jobs).

Meta-dehumanization

We asked participants to rate how they think other people or groups see them, having in mind the socio-economic situation in which they stand in their society. As in previous studies (Bastian *et al.*, 2012), participants responded to eight items assessing the attribution of both human nature (e.g., *'I felt that others see me as if I were emotional, like I was responsive and warm'*, reversed) and human uniqueness (e.g., *'I felt that others see me as if I was unsophisticated'*). Responses ranged from 1 (*Not at all*) to 7 (*Very much so*). In line with previous studies on self-dehumanization, a single score of meta-dehumanization was created using all the items ($\alpha = .662$).

Subjective psychological well-being

Participants responded to the psychological well-being scale (Ryff & Keyes, 1995) adapted for Spanish speakers by Díaz *et al.* (2006). The adapted version of the scale is composed of 29 items that address different aspects of psychological well-being (e.g., *'In general, I feel safe and positive with myself'*; *'I have not experienced many close and trustful relationships'*, reversed). We computed a general score of well-being ($\alpha = .911$). Responses ranged from 1 (*Completely disagree*) to 7 (*Completely agree*).

Finally, participants reported some demographic information (age, gender, language, nationality, and postal code) and were thanked for their participation in the study.

Results

First, we computed correlations among the measures included in the study (Table 1). Results indicated that both dimensions of SES, OSS and SSS, were related to each other but also to the other variables included in the study. Second, we conducted multiple regression analyses to examine whether both OSS and SSS predicted the variables included in the study (Table 2). Results seemed to point out that both indicators of SES negatively predicted the meta-dehumanization and positively predicted the subjective well-being of our participants (supporting Hypotheses 1 and 2).

Finally, we conducted two separate mediational analyses (PROCESS model 4, bootstrapping 10,000 samples, 95% CI; Hayes, 2018) of meta-dehumanization in the relationship between SES (OSS and SSS) and subjective psychological well-being (Figure 1). Results showed a significant indirect effect of meta-dehumanization in the relationship between OSS and well-being (*Completely standardized indirect effect* = .131, *SE* = .016, 95% CI [0.101; 0.163]), but also a significant indirect effect of meta-dehumanization in the relationship between SSS and well-being (*Completely standardized indirect effect* = .108, *SE* = .015, 95% CI [0.079; 0.137]). We ruled out alternative mediational models (see Appendix S1).

Discussion

In the present study, we addressed differences in the attribution of meta-dehumanization and subjective psychological well-being based on both the OSS and the SSS of our participants. In general, analyses conducted to assess the relationship between OSS/SSS, meta-dehumanization, and subjective well-being showed the expected relationship among the variables. Thus, having a higher SES predicted a lower tendency to think that other people dehumanize them, a perception that was related to reporting a higher level of well-being. This is in line with previous evidence that has shown that low-SES groups are more likely to have self-negative evaluations (Kraus & Park, 2014), whereas high-SES groups tend to have a more positive perception of themselves (Piff, 2014). The current results extend these findings to the realm of human perceptions and psychological well-being.

Furthermore, analyses indicated that meta-dehumanization mediated the relationship between OSS/SSS and subjective well-being. This implies that, in part, having more OSS/SSS leads people to perceive higher subjective psychological well-being, which seems to be related to the extent people think they are valued within their society as more or less human by others. Previous researchers identified that people's well-being might be influenced by many factors, from their living conditions to the social recognition they receive (Diener & Lucas, 2000). Therefore, even though these results only showed a partial mediation, it is important to highlight the role of perceiving that others consider one as not being fully human as a potential factor that undermines one's subjective well-being.

Finally, previous research suggested that subjective perceptions or social comparisons among individuals or groups are better predictors of individual self-evaluations than objective indicators of SES (Boyce *et al.*, 2010). This does not seem to be applicable to our

Table 1. Correlations between the measures included in Study I

	Mean (SD)	1	2	3	4	Scale points	Minimum	Maximum	Skewness	Kurtosis
OSS	172.40 (53.52)	–	.443*	–.285*	.219*	0–300	36	300	.047	–.696
SSS	5.48 (1.60)		–	–.242*	.277*	1–10	1	10	–.028	–.310
Meta-dehumanization	2.70 (.93)			–	–.486*	1–7	1	6.75	.457	.126
Subjective well-being	5.21 (.99)				–	1–7	1.89	5.20	–.479	–.263

OSS = objective socio-economic status; SSS = subjective socio-economic status.
 * $p \leq .001$.

Table 2. Multiple regression analysis of socio-economic status (objective and subjective) on meta-dehumanization and on subjective psychological well-being in Study 1

	Meta-dehumanization $F_{(2,987)} = 53.64^*, R^2 = .098$		Subjective well-being $F_{(2,987)} = 47.74^*, R^2 = .088$	
	β (SE)	95% CI	β (SE)	95% CI
OSS	-.221 (.034)*	[-.288, -.155]	.120 (.034)*	[.053, .186]
SSS	-.144 (.034)*	[-.210, -.078]	.224 (.034)*	[.157, .290]

OSS = objective socio-economic status; SSS = subjective socio-economic status.

Coefficients are standardized.

* $p \leq .001$.

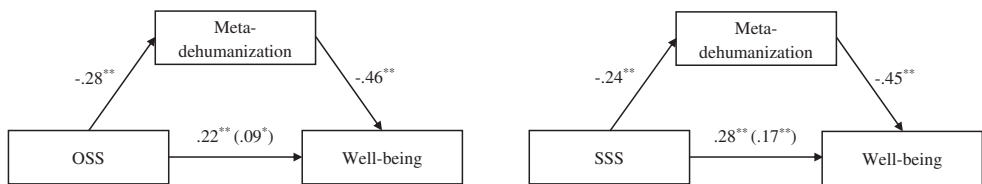


Figure 1. Mediation analysis of meta-dehumanization in the relationship between objective (OSS) and subjective (SSS) socio-economic status and psychological well-being. Direct effects after including the mediator are in brackets. ** $p \leq .001$; * $p \leq .05$.

study because both dimensions of SES predicted the outcome variables. As stated in previous research, contextual/cultural factors (Curhan *et al.*, 2014) or even the way OSS is measured (Kraus, 2018) could undermine the capability of predicting people’s subjective position. In our study, participants came from an industrial city that has an elevated level of income inequality, and a large amount of the city population is under the poverty line (CONEVAL, 2018). Therefore, it could be possible, yet not tested, that in this type of highly unequal context, differences in material conditions (i.e., deprivation of food, goods, and services) are so salient that this variable has similar effects to subjective comparisons. Moreover, unlike previous researchers, we did not use raw income as a proxy of OSS. Instead, we implemented a specific measure created to capture the material conditions in which people live (e.g., number of rooms in the house, type of vehicle, access to resources such as Internet connection) that might be highly relevant and salient in the Mexican context.

In short, through this study, we identified the role of meta-dehumanization in the relationship between SES (both OSS and SSS) and subjective well-being. To confirm the causal role that SES plays in the perceptions of meta-dehumanization and in the evaluation of people’s well-being, we decided to implement a preregistered second study with an experimental approach.

STUDY 2

In this study, we experimentally addressed the influence of SES on the perceived meta-dehumanization and subjective psychological well-being of the participants. Specifically,

we expected that differences in SES (i.e., low-, middle-, or high-SES groups) would drive differences in the perceived meta-dehumanization. Participants in the low-SES condition would have a higher perception of meta-dehumanization compared with participants in the middle- or high-SES condition (Hypothesis 1). We also expected that differences in SES would foster differences in perceived subjective well-being. Thus, participants in the low-SES condition would have a lower perceived subjective well-being, compared with participants in the middle- or high-SES condition (Hypothesis 2). Finally, we tested the mediational effect of perceived meta-dehumanization in the relationship between SES (low, middle, or high groups) and perceived well-being (Hypothesis 3). A preregistration of the hypotheses is available online (<https://osf.io/a8tek>).

Method

Participants and procedure

We computed the sample size for a small-medium effect size, based on the results from our previous study (the smallest correlation in Study 1 was $r = -.219$, which equals to $f = .22$). G-power analysis for a between-subjects analysis of variance ($f = .22$, $\alpha = .05$, 80% power, 3 groups) revealed that a minimum of 203 participants were required. The final sample was composed of 354 Mexican students (230 females, 123 men, 1 non-binary, $M_{age} = 24.09$, $SD = 9.34$) who volunteered in exchange for their participation in a raffle (3,000 0MXN/US\$150). We asked participants to take part in a study in which they would be asked to imagine that they were going to start a new life in another society and would be asked some questions about their experiences. Once they agreed to participate, they were presented with the following information:

Socio-economic status manipulation

We manipulated the SES of the participants by assigning them to different income groups in a fictitious society (see Jetten, Mols, & Postmes, 2015, for a similar procedure). We told participants that they would start a new life in a society called 'Bimbola' and would need to make some decisions to settle down in their new life (see Appendix S1). We provided them with some details about the society, such as its currency (Bimbola dollars) and its socio-economic structure (i.e., three income groups from the poorest to the wealthiest). Once we had introduced participants to the new society, we randomly assigned them to one of the possible conditions: low (less than 5,000 Bimbola dollars)-, middle (between 35,000 and 55,000 Bimbola dollars)-, or high-SES income groups (more than 150,000 Bimbola dollars). After we assigned them to one condition, we asked them to purchase some items (a house, a car, and a vacation destination) that they would require in their new life in the society. As in the previous studies that used the Bimbola manipulation (e.g., Jetten *et al.*, 2015), participants were uniquely allowed to purchase the items that they could afford based on the income group they were previously assigned to (e.g., participants in the low-SES income group could only afford the cheapest, second-hand cars). Once they had picked out their house, car, and vacation destination, participants responded to a manipulation check question regarding the OSS of their income group in Bimbola ('To which group were you assigned?'). Answers were categorical: income group 1 (more than 150,000 Bimbola dollars), income group 2 (between 35,000 and 55,000 Bimbola dollars), or income group 3 (less than 5,000 Bimbola dollars). A manipulation

check question about their SSS in Bimbola was also included ('Where would you place your income group on the slider?' from 1 [*Low-SES group*] to 3 [*High-SES group*]).

We decided to implement this procedure because this paradigm allowed us to manipulate both dimensions of SES (i.e., OSS and SSS). This is because we randomly assigned participants to one income group with specific material conditions (e.g., we informed them about their available income or the material conditions in which they live, such as their house or their car), leaving them in a specific OSS, while at the same time, we made them aware of the differences between their group and others (e.g., we constantly presented them with stimuli destined for other groups, such as their houses or their cars), allowing them to subjectively compare their socio-economic position within their society (i.e., SSS).

Pilot study

We conducted a pilot study to select the items (i.e., houses, vehicles, and holiday destinations) that we would present in the experimental conditions (i.e., low-, middle-, and high-SES groups). We asked a total of 89 participants (59 women, 30 men, $M_{\text{age}} = 25.21$, $SD = 8.87$) from the general population to rate the value of the different items from 1 (*Low price/Cheap*) to 5 (*High price/Expensive*). We finally selected three items (i.e., houses, vehicles, and holiday destinations) for each condition (i.e., low-, middle-, and high-SES groups; see Appendix S1). Low-SES group holiday destinations were not selected because in this condition, we told participants that they could not afford to go on vacation. Results indicated no differences between the selected items inside each condition, but differences applied between conditions (i.e., low-, middle-, and high-SES groups). Thus, the selection of pictures was representative of each social class and adequate to use in the main study (Table 3).

Meta-dehumanization and subjective psychological well-being

As in the previous study, participants responded to the same eight items measuring meta-dehumanization applied to this experimental context (e.g., '*Living in the income group I was assigned to in Bimbola, I would feel that people considered me as refined and cultured*', $\alpha = .666$, reversed; Bastian *et al.*, 2012). One item was excluded from the analysis because it lowered the reliability of the scale (final $\alpha = .734$). Answers ranged from 1 (*Not at all*) to 7 (*Very much so*). Participants also responded to the shorter 18-item version of the Ryff's Scale of Psychological Well-being adapted for the current experiment (e.g., '*My social relationships in Bimbola will be supportive and rewarding*', $\alpha = .806$; Ryff & Keyes, 1995). Answers ranged from 1 (*Strongly disagree*) to 7 (*Strongly agree*).

Socio-economic status details of our participants and demographics

We also measured, as in the previous study, the OSS (six items; NSE AMAI, 2018; $\alpha = .642$) and SSS of the participants (10-step MacArthur ladder; Adler *et al.*, 2000) in the real world to include these measures as covariates in the analysis. Finally, participants provided some demographics information (gender, age, nationality) and were debriefed and thanked for their participation.

Table 3. Descriptive statistics (means and SD) and comparisons among the houses, cars, and vacations of each income group (i.e., low-, middle-, and high-SES groups) implemented in the experimental manipulation in Study 2

	Low-SES group	Middle-SES group	High-SES group	
Houses (general)	1.17 (.35)	3.14 (.43)	4.81 (.20)	$F_{(1,88)} = 20487.469, p < .001, \eta^2 = .996$
House 1	1.17 (.38) ^a	3.07 (.56) ^b	4.84 (.35) ^c	$F_{(2,176)} = .657, p = .520$
House 2	1.18 (.37) ^a	3.14 (.52) ^b	4.79 (.35) ^c	$F_{(2,176)} = 2.418, p = .092$
House 3	1.16 (.36) ^a	3.21 (.56) ^b	4.80 (.38) ^c	$F_{(2,176)} = .822, p = .441$
Cars (general)	1.68 (.47)	3.05 (.57)	4.89 (.29)	$F_{(1,88)} = 10571.470, p < .001, \eta^2 = .992$
Car 1	1.69 (.60) ^d	3.08 (.65) ^e	4.90 (.27) ^f	$F_{(2,176)} = .093, p = .911$
Car 2	1.69 (.56) ^d	3.02 (.58) ^e	4.89 (.36) ^f	$F_{(2,176)} = .850, p = .429$
Car 3	1.67 (.52) ^d	3.04 (.62) ^e	4.87 (.30) ^f	$F_{(2,176)} = 1.111, p = .332$
Vacations (general)	–	2.99 (.53)	4.62 (.38)	$F_{(1,88)} = 1425.056, p < .001, \eta^2 = .992$
Vacation 1	–	2.97 (.76) ^g	4.62 (.47) ^h	–
Vacation 2	–	2.94 (.62) ^g	4.62 (.46) ^h	$F_{(2,176)} = 1.106, p = .333$
Vacation 3	–	3.05 (.62) ^g	4.62 (.52) ^h	$F_{(2,176)} = .001, p = .999$

Within-subject's comparisons are signalled with superscript letters. Between-subjects comparisons are above the within-subjects comparisons.

Results

First, results indicated that the manipulation was successful. Participants correctly identified the OSS of their experimental condition, $r = .987, p < .001$, and the SSS of the income group to which they were assigned, $F_{(2,353)} = 681.852, p < .001, \eta_p^2 = .795$, with differences between low ($M = 1.21, SD = .37$), middle ($M = 2.11, SD = .23$), and high-SES ($M = 2.80, SD = .37$) income groups.

Second, we conducted between-subjects analyses of variance to identify differences in meta-dehumanization and subjective psychological well-being based on their income group (i.e., low-, middle-, or high-SES group), controlling for the real OSS and SSS of our participants. First, results showed differences in meta-dehumanization between low ($M = 4.59, SD = 1.12$), middle ($M = 2.72, SD = .73$), and high-SES income groups ($M = 2.99, SD = .83$), $F_{(2,353)} = 141.709, p < .001, \eta_p^2 = .448$ (Hypothesis 1). Simple comparisons showed significant differences when comparing the low-SES group with the other income groups, but not between the middle- and high-SES groups. Second, results showed differences regarding the subjective well-being of the low ($M = 4.38, SD = 1.03$), middle ($M = 5.21, SD = .74$), and high-SES ($M = 5.14, SD = .85$) income groups, $F_{(2,353)} = 31.43, p < .001, \eta_p^2 = .153$, supporting Hypothesis 2. We found no simple differences between the middle- and high-SES groups. Results also indicated that the covariates did not exert a significant effect on the differences in meta-dehumanization (OSS: $F_{(1,353)} = 2.36, p = .125$; SSS: $F_{(1,353)} = .869, p = .352$) and only had a small effect on participants' perceived well-being (OSS: $F_{(2,354)} = 2.63, p = .105$; SSS: $F_{(2,354)} = 7.25, p = .007, \eta_p^2 = .020$). We performed analyses including and excluding the covariates, with no changes in the pattern of results. This lack of influence highlights that the real SES of our participants did not modify the way their income groups in Bimbola were perceived by others, in that fictitious society, or how they evaluated their subjective well-being.

Third, we conducted multicategorical mediational analyses to test the indirect effect of meta-dehumanization in the effect of the SES manipulation on perceived subjective psychological well-being (PROCESS model 4, bootstrapping 10,000 samples, 95% CI; Hayes, 2018; Figure 2), controlling for the real OSS and SSS of our participants. To perform the analysis, we used indicator coding, following recommendations from Hayes and Preacher (2014): The low-SES income group was used as the reference condition. Thus, we compared the low- with the middle-SES income group (D1) and the low- with the high-SES income group (D2) separately. Results showed a significant indirect effect of meta-dehumanization in the relationship between D1 (low- vs. middle-SES group) and psychological well-being (*Partially standardized indirect effect* = .71, $SE = .10$, 95% CI [0.510, 0.922]), but also a significant indirect effect of meta-dehumanization in the relationship between D2 (low- vs. high-SES group) and well-being (*Partially standardized indirect effect* = .61, $SE = .09$, 95% CI [0.441, 0.806]). These results support Hypothesis 3, showing that meta-dehumanization mediates the relationship between SES and psychological well-being.

Finally, to explore the third comparison that was not computed in the previous analysis (middle- vs. high-SES group), we conducted an alternative multicategorical mediational analysis by modifying the coding system. To do so, we used the middle-SES income group as the reference group and computed D1 (middle- vs. low-SES group) and D3 (middle- vs. high-SES group), which was the missing comparison in the previous analysis (Figure 3). Results showed that meta-dehumanization mediated the relationship between D3 and psychological well-being (*Partially standardized indirect effect* =

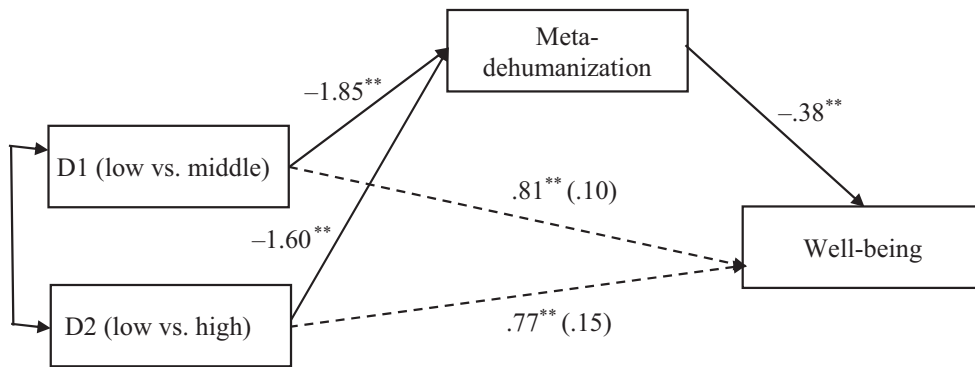


Figure 2. Mediation analysis of the meta-dehumanization in the relationship between socio-economic status (multicategorical: low- vs. middle-SES; low- vs. high-SES condition) and subjective well-being, controlling for the participants’ socio-economic status (objective and subjective). Direct effects after including the mediator are reported between brackets. ** $p \leq .001$.

-.09, $SE = .04$, 95% CI [-0.182, -0.018]), but the *direct path* from D3 to well-being was non-significant. We ruled out alternative mediational models (see Appendix S1).

Discussion

In this study, we wanted to experimentally assess the influence of SES (low-, middle-, and high-SES groups) on meta-dehumanization and perceived subjective well-being. In general, results indicated that the Bimbola manipulation (Jetten *et al.*, 2015) was successful. Participants in the low-SES condition became more aware of their dehumanized position and reported less subjective psychological well-being compared to both the middle- and high-SES groups. The latter two groups, instead, did not differ from each other. Moreover, results of the multicategorical mediational analysis highlighted that meta-dehumanization mediated the relationship between SES and subjective psychological well-being when we compared the low- and middle-SES as well as low- and high-SES

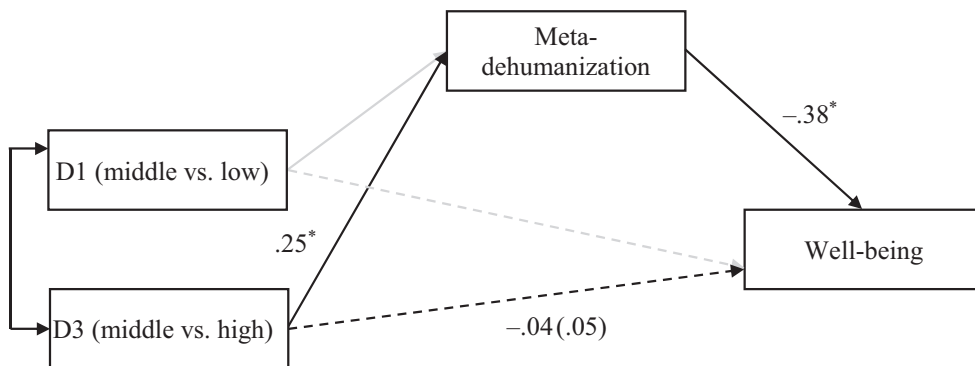


Figure 3. Mediation analysis of the meta-dehumanization in the relationship between socio-economic status (multicategorical: middle- vs. high-SES condition) and subjective well-being, controlling for participants’ socio-economic status (objective and subjective). Direct effects after including the mediator are reported between brackets. * $p \leq .05$.

groups. We also found this mediational relationship when we compared the middle- and high-SES groups, but with the absence of a direct effect due to the lack of differences in well-being between middle- and high-SES conditions.

This pattern of findings clearly indicates that the main differences regarding those groups that find themselves at the bottom of society (those who have limited access to resources) in comparison with the other groups that have their material needs covered (i.e., middle- or high-SES groups). The unexpected lack of differences between middle- and high-SES groups could indicate that people perceive that SES differences have an influence on people's lives until they reach a certain level of wealth (Diener & Oishi, 2000). Alternatively, it could be that people can make more accurate judgements about the detrimental life conditions of low-SES groups compared to the benefits of high-SES groups (Kraus, 2018).

In short, these results suggest that efforts should be made to understand the psychosocial consequences for low-SES groups because they are the ones who are aware of their dehumanized position in society. Importantly, this awareness negatively affects their psychological well-being.

GENERAL DISCUSSION

The main goal of the present research was to analyse to what extent SES (i.e., low-, middle-, or high-SES groups) fosters subjective well-being through meta-dehumanization (i.e., people thinking that others deny them humanity). We conducted a correlational and an experimental study to accomplish this goal. Results indicated that, in general, meta-perceptions of dehumanization and subjective well-being were related to people's socio-economic standing. In both studies, people experiencing a disadvantaged position (i.e., low-SES groups) felt that they were considered less human and had lower levels of self-reported well-being compared with groups in a more privileged position (i.e., middle- and high-SES groups). This pattern of results seems to indicate that potentially stable conditions – such as one's socio-economic standing – affect not only people's psychological well-being (Anderson *et al.*, 2012), but also how they think they are perceived by others in human terms. These results are in line with and extend previous studies that examined how other social disparities, such as power dynamics (e.g., humanity is reduced among the powerless; Yang *et al.*, 2015), can undermine people's meta-perceptions in human terms.

Furthermore, these findings confirm not only that disadvantaged groups face worse self-representations, but also that more advantaged groups are less willing to interiorize disparaging perceptions that people might have about them. For instance, previous studies identified that not only disadvantaged groups but also advantaged groups tend to be stereotyped (Durante *et al.*, 2017) and dehumanized (Sainz, Martínez, Moya *et al.*, 2019; Sainz, Martínez, Rodríguez-Bailón *et al.*, 2019; Sainz, Martínez, Sutton, Rodríguez-Bailón, & Moya, 2019). Although dehumanizing high-SES groups might have consequences in terms of the attitudes that people hold about the way their wealth was acquired or the extent to which redistribution policies should be supported (Sainz, Martínez, Rodríguez-Bailón, *et al.*, 2019), high-SES individuals seem to be less aware of these dehumanizing perceptions that are held against them, leaving their subjective well-being untarnished. Therefore, even though groups at both extremes of the social ladder are the targets of dehumanized depictions, only those facing scarcity are prone to

internalize this dehumanized perception, negatively affecting their psychological well-being.

The differences among the SES groups in the way they determine meta-dehumanization and subjective well-being can be tentatively explained based on the literature of the psychological aspects of social classes. Previous literature has addressed how poor and rich groups differ in terms of their psychology, highlighting that low-SES people seem to perceive the world as a threat due to their lack of control in many domains of their lives. This has led them to rely on social support (e.g., relatives, friends, peers, helping organizations) to a higher extent, making them more susceptible to be influenced by others' opinion about them (Kraus *et al.*, 2009; Kraus *et al.*, 2012) or to assimilate the negative perceptions that others have about them to a higher extent (Kraus & Park, 2014). In comparison, high-SES groups have a higher sense of control, which potentially makes them rely less on others and less willing to look for support in their social circles (Kraus *et al.*, 2009; Kraus *et al.*, 2012). Moreover, their independent self-construal (Easterbrook *et al.*, 2020) along with their tendency to feel more entitlement and to have narcissistic personalities (Piff, 2014) could potentially limit negative meta-perceptions and make them less aware of how society perceives them. In short, these psychological differences that have been associated with low- versus high-SES groups might be responsible for the observed differences in meta-dehumanization and could be a topic of future studies that deepens our understanding of the way social class psychology influences the present results.

Overall, these findings suggest that future research and interventions need to focus on the deprived situation of low-SES groups because they are the ones that suffer the negative consequences on well-being compared to the socio-economic groups that have their basic needs covered. One way to tackle this problem might be to implement redistribution policies that would allow low-SES groups to cope with their plight (Lundberg, Fritzell, Åberg-Yngwe, & Kölegård, 2010). Indeed, research has indicated that redistribution policies not only drastically improve the situation of those who are experiencing deprived material conditions, but also, at the same time, such measures do not damage the well-being or health of those who have more than enough resources to cover their basic needs (Cohen *et al.*, 1999).

Limitations also apply to the present research. First, even though no gender effects are typically reported in the literature on income inequality, it is important to note that we had an unequal amount of female (compared with male) participants in the studies. Future studies should be more cautious in order to avoid gender imbalance within the samples. Second, we did find an influence of both OSS and SSS on meta-dehumanization and well-being in the correlational study. However, the extent to which these variables predicted these outcomes was lower than expected. We considered that this pattern of results might be shaped by personal self-perception biases. Having in mind that previous research highlights how groups and individuals are actively motivated to hold a human representation of their ingroup or themselves (Vaes *et al.*, 2012), even by actively humanizing ingroup flaws (Koval, Laham, Haslam, Bastian, & Whelan, 2012), we considered that this process could have undermined the tendency to report meta-dehumanization and low levels of psychological well-being. This might be especially true among the disadvantaged groups, because they might downplay such perceptions to avoid confrontation with their deprived social position. Third, when performing the studies, results indicated that alternative mediational models by using well-being as the mediator (Appendix S1) are less plausible. This is in line with previous literature that pointed out how dehumanization is often the precursor of negative consequences at the

individual or group level (e.g., Bastian & Haslam, 2011; Kouchaki *et al.*, 2018). However, future studies should manipulate meta-perceptions of dehumanization to confirm its role as a precursor of well-being as a function of SES. Moreover, even though the Bimbola paradigm (Jetten *et al.*, 2015) successfully managed to represent the experience of being in a different SES group, future studies should implement more naturalistic manipulations of SES. This will allow us to replicate the present findings and strengthen our results.

Additionally, future researchers could extend the current findings by exploring how the perceived gap between low- and high-SES groups within a society could influence meta-dehumanization and perceived well-being. Previous research indicated that well-being could be influenced by the perceived (up or down) social comparisons within a given neighbourhood (Wang, Schwanen, & Mao, 2019). Thus, it might be expected that meta-dehumanization and well-being will worsen for low-SES groups when, in their daily life, they are confronted in different contexts (e.g., jobs, schools, residential areas) with higher SES groups. Furthermore, previous research indicated that more unequal societies have higher prevalence of psychological problems (anxiety, depression, e.g., Wilkinson & Pickett, 2017) that affects all citizens independently of their SES. In the context of our study, it might be possible that higher (vs. lower) inequality could potentially harm the whole population by creating perceptions of meta-dehumanization and lowering well-being. However, even when higher inequality hurts everyone, we can still expect that those who are struggling to a higher extent will bear the burden of its negative consequences the most (Fournier, 2019). Additionally, the present findings could be influenced by other possible factors such as the participants' level of tolerance to inequality (Wiwad *et al.*, 2019). It may be the case that those with lower tolerance of income inequality have higher perceptions of suffering among low-SES groups, and lower perceptions of the benefits enjoyed by high-SES groups, whereas those with a greater tolerance of income inequality have lower perceptions of suffering among low-SES groups and higher perceptions of the benefits enjoyed by high-SES groups.

Finally, researchers could expand these findings by not only focusing on people's well-being as a function of low-SES groups' dehumanized position but also analysing other specific facets of their plight. For instance, previous research indicated that deprived material conditions lowered people's cognitive resources (Shah, Mullainathan, & Shafir, 2012) and self-dehumanization led to deconstructive mental states (Bastian & Haslam, 2011). In the same vein, it can be expected that meta-dehumanization could have similar detrimental outcomes that could increase the barriers and difficulties that, in particular, low-SES groups face when dealing with their economic decisions or when they get involved in interclass interactions (Fiske, Moya, Russell, & Bearns, 2012).

In short, previous evidence has shown that SES differences have a great influence on people's psychological tendencies and on how groups that are placed at both extremes of the social ladder are perceived. The present research extends these findings by providing evidence about the way SES can influence the meta-dehumanization and psychological well-being of different income groups. Compared to those who have their basic needs covered, people who face the deprivation of material conditions are not only forced to deal with their economic needs but need to cope with the awareness that other people hold dehumanized perceptions towards them, an awareness that worsens their psychological well-being. Efforts should be made to help those who suffer not only from their plight but also from the stigma associated with being at the bottom of the social ladder.

Author contributions

Mario Sainz: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Resources; Visualization; Writing – original draft; Writing – review & editing. Rocío Martínez: Conceptualization; Writing – review & editing. Miguel Moya: Conceptualization; Writing – review & editing. Rosa Rodríguez-Bailón: Conceptualization; Writing – review & editing. Jeroen Vaes: Conceptualization; Writing – original draft; Writing – review & editing.

Conflict of interest

All authors declare no conflict of interest.

Data availability statement

All data and Appendix S1 are available online (<https://osf.io/cxyd5/>).

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Supporting Information

The following supporting information may be found in the online edition of the article:

Appendix S1. Materials.