

### **Abstract**

The current research investigates the effect of a type of intergroup contact that has rarely been studied to date, class-based contact, on one's personal contribution to inequality. We conducted two studies with middle and upper class individuals. We first examined longitudinally whether positive contact with working class people reduces contribution to inequality (i.e., participants stating that they themselves contribute to maintaining the social hierarchy) whilst controlling for ideological factors. Lower levels of contribution to inequality were present in people with more and better contact, but the change over time was small in the absence of experimental manipulation. An experiment then showed that recall of positive (vs. negative) contact with working class people reduced participants' contribution to inequality and increased their willingness to participate in collective action for equality. These results suggest that facilitating spaces where members of different social classes can have positive interactions can contribute to reducing inequality.

*Keywords:* collective action; inequality; intergroup contact; system justification; social class

## **Positive Contact with Working Class People Reduces Personal Contribution to Inequality**

Inequality and social exclusion are some of the most pervasive problems in contemporary societies and they constitute an enormous challenge for Europe (European Commission, 2019). Previous research indicates that intergroup contact reduces prejudice and intergroup conflict (Pettigrew & Tropp, 2011; cf. Paluck et al., 2018), and sensitizes members of advantaged groups to the structural discrimination faced by the disadvantaged, which can ultimately help to achieve greater social justice (Reimer et al., 2017). This previous research has often focused on interethnic relations, and little is known about how contact between members of different social classes can stimulate or weaken efforts to maintain inequalities.

The current research aims to contribute to the literature on intergroup contact by investigating the role of an ignored type of contact, class-based contact. In particular, we conducted a first study to explore, among middle and upper class individuals, how contact with working class people and contribution to inequality are related to each other and change over time, in the natural context, without any external intervention. To get a cleaner estimate of the potential effects of contact on contribution to inequality, we controlled for the influence of ideological factors related to the perceived functioning of society, namely system justification, meritocratic beliefs, and materialism. In a second study designed to provide stronger evidence regarding the predictive effect of contact on contribution to inequality, we manipulated the quality of recalled contact with working class people and checked the effects on participants' anticipated contribution to inequality and on their willingness to participate in collective action on behalf of the working class.

### **Social Class**

Social class has been largely absent from psychosocial research until recently. Thomas and Azmitia (2014) attribute this lack of interest to the denial of class stratification, which would be caused by the wide acceptance of the meritocratic paradigm and the conceptualization of social class as fluid and controllable. Social class is perceived as a liquid category from which one can escape through personal effort, although in reality levels of upward mobility are falling or stalling in many countries (OECD, 2018). The paucity of empirical evidence on social class should not be interpreted as a symptom of its limited impact. On the contrary, social class exerts a remarkable influence over the course of our lifetime in multiple areas such as occupations, neighborhoods of residence, cultural preferences, physical and mental health, mortality rates, and self-concept (see Kraus & Stephens, 2012). Moreover, perceivers do categorize others according to social class along with other dimensions such as race (Weeks & Lupfer, 2004). In fact, people infer social class rapidly and accurately (Kraus et al., 2017) based on minimal facial cues (i.e., emotional expressions) and then use their stereotype-related impressions to make judgments (Bjornsdottir & Rule, 2017).

Researchers have traditionally used objective indicators of socioeconomic status (e.g., income, educational opportunities) to determine social class, but more recently subjective measures of social class have gained prominence (Kraus & Stephens, 2012). Because of the historical and current contribution of income levels to class categorization, and because of the importance of people's self-definitions for their class membership and their thoughts and behaviors, in this research, we focused on the two aspects of income and self-definition as particularly pertinent markers of class membership. In the current research, we categorized participants as middle or upper class if they self-identified in this way *and* had a level of income typical of such classes.

Paradoxically, affluent individuals tend to regard social class as more important to identity and are more aware of structural factors contributing to their success than lower-income individuals (Aries & Seider, 2007).

Class divides also exert a strong impact on the societal level. Countries with bigger income differences between rich and poor tend to perform worse than more equal countries in a wide range of social outcomes such as poorer health, lower educational performance, levels of violence and imprisonment, and lack of social cohesion (Wilkinson & Pickett, 2009). Despite its harmful consequences, income inequality has increased in most developed countries since 1990 (UNDESA, 2020). According to the Department of Economic and Social Affairs of the United Nations, the concern about balancing public budgets has led to cuts in public spending and investment, when redistribution through taxes and public spending is urgently needed to reduce inequality. The negative consequences of economic inequality are especially harmful and pervasive for those who are at the bottom of the pecking order (Wilkinson & Pickett, 2009). Indeed, recent data from 36 countries yielded a positive association between subjective status and the perceived legitimacy of the economic system, such that people with higher status tend to see the system as more legitimate than those with lower status (Brandt et al., 2020). Experimental evidence also shows that individuals who feel low in subjective status support redistribution more than those who feel high in subjective status, and they do so on the basis of fairness-related ideologies (Brown-Iannuzzi et al., 2015).

Although middle and upper-class individuals would benefit less than working class individuals from the redistribution of income and wealth, they might also contribute to reducing inequalities under some circumstances. Previous research offers examples of advantaged group members who get deeply involved in the struggle of the

disadvantaged as “allies” (e.g., Reimer et al., 2017; Russell, 2011). In other cases, the commitment of members of advantaged groups translates into support for compensation policies but not so much for preferential policies (Dixon et al., 2010). In any case, members of advantaged groups play a crucial role in social change or maintenance of the status quo because they have more power and resources than the disadvantaged. Thus, understanding the factors that motivate members of economically advantaged groups to preserve or maintain inequality is particularly valuable.

### **Intergroup Contact and Inequality**

Intergroup contact often has a significant impact on motivation to work towards social change (e.g., Hässler et al., 2020; Reimer et al., 2017; Tausch et al., 2015). The contact literature has been especially interested in ethnic or racial divides, whereas social class has not been explicitly addressed. The current research aims to shed light on the impact of class-based intergroup contact on the contribution to inequality by members of the middle and upper classes. Previous research exploring the association of contact between groups of different nature (e.g., Blacks and Whites, heterosexual and sexual minorities, members of the mainstream society and immigrants, etc.) and social change (Dixon et al., 2010; Reimer et al., 2017) can be helpful in understanding the effects of class-based contact.

Although only few studies have analyzed the influence of intergroup contact on how members of advantaged groups behave in relation to social inequality (Reimer et al., 2017), most of them have found significant effects. However, the evidence is somewhat mixed in that some studies found a negative correlation between contact and support for egalitarian policies, whereas others show a positive association. Some evidence suggests that positive contact may undermine motivation for social change among advantaged groups (Cakal et al., 2011; Jackman & Crane, 1986), because such

contact may insinuate that members of the disadvantaged group accept the status quo (Dixon et al., 2012), which can buttress intergroup inequality (Jost et al., 2017).

Notwithstanding these findings, the hypothesis that intergroup contact may tip members of advantaged groups toward equality has garnered support (e.g., Di Bernardo et al., 2019; Dixon et al., 2007, 2010). For instance, Di Bernardo et al. (2019) recently observed that more quantity and quality of contact of Italians with immigrants were moderately associated with stronger intentions to engage in actions for social change. Reimer et al. (2017) found that positive contact with LGBT (lesbian, gay, bisexual, and transgender) individuals had a small effect on LGBT activism longitudinally among heterosexual students. Likewise, Dixon et al.'s (2010) results indicate that White South Africans who had more frequent and more positive contact with Black South Africans reported moderately less opposition to race compensatory policies. In a recent study (12,997 individuals from 69 countries), Hässler and colleagues (2020) found small to medium positive associations between intergroup contact and support for social change towards greater equality among members of different advantaged (ethnic and heterosexual) groups. Finally, Vázquez et al. (2020) showed that positive contact with women—the disadvantaged group—was moderately associated with men's willingness to engage in collective action for gender equality, which suggests that contact might play a role even when intergroup relationships are characterized by high interdependence.

In addition to investigating whether intergroup contact influences social change, the previous literature has also explored potential mediating mechanisms. Positive contact with the disadvantaged group has been found to mobilize members of the advantaged group for equality by reducing the perceived legitimacy of the system (Di Bernardo et al., 2019), increasing awareness of outgroup discrimination (Vázquez et al.,

2020), fostering anger over injustice and empathy for outgroup members (Selvanathan et al., 2018), and also improving attitudes towards them (Reimer et al., 2017).

These same mechanisms that mediate the effect of contact between groups of different nature (e.g., gender, ethnic, racial, etc.) on the predisposition to social change could also act in the case of class-based contact. Having positive contact with working class individuals might lead middle and upper class individuals to have more positive perceptions of working class members, empathize more with them, and become aware of the discrimination and injustice they suffer, which would ultimately translate into more negative attitudes, emotions, and actions towards inequality. However, at the moment there is only preliminary evidence on class-based contact. In a natural experiment with 22 children in Indian schools, Rao (2019) found that personal contact with poor classmates promoted egalitarian preferences over monetary payoffs in a Dictator Game among rich students and reduced discrimination against poor classmates. Pansini et al. (2020) also showed that class segregation within the context of a Prisoner's Dilemma Game leads to an unequal redistribution of wealth.

Based on these studies and previous research exploring the association of contact between groups of different nature (e.g., Blacks and Whites, heterosexual and sexual minorities, members of the mainstream society and immigrants, etc.) and social change (Dixon et al, 2010; Reimer et al., 2017), we anticipate that positive contact with working class members will be related to a self-reported weaker contribution to inequality among middle and upper class individuals, in the sense of displaying behaviors that either contribute to keeping society the way it is or of challenging the status quo. But besides contact, other factors could additionally shape inequality-related behaviors, and the following three seem to be of particular relevance: system justification, meritocratic beliefs, and materialism.

### **Other Correlates of Attitudes towards Inequality**

System justification theory (Jost & Banaji, 1994) aims to explain why people accept or rebel against a system that harms themselves or others. Often, people seem to be motivated to excuse or defend their social, economic, and political systems (Jost et al., 2004). System justification undermines support for redistribution policies and willingness to help the disadvantaged because it reduces moral outrage over inequalities (Wakslak et al., 2007; see also Dawtry et al., 2015). System justification implies a greater acceptance of inequality.

Meritocratic beliefs might be considered as a specific type of system-justifying ideology (Bay-Cheng et al., 2015). Meritocratic beliefs assume that effort and personal skills are the primary determinants of success in life (Major et al., 2007). Differences between social classes are judged as more acceptable and legitimate if they are seen to be based on merit rather than on structural factors such as systemic injustice. High-status individuals endorse meritocratic beliefs more than low-status individuals (Kraus & Keltner, 2013), which would explain in part their greater preference to maintain society in its current structure (Bullock, 2017; García-Sánchez et al., 2020). Meritocratic beliefs imply a greater level of comfort in the face of inequality.

Finally, materialism reflects the importance individuals attribute to the acquisition and possession of material goods (Richins & Dawson, 1992). Materialism is discordant with caring about social justice and equality (Kasser, 2018) and intensifies class prejudice. Strongly materialistic individuals evaluate working class targets more negatively and are less likely to select them for a job than weakly materialistic individuals (Vázquez & Lois, 2020). Thus, materialism might entail a greater tolerance towards inequality.



Although we are not aware of any study that explores the relationships between system justification and meritocratic beliefs with materialism, we conjecture that these three sets of beliefs are related to the same ideological base positions in Western and consumer societies. They may therefore belong to a higher cognitive structure where their activation or their change is expected to occur consistently, such that they could jointly influence contribution to inequality.

### **Overview of Research**

In a first study, the intention was to explore, among middle and upper class individuals, how contact with working class people and contribution to inequality naturally change over time. More specifically, we were interested in investigating the way these variables change together and/or whether the changes in contribution to inequality could be anticipated by the initial levels of contact even if other ideological variables, namely system justification, meritocratic beliefs, and materialism, are controlled for. We measured, in two waves, the variables of contact (quality and quantity), contribution to inequality, system justification, meritocratic beliefs, and materialism. No manipulation or intervention took place in this study.

Although greater quantity and quality both are positively associated with more favorable intergroup attitudes (Pettigrew & Tropp, 2006), quality generally exerts a stronger impact than quantity (e.g., Binder et al., 2009; Dovidio et al., 2017; Vázquez et al., 2020). In line with previous findings, we predicted that quality of contact in wave 1 will predict changes in contribution to inequality in wave 2 more reliably than quantity while controlling for system justification, meritocratic beliefs, and materialism. Then, a second experimental study tested whether the quality of recalled contact with working class people *causally* influences participants' contribution to inequality and interest in collective action for the benefit of the working class.

Both studies were conducted in Spain, where there has been an interest in social class following the massive protests of the 15M movement against austerity policies in 2011. The income range associated with the middle class in Spain is 20,000 to 60,000 euros per year (Peláez Paz, 2014). From the outbreak of the economic crisis of 2008 to 2013, there was a significant thinning of middle class. The group of households with an annual income between 18,000 and 60,000 euros decreased from 55.5% to 49.6% (Peláez Paz, 2014). However, a periodic survey with a representative sample reveals that, currently, the great majority of Spaniards (71.1%) consider themselves middle class (16.7% consider themselves low or working class and only 5.8% consider themselves high class; Centro de Investigaciones Sociológicas, 2020). Spain is the country of the European Union with the sixth highest poverty rate, (living with an income below 60% of median income), with one in five people (21.5%) in this situation (Olías & Ordaz, 2020). Any Spaniard born in a low-income family takes four generations (120 years) to achieve a medium-income level, and 66% within the poorest quintile of the income scale will remain stagnant, whereas the average in the richest countries is 57% (García Vega, 2019). In addition to being one of the most unequal countries in the European Union (Gini index was 33.2 in 2019), Spain presents the highest level of early school leaving in the European Union (19.9% in 2015), and people between 25 and 34 years old whose parents had a low educational level in 2005 had a 45% chance of staying in that situation in 2011 (García Vega, 2019). In sum, social mobility can be considered relatively low and class membership often stagnant.

This, then, in the context in which the hypotheses were tested. The procedure of both studies was approved by the Ethical Committee of the university of the lead author. We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the studies.

## Study 1

In Study 1 we measured, in two waves, quality and quantity of contact, contribution to inequality, system justification, meritocratic beliefs, and materialism. The goal was to explore the relationships between those variables, the predictive capability of quantity and quality of contact on the changes arising in contribution to inequality after controlling for the effect of the ideological variables, and natural changes over time in these variables.

### Method

#### *Participants*

We invited all Social Psychology students from a distance learning education university to participate for course credits. We recruited 510 Spanish undergraduates (73.1% women,  $M_{age} = 34.15$ ,  $SD = 11.26$ ) who participated in the first wave and, of those, 498 (74.9% women,  $M_{age} = 33.80$ ,  $SD = 11.09$ ) completed the second wave. The students from this university are more heterogenous sociodemographically than typical undergraduates: they are older (around 35 years), distributed throughout the Spanish geography in urban and rural areas, and the majority have some professional employment (see Sánchez-Elvira et al., 2006). The inclusion criteria were firstly reporting a family income over 20,000€/year and secondly defining themselves as middle or upper class.

To estimate the minimum effect size that could be detected with our final sample size in a multiple regression with six predictors, as in the present study, we performed a sensitivity power analysis using G\*Power (Erdfelder & Buchner, 1996). The result of this analysis indicated that (with an  $n = 510$ ) an  $f^2 \geq .0271$  ( $R^2 \geq .0263$ ) would be enough to reject the null hypothesis assuming an alpha level of .05 and 80% power (the protocol of power analyses is presented in the supplementary material). This effect size is similar

to those presented in Reimer et al. (2017) in the relationships between collective action and intergroup contact, which leads to the conclusion that the study was sufficiently powered with our convenience sample.

### ***Procedure***

Participants were invited to participate in a 2-wave study about social class. They first were asked about their family income per year: < 20,000€, from 20,000 to 60,000€, or > 60,000€. Then, they read that social class category membership depends on multiple factors such as level of income, education, and occupation, and participants indicated whether they belonged to the low, middle or upper class. Those who reported an income over 20,000€ and self-identified as middle ( $n = 494$ ) or upper class ( $n = 16$ ) were included in the study. Those who did not meet the inclusion criteria (298 participants, 78.5% women,  $M_{\text{age}} = 29.66$ ,  $SD = 9.85$ ) were diverted to a different study.

Participants in this study were informed that they would complete two waves separated by one month. The questionnaires of wave 1 and wave 2 were identical, except that we collected sociodemographic data only in the first wave.

Participants first reported the *quantity of contact* that they have with working class people from 0 (*nothing*) to 10 (*a lot*). The remaining variables ranged from 0 (*strongly disagree*) to 6 (*strongly agree*).

*Contact quality* was evaluated by asking participants if the contact they had with working class people was pleasant, egalitarian, cooperative, and voluntary (based on Gómez et al., 2018),  $\alpha_s = .86$  and  $.87$  for the first and second waves, respectively.

*Contribution to inequality* was evaluated using four items from Brandt et al. (2020),  $\alpha_s = .78$  and  $.81$  for the first and second waves, respectively. Items were: “I contribute to keeping society the way it is”, “I contribute to maintaining the current social hierarchy”, “I don't do anything to change the current differences in power and

status in society”, and “I am not trying to change the current differences in power and status in society”. Higher scores on this scale indicate a greater contribution to inequality.

Then, we measured *materialism* by means of the 6-item Social Material Values scale from Richins (2004),  $\alpha = .84$  and  $.85$  for the first and second waves, respectively. Example items were: “I admire people who own expensive homes, cars, and clothes” and “Buying things gives me a lot of pleasure”.

*System justification* was measured by means of eight items adapted from Kay and Jost (2003),  $\alpha = .78$  for the two waves. Example items were: “In general, the Spanish political system operates as it should” and “Spanish society needs to be radically restructured” (reverse-scored).

*Meritocratic beliefs* were measured by means of the Personal Wherewithal subscale of the Neoliberal Beliefs Inventory (Bay-Cheng et al., 2015),  $\alpha = .90$  and  $.91$  for the first and second waves, respectively. Example items were: “Any goal can be achieved with enough hard work and talent” and “I’ve benefited from working hard, so there’s no reason others can’t”. Finally, participants were debriefed and thanked.

## **Results**

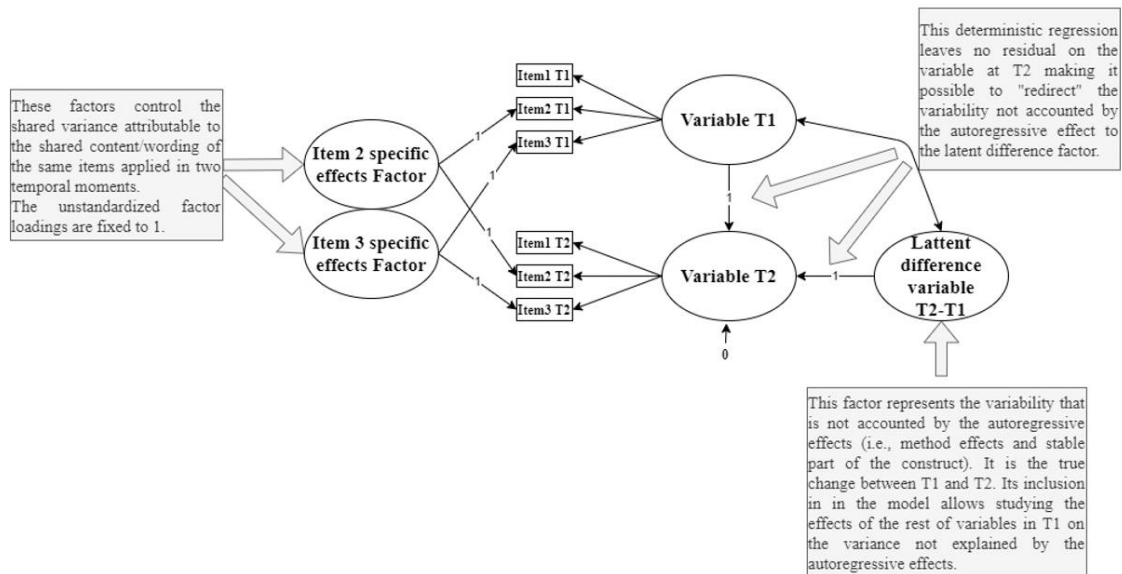
The means, standard deviations, and correlations between all the indicators are presented in Table 1 of Supplementary materials. Mardia’s multivariate tests, performed with the *mvn* R library (Korkmaz et al., 2014), regarding skewness (56328.27,  $p < .001$ ) and kurtosis (46.48,  $p < .001$ ), indicated a lack of multivariate normality, but this could be addressed by using maximum likelihood with restricted standard errors (MLR) estimator to estimate the parameters in the models below.

### ***Latent change model***

We performed a latent change model to explore the true changes over time in all the variables, their relationships, and their dependence on the variables at wave 1 (Geiser et al., 2010; Steyer et al., 1997). An explanation of this model is depicted in Figure 1. These models can offer exactly the same information as latent cross-lagged (autoregressive) models (i.e., whereas the autoregressive effects control the method effects and the stable part of the construct, the cross-lagged effects explain the “leftover” variability not accounted by the autoregressive effects, Geiser, 2013) but with some additional advantages. For example, in the latent change model, the “leftover” variability is presented as an independent latent variable representing the true change (without random measurement error) between temporal moments. This allows to clearly identify the effect of the variables of the first wave on the variables of the second wave after partialling out the autoregressive effects. Furthermore, the creation of the latent change variables permits estimating the true intraindividual change (error-free) in each variable (in the latent cross-lagged models this change is “measured” indirectly using the residuals). Getting access to this information is crucial to study individual differences but also to provide additional information regarding the relationship between the variables of both waves (i.e., the lack of relationships could also be due to low variability between both temporal moments).

**Figure 1**

*Explanation of a latent change model.*



We used Mplus v7.11 program (Muthén & Muthén, 1998-2012). Full information maximum likelihood was used to estimate missing values. Since the data did not meet the multivariate normality assumption, the maximum likelihood with restricted standard errors (MLR) estimator was used to estimate the parameters. The scaling correction factor for  $MLR-\chi^2$  is denoted as  $c$ . Acceptable model fit was set at  $RMSEA (\leq 0.06)$ ,  $CFI (\geq 0.95)$ , and  $TLI (\geq 0.95)$  following Hu and Bentler (1999). The Satorra-Bentler scaled chi-square (2001) was used to estimate chi-square differences between the nested models. The fit of the model and the search of scalar invariance (equal structure, factor loadings, and intercepts) was conducted as described by MacCallum (1986).

In the first place, we fitted a model with all the variables (quantity and quality of contact, contribution to inequality, system justification, meritocratic beliefs, and materialism) at waves 1 and 2 including indicator-specific effects as factors to control method effects (e.g., to control the method effects due to the shared content/wording of the same items applied in waves 1 and 2; see Geiser et al., 2010) in all the indicators

except from the item 2 of the contribution to inequality scale, which indicator-specific factor had a variance that was not statistically different from 0. The metric of the latent factors was defined by fixing the loading of the first item to 1. In the case of the item-specific factors, all factor loadings were fixed to 1<sup>1</sup>. Fit indicators were  $MLR-\chi^2(1694) = 2434.88, p < .001 (c = 1.0619)$ , the RMSEA was .03 [.03, .03] and the CFI was .95.

Secondly, we examined the longitudinal measurement invariance of the previous model. To that end, we constrained the model to obtain scalar invariance across time (equal factor loadings and intercepts between the same measures in the two waves). However, since this model showed statistical differences with the free model (i.e., not all the intercepts or factor loadings could be assumed as invariant between waves), we freed, one by one, according to the modification indices, the following intercepts to achieve partial invariance: i2, i6, and i7 in system justification and i2, i3, i4 in meritocratic beliefs. Additionally, the factor loadings of the i7 in system justification were also freed. According to Byrne et al. (1989), the lack of invariance in just these parameters is not detrimental to warrant adequate interpretations of the latent difference measures. Fit indicators were  $MLR-\chi^2(1736) = 2489.34, p < .001 (c = 1.0598)$ , the RMSEA was .03 [.03, .03] and the CFI was .95. The comparison between the free and the partial-scalar invariance models showed no statistically significant differences,  $MLR\chi^2-diff(42) = 53.95, p = .102$ .

Thirdly, we configured the latent change model (see Geiser et al., 2010; Steyer et al., 1997). In this model, the variable quantity of contact (the only non-latent variable

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<sup>1</sup> Due to the high collinearity between indicator-specific effects factors of items 2 and 8, and items 4 and 6 in the meritocratic beliefs scale, each quartet of items loaded in the same indicator-specific effect factor respectively. Additionally, we allowed correlating the uniqueness of the following items due to their explicitly shared content: contribution to inequality i3-i4 (both waves; .49  $p < .001$  and .51  $p < .001$ ), system justification i3-i7 (first wave, in the second wave it was fixed to 0 because it resulted to be statistically non-significant .35  $p < .001$ ) and i2-i5 (second wave .31  $p < .001$ , in the first wave it was fixed to 0 because it resulted to be statistically non-significant), and materialism i5-i6 (second wave .25  $p < .001$ ).



in the model) in the second wave was substituted by the difference in the quantity of contact between waves (defined as the subtraction of the values of the first wave from the second wave). Since this is the only observed variable in the model, this change did not affect the model fit. Fit indicators confirmed the good fit of the longitudinal model,  $MLR-\chi^2(1736) = 2489.34, p < .001 (c = 1.0598)$ , the RMSEA was .03 [.03, .03] and the CFI was .95. The zero-order correlations between all the variables included in the model are presented in Table 1. The inspection of these correlations would allow the reader to discard the fact that, in the next step, the regression on any variable of wave 1 would obscure associations of interest for our study. More specifically, it can be observed that the contact variables in wave 1 present no relationships with the variations in contribution to inequality in wave 2 (after controlling the cross-lagged effects).

**Table 1**

*Zero-order correlations between variables after controlling cross-lagged effects*

	1	2	3	4	5	6	7	8	9	10	11
1 Quantity (obs) w1											
2 Quality w1	.23**										
3 Inequality w1	-.14**	-.24**									
4 Materialism w1	-.05	-.13**	.33**								
5 System justification w1	-.15**	.16**	.24**	.24**							
6 Meritocratic beliefs w1	-.10*	-.21**	.25**	.32**	.64**						
7 Quantity Diff	-.59**	-.11*	.02	-.05	.05	.00					
8 Quality Diff	-.07	-.52**	.00	-.08	.02	.07	.17**				
9 Inequality Diff	.08	.04	-.40**	.00	-.10	-.12*	-.06	-.01			
10 Materialism Diff	-.02	-.04	-.06	-.27**	-.06	-.11	.10	.02	.08		
11 System justification Diff	.04	-.03	.05	-.04	-.29**	-.07	.02	-.07	.04	.22*	
12 Meritocratic beliefs Diff	.03	.05	-.02	-.06	-.10	-.34**	-.03	-.09	.04	.22**	.41**

*Note.* \*\* $p < .01$ ; \* $p < .05$ ; Diff = difference; w1 = wave 1; obs = observed variable.

Finally, in the same model, we regressed all the latent difference variables on all the variables of the first wave to explore their predictive capability with a special

interest in the relationship between contact variables and contribution to inequality. The resulting model was statistically equivalent to the previous one. Its standardized factor loadings, correlations, and regression coefficients are displayed in the figure of the Supplementary materials, whereas the intercepts and the unstandardized factor loadings are presented in Table 2, also in Supplementary materials. For the sake of clarity, we present a simplification of the latent change model in Figure 2.

**Descriptive statistics.** The means and standard deviations of the latent variables and the quantity of contact are presented in Table 2. The observation of the averaged values led us to affirm that our sample presented medium-high levels of contact (quality and quantity), low levels of ideological beliefs (materialism, system justification, and meritocratic beliefs), and low levels of contribution to inequality. As it can be observed, the true change that has taken place between the two waves has been small; this could have affected the size of the detected effects.

**Table 2**

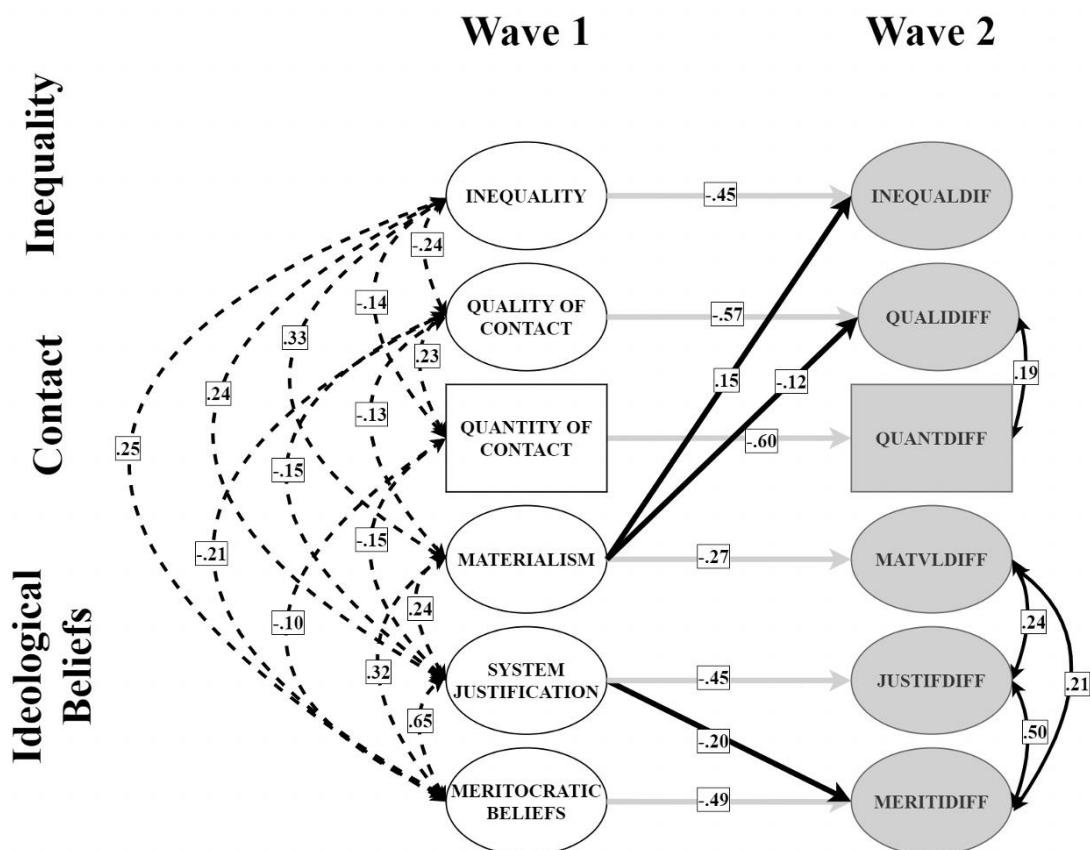
*Means and Standard Deviations of The Latent Variables Included in the Latent Change Model, and  $R^2$  of the variables at the second wave*

	Wave 1		Latent difference		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	$R^2$
Quantity (observable)	4.98	2.48	-0.23	2.28	.35
Quality	4.42	1.02	-0.32	1.06	.31
Inequality	2.21	1.27	0.23	1.08	.19
Materialism	1.37	1.32	0.12	0.70	.08
System justification	1.54	0.99	0.13	0.61	.12
Meritocratic beliefs	2.73	1.22	0.00	0.74	.14

**Cross-sectional analysis of wave 1.** As the dotted arrows of Figure 2 show (the complete model is provided in Figure 1 of the Supplementary materials), the relationships between the variables of the first wave are moderate but in coherence with the theoretical assumptions. As expected, higher scores of contribution to inequality tended to co-occur with lower scores of contact, such that the less frequent and less positive contact with working class people, the greater the individual contribution to inequality. Besides, quality of contact presented a stronger relationship with contribution to inequality than quantity. The ideological beliefs showed positive relationships with contribution to inequality, which was slightly stronger in the case of materialism. System justification and meritocratic beliefs presented a moderate/strong relationship.

**Figure 2**

*Simplified representation of the latent change model*

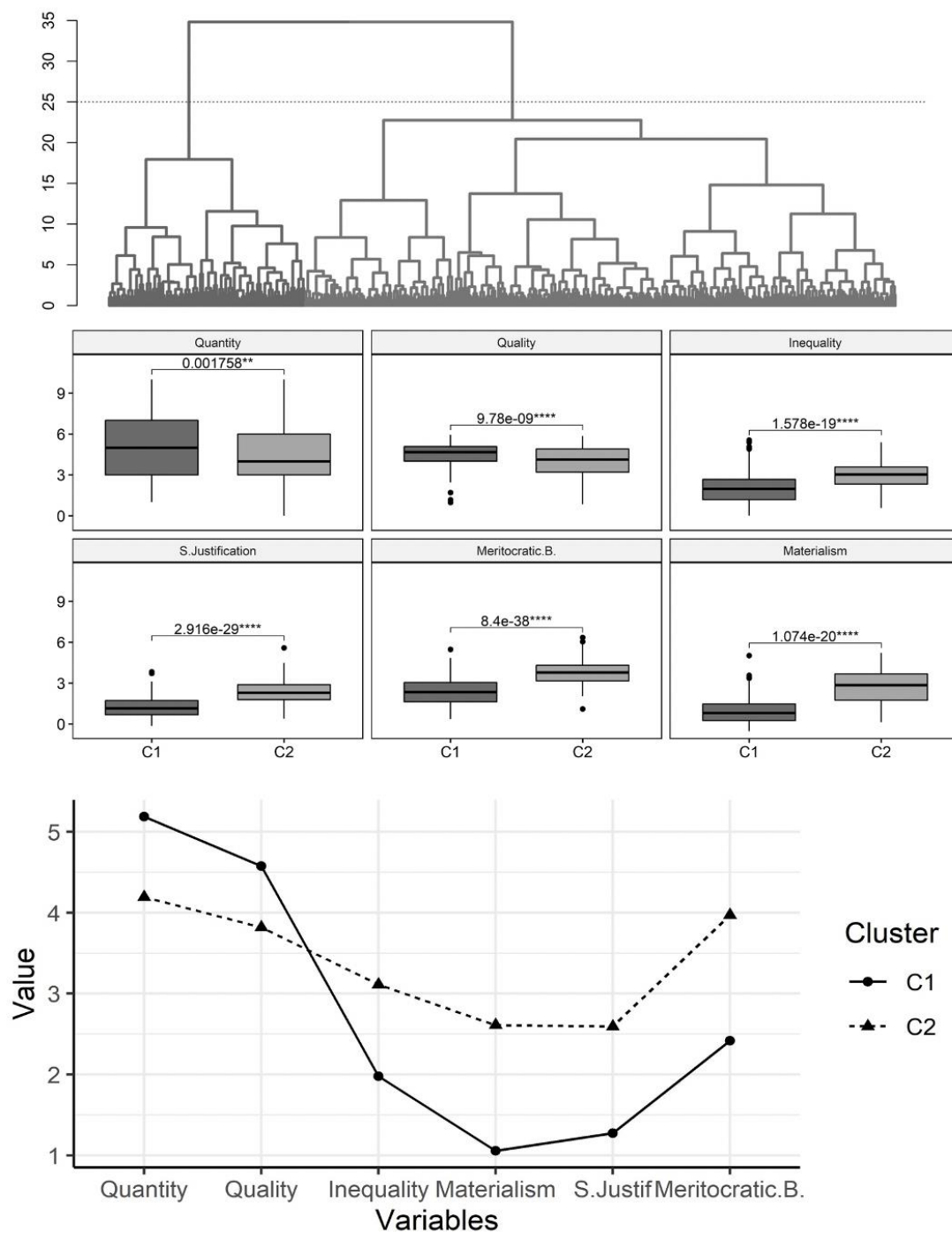


*Note.* INEQUAL = contribution to inequality; QUAL = quality of contact; QUANT = quantity of contact; MATVL = materialism; JUSTIF = system justification; MERITI = meritocratic beliefs. The suffix “DIFF” indicates *latent difference*. Only significant relationships are represented.

Even though the relationships are modest, their pattern allows us to identify two statistically significant different profiles in our sample. Using the *cluster* R package (Maechler et al., 2021), we performed a hierarchical cluster analysis (Euclidean distance and Ward method) on the standardized factor scores of the variables of the first wave detecting two differentiated profiles (see Figure 3;  $n$  Cluster 1 = 406;  $n$  Cluster 2 = 104). The Bonferroni-corrected *t*-tests between clusters showed statistically significant differences in all variables (accomplished using the *rstatix* R package; Kassambara, 2021). The result of these analyses is presented in Figure 3 (the plot was implemented using the *ggpubr* R package. Kassambara, 2020). Whereas Cluster 1 was composed of people with higher levels of contact and lower levels of ideological beliefs and contribution to inequality, Cluster 2 people presented the opposite configuration.

### **Figure 3**

*Dendrogram, cluster profiles, boxplots, and Bonferroni-corrected t-test comparisons.*



Note. C1= Cluster 1; C2 = Cluster 2. S. Justif= System justification.

**Longitudinal analyses.** The curved arrows on the left side of Figure 2 (see also the complete model in Figure 1 in Supplementary materials) represent the relationship between the variables at the second wave after controlling the autoregressive effects (method effects and the stable part of the construct), that is, the relationship between the true changes of the second wave. Quantity and quality of contact changed together in

the same direction, such that decreases in the quantity of contact tended to co-occur with decreases in quality. However, the changes in contribution to inequality, our variable of interest, did not covariate with the changes in the contact variables. The ideological beliefs tended to change together in the same direction but neither covariates with the changes in contribution to inequality. Thus, all relationships considered, it could be assumed that the changes in the contact variables, and those arisen in contribution to inequality, as well as ideological beliefs, took place independently.

Finally, the black, straight arrows of Figure 2 (see also Figure 1 in the Supplementary materials) represent the predictive effects of the scores of the first wave on the changes of the second wave (equivalent to cross-lagged effects). Initial scores of quantity and quality of contact did not predict changes in contribution to inequality. Only materialism scores explained part of the contribution to inequality scores (positive relationship, small effect) and also, unexpectedly, part of the changes in quality of contact scores (negative relationship, small effect). Even though it was not part of our a priori predictions, system justification scores accounted for part of the change of meritocratic beliefs scores in the second wave (positive relationship, small effect). This could be explored further in follow-up research.

## **Discussion**

Study 1 suggested that lower levels of contribution to inequality are present in people with more and better contact with working class people and with less willingness to justify the system and weaker meritocratic beliefs and materialistic values. As expected, quality of contact presented a slightly greater (negative) relationship with contribution to inequality than quantity of contact. However, the changes in the contribution to inequality over time did not correspond with changes in the quantity and

quality of contact or other variables with the exception of materialism. In fact, the results of the longitudinal design and the true change model indicate that, in a natural context without any planned intervention, the change experienced by our sample in the studied constructs (i.e., latent variables) has been small. This small variability in the latent change scores of our sample might explain why the changes in the contribution to inequality are not related to changes in quantity and quality of contact. In that case, we cannot exclude the possibility that changes in class-based contact, when they are large enough, can lead people to contribute to or fight against inequality. Other possibilities are that class-based contact does not affect contribution to inequality at all or that it does it but only indirectly through other variables.

We tried to clarify this point in another study. Given that in natural contexts class-based contact does not seem to vary substantially over time, in Study 2 we tested whether an external intervention on contact can generate changes in personal contribution to inequality. To that end, we experimentally manipulated the quality of recalled contact with working class people before assessing participant's contribution to inequality. Additionally, it could be argued that our measure of contribution to inequality could be too vague because it does not encompass concrete actions. To address this limitation, we added a second outcome measure, participants' willingness to participate in specific collective actions (e.g., signing a petition, attending demonstrations) on behalf of working class people.

## **Study 2**

In Study 2 we manipulated the quality of recalled contact by making positive or negative interactions with the working class salient and then measured anticipated contribution to inequality and willingness to participate in collective action on behalf of the working class. Since we were mainly interested in the effects of contact, we dropped

the ideological variables of the previous study. We expected that recalling positive contact with the working class would lead to a reduced contribution to inequality and higher willingness to participate in collective action as compared to negative contact.

## **Method**

### ***Participants***

Since we did not have information about their social class and the response rate is low with lists of volunteers, we sent invitations to 2,500 people. The inclusion criteria to recruit middle and upper-class participants were the same as in study 1. We recruited 227 Spanish participants (64.3% women,  $M_{\text{age}} = 35.80$ ,  $SD = 13.33$ ) who completed an online questionnaire and matched those criteria. Thus, we performed a sensitivity analysis, using G\*Power (Erdfelder & Buchner, 1996), to determine which would be the minimum size effect to reject the null hypothesis, with our sample size, assuming an alpha level of .05 and 80% power. The results indicate that an  $f^2 \geq .043$  ( $\eta^2_p \geq .041$ ) for the MANOVA global effect, and also for the special effects, would be enough to reject the null hypothesis (the protocol of power analyses is presented in the supplementary material).

### ***Procedure***

Participants were invited to participate in a study about social class. They first were asked about their family income per year: <20,000€, from 20,000 to 60,000€, or >60,000€. Then, they read that social class category membership depends on multiple factors such as level of income, education, and occupation, and participants indicated whether they themselves belonged to the low, middle or upper class. Those who reported an income over 20,000€ and self-identified as middle ( $N = 225$ ) or upper class ( $N = 2$ ) were included in the study.



Participants were randomly assigned to the *positive contact* (n = 114) or the *negative contact* (n = 113) condition. Participants in the *positive contact condition* were asked to describe in a paragraph a situation in which they had a positive experience with one or more lower-class people. These are two examples of description: “In a hospital room. She helped me a lot to cope with a serious illness. The feeling was of gratitude and joy for having the luck to meet her.” and “I started a small horticultural business with some friends, from time to time we gave products to underprivileged people. Their responses were always joy, gratitude, respect... And it made us very happy to think about helping other people.”

Participants in the *negative contact condition* were asked to describe a situation in which they had a negative experience with one or more lower-class people. This one example of description: “At the exit of a supermarket a man who spends the day asking for money in the parking lot, chased me to the car insisting that I had to give him something. I was going alone and it was late, I was scared and I felt overwhelmed and powerless.”

After the manipulation, participants completed the dependent variables on scales ranging from 0 (*strongly disagree*) to 6 (*strongly agree*).

*Contribution to inequality* was evaluated by means of the same items as in Study 1,  $\alpha = .78$ , but oriented to the near future (e.g., “I will contribute to keeping society the way it is”).

Additionally, we measured *willingness to participate in seven collective actions* (based on Duncan, 1999) on behalf of the working class such as “actively participating in an organization that defends the rights of the working class,”  $\alpha = .93$ .

## **Results**

### ***Manipulation check***

To check whether participants in the positive contact condition described more positive experiences than those in the negative contact condition, we used the Linguistic Inquiry and Word Count (LIWC, Pennebaker & Francis, 1999) software. The content analysis revealed that the descriptions of the positive contact condition had a more positive emotional tone,  $M = 4.47$ ,  $SD = 3.73$ , than the descriptions of the negative contact condition,  $M = 1.21$ ,  $SD = 1.49$ ,  $F(1, 225) = 74.47$ ,  $p < .001$ ,  $\eta_p^2 = .25$ . Also, as expected, the descriptions of the negative contact condition had a more negative emotional tone,  $M = 3.71$ ,  $SD = 3.25$ , than those of the positive contact condition,  $M = 0.87$ ,  $SD = 1.41$ ,  $F(1, 225) = 73.21$ ,  $p < .001$ ,  $\eta_p^2 = .25$ .

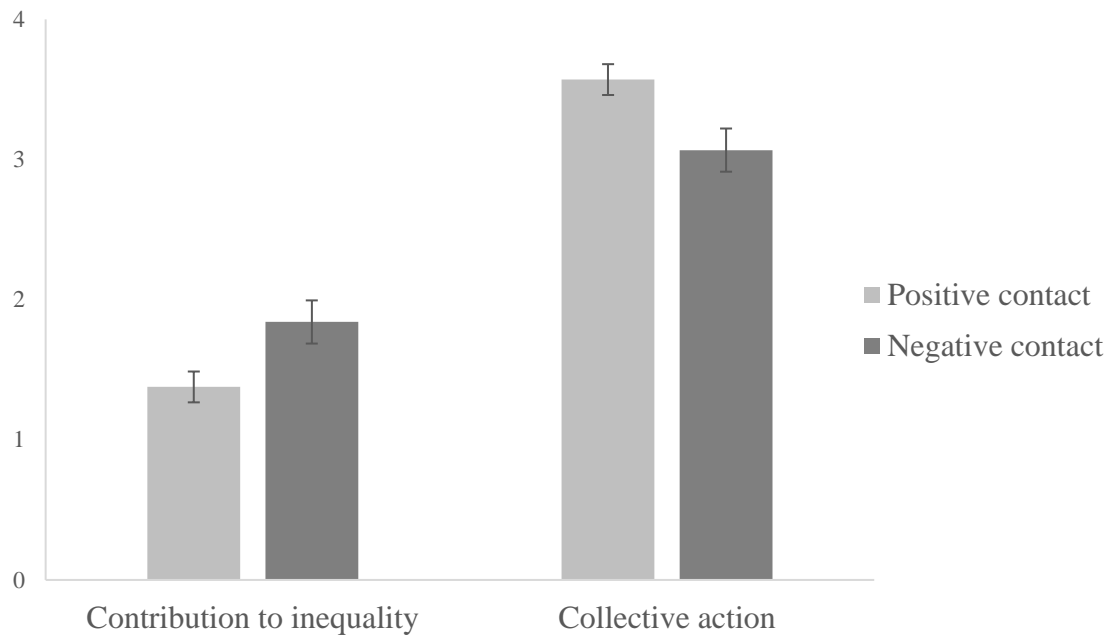
### ***Multivariate analysis***

Contribution to inequality and willingness to participate in collective action correlated negatively,  $r(225) = -.44$ ,  $p < .001$ . We conducted a MANOVA on these two variables considering the experimental condition as predictor. The multivariate effect of condition was significant, Wilk's  $\lambda = 0.96$ ,  $F(2, 224) = 5.09$ ,  $p = .007$ ,  $\eta_p^2 = .04$ . This effect on the linear combination of both variables might be studied in future studies.

**Contribution to inequality.** The univariate analysis on contribution to inequality revealed a significant effect of condition,  $F(1, 225) = 8.86$ ,  $p = .003$ ,  $\eta_p^2 = .04$ , indicating that participants in the positive contact condition ( $M = 1.38$ ,  $SD = 1.05$ ) anticipated contributing to inequality less in the near future than those in the negative contact condition ( $M = 1.84$ ,  $SD = 1.29$ ), as Figure 4 shows.

### **Figure 4**

*Effect of quality of contact on anticipated contribution to inequality and willingness to participate in collective action on behalf of the working class.*



**Collective action.** The univariate analysis on willingness to participate in collective action on behalf of the working class revealed a significant effect of condition,  $F(1, 225) = 5.33, p = .022, \eta^2_p = .02$ , indicating that participants in the positive contact condition ( $M = 3.57, SD = 1.66$ ) were more willing to collectively defend the rights of working class people than those in the negative contact condition ( $M = 3.07, SD = 1.63$ ) (see Figure 4).

## Discussion

Study 2 revealed that the quality of the recalled contact had a causal effect on anticipated contribution to inequality and willingness to participate in collective action on behalf of the working class. Those participants who were asked to recall a positive interaction with working class people anticipated a weaker contribution to inequality in the near future and were more willing to collectively defend the rights of working class people than those who were asked to recall a negative interaction.

## General Discussion

Rampant inequality poses a considerable risk to political and social stability and harms the physical and mental health of citizens (UNDESA, 2020; Wilkinson & Pickett,

2009). Despite the severity of its effects, policies aimed at reducing inequality such as higher taxation usually find strong opposition in the population, especially among economically advantaged groups. Understanding the factors that promote acceptance of inequality and devising ways to overcome them is key to move towards more egalitarian societies. The position of the middle and upper classes is especially important to achieve social change, because they have more resources than working classes to make themselves heard or to influence political decisions through lobbying.

Based on previous findings about the potential of intergroup contact for social change, in the first study of the current research, we analyzed whether having frequent or positive contact with working class people would undermine contribution to inequality among middle and upper class individuals over time, controlling for several ideological variables that could strengthen one's acceptance of the status quo. Our results showed that, as expected, lower levels of contribution to inequality tend to co-occur with higher quantity and quality of contact with working class people, less willingness to justify the system, and weaker meritocratic beliefs and materialistic values. In line with previous findings (e.g., Binder et al., 2009; Dovidio et al., 2017; Vázquez et al., 2020), quality of contact had a slightly greater (negative) relationship with contribution to inequality than quantity of contact. However, the longitudinal analyses revealed that the changes in the contribution to inequality were not associated with changes in the quantity and quality of contact or other variables (except for materialism). This lack of correspondence could be due to the fact that the natural change experienced by our participants in the studied constructs (i.e., latent variables) was small. In fact, when we included an external intervention in Study 2, we obtained causal evidence on the influence of quality of the recalled contact on contribution to inequality and, additionally, on a more concrete measure of behavioral intentions. Recalling a positive (vs. negative) interaction with

working class people reduced one's personal contribution to inequality and promoted willingness to participate in collective action for the benefit of working class people among middle and upper class individuals. The effect sizes ( $ds = 0.40$  and  $0.29$ ) were modest, but similar to the average effects found for face-to-face ( $d = 0.28$ ) and extended and imagined ( $d = 0.37$ ) contact in a recent meta-analysis about methods for reducing prejudice (Paluck et al., 2021).

The finding that positive contact with the working class undermines support for the status quo and increases interest in collective action for equality among middle and upper class individuals resonates with other studies that explored the effect of intergroup contact based on other categorization criteria (e.g., Black and White in Dixon et al., 2010; heterosexual and sexual minorities in Reimer et al., 2017). The merit of the current research lies in the exploration of a type of contact hitherto ignored in the literature, that is contact between members of different social classes. Our results suggest that class-based contact might reduce reluctance to social change among members of economically advantaged groups similarly to effects found for contact between other types of groups.

Although no strong a priori hypotheses were held for the control variables, it was interesting to note that system justification, meritocratic beliefs, and materialism tended to change together in the same direction. Changes in system justification and meritocratic beliefs were not associated with changes in contribution to inequality nor class-based contact. However, materialism seemed to reduce the quality of class-based contact and increase contribution to inequality over time. Those participants who hold materialistic values in the first wave reported less positive contact with the working class and greater contribution to inequality in the second wave. This finding is consistent with previous evidence that materialism is associated with class prejudice

(Vázquez & Lois, 2020). In addition to the ideological factors considered in Study 1, different control variables could be explored in future studies as, for instance, social dominance orientation or individualism.

Our results have some implications. The findings suggest that urban planning which promotes residential segregation and class ghettos (Sennett, 2018), as often found in more unequal countries (Tammaru et al., 2017), may reduce the opportunities for positive interactions between economically advantaged and disadvantaged people. Perhaps class relationships differ from other forms of intergroup relations in that a certain degree of contact is sought by members of the middle and upper class because working class members are employed for menial tasks such as cleaning or caring responsibilities. However, the absence of opportunities for positive contact beyond unequal situations where the working class provides a service to the upper and middle class (e.g., domestic service) could negatively impact on social cohesion.

We must note some limitations of the current research that could be addressed in new studies. Since we only focused on middle and upper classes, it is unclear whether the positive contact experienced by working class individuals operates as a mobilization or demobilization factor. There is evidence that positive intergroup contact can have sedative effects among members of socially disadvantaged groups by weakening their interest in collective action to challenge the status quo, because it leads them to pay less attention to group-based disparities, and to experience less anger in reaction to those disparities (Dixon et al., 2010; Hayward et al., 2017). Future studies could test whether positive contact with middle and upper classes reduces contribution to inequality among working class members and, in that case, how those effects could be avoided.

Second, we have detected small changes in all the variables with the latent change model. In light of the results of the two studies, we consider that the advantages

of the latent change models would have improved results under circumstances of greater variability between temporal moments. Along this line, Study 2 provided causal evidence that recalling positive contact reduces anticipated contribution to inequality and fosters willingness to participate in collective action for the benefit of the working class. These results are also valuable to the literature on contact, in general, where experimental studies are rare; only 5% of studies of Pettigrew and Tropp's (2006) meta-analysis manipulated contact. However, it remains to be determined whether recalling a past experience of contact with working class people has comparable consequences as experiencing contact itself. Although there is no systematic evidence on this comparison and reports of past episodes are subjected to different cognitive biases (e.g., Schwarz, 2007), Droogendyk et al. (2016) found similar effects of contact on collective action in two experiments in which recall of and real intergroup interactions were manipulated. Besides, describing a past personal experience with the outgroup requires retrieving and selecting an important episode among several, which would better reflect the ecology of intergroup contact than experiencing an isolated interaction in the laboratory. On the other hand, as there is no control condition, we cannot be sure which type of contact, positive or negative, is (more) influential. Future studies might address these two limitations by comparing the effects of recalled and live, valenced interactions with a no-contact condition.

In conclusion, this research provides preliminary evidence that positive (vs. negative) contact with the working class reduces contribution to inequality and increases willingness to participate in collective action on behalf of the working class among members of middle and upper classes. Although more research is needed to clarify the effects of contact experienced by working class people and explore variations across different countries, these findings suggest that class-based intergroup contact is a

relevant factor in explaining people's contribution to inequality. Our results indicate that, to have more egalitarian societies, it is necessary to reduce class segregation and create spaces where economically advantaged people can have positive interactions with the working class.

Open science:

Open data, open materials and supplementary materials are available at:

[https://osf.io/yvqgb/?view\\_only=23427c94265a42928b4fe55f5d0b554e](https://osf.io/yvqgb/?view_only=23427c94265a42928b4fe55f5d0b554e). There is sufficient information for an independent researcher to reproduce the reported results and methodology.



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