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Abstract

Recent research indicates that individuals' social class (SC) is connected to a wide range of psychological outcomes. Nonetheless, the question of how SC is related to people's uses of humor during social interactions remains unexplored. Consequently, in this research, we tested whether a person's SC, as measured by both objective indices of material wealth (i.e., income and educational attainment) and subjective perceptions of one' SC standing, is differentially related to affiliative and aggressive forms of humor. Study 1 (N = 156; 52.6% females) showed that there were no class-based differences in the use of affiliative humor, but provided preliminary support for a positive association between income and aggressive humor—even after controlling for age and gender. Study 2 (N = 201; 54.2% females) widely replicated these findings and revealed that the income-aggressive humor relationship was mediated by empathic concern. Overall, our results suggest that higher-income individuals, relative to their lower-income counterparts, tend to use aggressive humor more often because of their reduced others-oriented feelings of sympathy and compassion. To our knowledge, this research contains the first empirical evidence on the association of SC and the way in which individuals habitually use humor in their day-to-day lives.

Keywords: affiliative humor; aggressive humor; empathic concern; income; social class.

Class-Based Differences in the Use of (Aggressive) Humor: The Mediating Role of Empathic Concern

1. Introduction

Over the past decade, the study of social class (SC) has received growing interest in the field of psychology. Prior research has shown that SC differentially affects a large number of psychological outcomes (see Manstead, 2018). For instance, it has been proven that SC is related to individuals' emotional states (Gallo & Matthews, 2003), correlates with lower- and higher-order personality traits (Chapman, Fiscella, Kawachi, & Duberstein, 2010; Piff, 2014), modulates cognitive processes, such as response inhibition (Na & Chan, 2016), has an impact on physical health and subjective well-being (Cundiff & Matthews, 2017; Huang et al., 2017), or influences the trust that people place in others (Brandt, Wetherell, & Henry, 2015). Nonetheless, to the best of our knowledge, there is no empirical evidence on potential class-based differences in distinctive humor-related dispositions. In this article, we extend prior literature on the psychological impact of SC by examining whether a person's SC, assessed using objective indices of material wealth (i.e., income and educational attainment) and subjective perceptions of one' SC standing, is differentially related to affiliative and aggressive forms of humor.

1.1. The psychological impact of social class

Current psychological approaches have progressively investigated the implications of SC. It can be conceptualized as a multifaceted social category defined by both people's material conditions (e.g., income) and subjective perceptions regarding their position in the social hierarchy (Kraus, Piff, & Keltner, 2009; Rarick, Dolan, Han, & Wen, 2018). The objective and subjective conditions generate different SC contexts that involve shared experiences among those individuals belonging to the same SC (see

Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012). These SC realities in turn modulate the individuals' day-to-day lives, yielding class-based differences in social and psychological experience. For instance, Fritsche et al. (2017) demonstrated that higher-income individuals showed increased levels of perceived personal control than their lower-class counterparts. This finding suggests that people from higher social classes are more prone to perceive that things that happen in their immediate context depend on them rather than external factors. Furthermore, Stephens, Markus, and Townsend (2007), using experimental designs, found that upper-class (as measured by educational level) individuals' self-concept was based on the differentiation with others (i.e., independent orientation), whereas lower-class individuals' self-concept was characterized by similarity and connections to others (i.e., interdependent orientation). Consistently, people belonging to lower social classes tend to form stronger social support networks as a way of overcoming threatening and difficult events (Stellar, Manzo, Kraus, & Keltner, 2012).

Along the same lines, in a recent study, Piff and Moskowitz (2018) suggested the existence of class differences in positive emotions. In particular, these authors revealed that upper-class participants—measured in terms of income—more frequently reported experiencing self-oriented emotions, such as contentment, pride, and amusement. By contrast, lower-class participants experienced greater levels of other-oriented emotions, such as compassion, love, and awe. Similarly, Piff, Kraus, Côte, Cheng, and Keltner (2010) observed that lower-SC individuals (assessed by subjective perceptions of socioeconomic rank), compared to higher-SC individuals, exhibited a more prosocial behavior (i.e., allocating more of their resources to their partner) during an experimental task called the dictator game.

In sum, psychological research on SC has shown that the belonging to a specific SC contributes to shaping the way in which people perceive themselves, their emotional experience, and how they interact with others (Kraus & Stephens, 2012). In this sense, it is necessary to explore whether other psychological and socially relevant variables—which have not been tested so far—could be differentially associated with SC. In particular, we theorize that the way in which individuals use humor may be connected to SC experience.

1.2. Social class and affiliative and aggressive humor styles

As a social phenomenon, humor plays an essential role within interpersonal relationships. For instance, Dikkers, Doosje, and Lange (2012) stated that humor affinity may promote social cohesion in work groups. Nevertheless, not all forms of humor are positive. Indeed, humoristic expressions can be aimed at different—even opposite—social functions. They can be used to strengthen emotional ties or to maintain more positive social relations, but also to exhibit rejection or superiority over others (Martin, 2007). Linking to this theoretical approach, Martin, Puhlik-Doris, Larsen, Gray, and Weir (2003) proposed the existence of diverse tendencies related to the use of humor, namely affiliative, self-enhancing, aggressive, and self-defeating humor styles. Based on their self- and social-implications, these humor styles can be succinctly defined as follows: affiliative humor seeks to strengthen interpersonal bonds by using benign or well-meant forms of humor; self-enhancing humor is oriented to face stressful or damaging situations by maintaining a humoristic perspective; aggressive humor is aimed at denoting superiority over others (boosting the self) by using hostile, cynical, or sarcastic jokes/comments; and self-defeating humor focuses on ridiculing oneself to gain others' approval and avoid others' derision. The Humor Styles model has been widely studied across numerous empirical investigations, exploring humor styles'

relations with other relevant criteria and elucidating their potential application to distinct environments (e.g., Kuiper & McHale, 2010; Torres-Marín, Navarro-Carrillo, & Carretero-Dios, 2018).

In this research, we decided to focus on affiliative and aggressive humor styles as they are widely aligned with certain core characteristics of lower- and upper-SC, respectively. For example, lower-SC individuals—indexed by subjective and objective indicators—are more prone to engage in others-oriented behaviors, considering social cohesion as a way of dealing with adverse circumstances (Stellar et al., 2012). Given that affiliative humor refers to an others-oriented behavior and that it is aimed at enhancing social ties (Martin et al., 2003), one might argue that lower SC would be associated with an increased use of affiliative humor. This expectation may be also considered as supportable in the light of an overlapping pattern of correlations between lower SC and affiliative humor, such as a greater inclination to affective empathy and helping behavior (Falanga, De Caroli, & Sagone, 2014; Piff & Robinson, 2017; Stellar et al., 2012). Furthermore, prior research has suggested that upper-SC individuals are more likely to exhibit behaviors focused on boosting their self (Kraus et al., 2012). Given that aggressive humor is conceptualized as a way of improving the self at the expense of other people (Martin et al., 2003), it would be expected that upper-SC individuals show a greater use of aggressive humor. Additionally, although some studies have found that upper-class individuals are less prone to aggression (e.g., Chen, Zuo, & Zhao, 2018; Greitemeyer & Sagioglou, 2016), it has been suggested that the relation between SC and aggressive expressions can be positive when they serve to display authority (Park et al., 2013). Such a connection also fits with the primary function of aggressive humor, which attempts to assert superiority over others (Martin et al., 2003). Finally, this positive SC-aggressive humor relation would be consistent

with attending to common correlates of both constructs with, for example, high neuroticism and low agreeableness, lower levels of concern and compassion, or an increased sense of control (Chapman et al., 2010; Fritsche et al., 2017; Hampes, 2010; Leist & Müller, 2013; Martin et al., 2003; Piff, 2014; Stellar et al., 2012; Torres-Marín et al., 2018).

STUDY 1

2. Method

2.1. Participants

This **s**ample consisted of 156 adults (82 females [52.6%]) between the ages of 18 and 68 (M = 36.68, SD = 11.61). A priori power analyses indicated that 138 respondents would provide 95% power to detect a medium effect size (f^2 = 0.15) for a regression with five predictors (i.e., age, gender, subjective social class, income, and education). The sample size was estimated by using G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009).

2.2. Instruments

2.2.1. Affiliative and aggressive humor. These humor styles were assessed by the *Humor Styles Questionnaire* (HSQ, Martin et al., 2003; Spanish version by Torres-Marín et al., 2018). The affiliative (e.g., "I enjoy making people laugh") and aggressive ("If someone makes a mistake, I will often tease them about it") humor measures consist of 8 items each. Responses are given on a Likert scale ranging from 1 (*totally disagree)* to *7* (*totally agree)*. The original and Spanish versions of the HSQ show adequate support for the reliability (e.g., $\alpha \geq .74$) and validity (i.e., associations with well-being and personality dimensions) of these measures.

2.2.2. Subjective social class. We also administered the *MacArthur Scale of Subjective Socioeconomic Status* (Adler, Epel, Castellazo, & Ickovics, 2000). The participants were asked to indicate their social standing in comparison with the rest of the society in a (social) ladder. This ladder was comprised a total of 10 rungs representing the SC hierarchy in terms of income, education, and occupation.

2.2.3. Objective social class. Monthly family income and educational attainment were considered as objective indices of SC. Family income was assessed based on the following six categories: (a) 1.000€, (b) 1.000€ - 2.000€, (c) 2.000€ - 3.000€, (d) 3.000€ - 4.000€, (e) 4.000€ - 5.000€, and (f) > 5.000 € . Educational attainment was rated based on seven categories: (a) no formal academic education, (b) primary school, (c) secondary education/school graduate, (d) vocational training, (e) high school/diploma, (f) university degree, and (g) doctorate. The assessment of these indicators is consistent with prior psychological literature on SC (e.g., Piff & Moskowitz, 2018; Stephens et al., 2007).

2.3. Procedure

A paper-based administration was used. Two previously-trained researchers requested volunteers to participate in diverse public spaces (e.g., bus stations) and university centers. The study was advertised as an examination of certain psychosocial characteristics among the general population (inclusion criteria ≥ 18 years of age). The estimated duration of time required to complete the questionnaire booklet (15 minutes) was also provided. All respondents were naïve to the objectives of our research. The participants were assessed individually or in small groups. This research was approved by a local ethical committee and performed in accordance with the Ethical Standards of the 1964 Declaration of Helsinki. Confidentiality and anonymity of the data were

guaranteed throughout all studies. Participation was voluntary and not financially compensated.

2.4. Statistical analysis

In preliminary analyses, means and standard deviations were calculated for all of the key variables. Following these descriptive analyses, frequency analyses were computed for objective indicators of SC (i.e., income and educational attainment). Reliability was analyzed for the affiliative and aggressive humor styles. Intercorrelations of humor styles and SC indicators were tested using Pearson correlations. As a last step, Pearson correlations were computed for examining the associations of age and gender with SC, and affiliative and aggressive humor styles.

Concerning main analyses, Pearson correlations among indices of SC and affiliative and aggressive humor styles were calculated. Later, we conducted a set of hierarchical regression analyses to determine the predictive value of SC measures on affiliative and aggressive humor styles. Before conducting these analyses, we standardized the SC measures and calculated the collinearity statistics to verify that they did not exceed the recommended values (i.e., VIF < 5; Akinwande, Dikko, & Samson, 2015). Then, in the first step, we included age and gender as control variables (method: *enter*) because these sociodemographic characteristics have been previously associated with affiliative and aggressive humor styles (Martin, 2007; Martin et al., 2003). Gender was coded as a dummy variable (0 = females, 1 = males). In the second step, subjective SC, income, and educational attainment were introduced (method: *enter*). These analyses were conducted using SPSS 20.0 statistical software (SPSS, Inc., Chicago, IL, USA).

3. Results

3.1. Preliminary analyses

The means and standard deviations of humor styles and the SC measures are given in Table 1. Participants' income distribution was: < 1.000€ (13.2%), 1.000€ - 2.000€ (43%), 2.000€ - 3.000€ (24.5%), 3.000€ - 4.000€ (9.9%), 4.000€ - 5.000€ (6.6%), and > 5.000 € (2.6%). In terms of educational background, participants reported the following: primary school (4.5%), secondary education/school graduate (1.3%), vocational training (12.9%), high school/diploma (16.1%), university degree (62.6%), and doctorate (2.6%). The internal consistency was satisfying for the affiliative and aggressive humor styles (αs =.82). Table 1 also shows that affiliative and aggressive humor styles were uncorrelated (r = -.062, p = .439) and that SC measures showed moderate-to-strong positive associations (rs ≥ .304, p < .001). Considering age and gender effects, age was negatively correlated with affiliative humor (r = -.241, p = .003) but was not correlated with either aggressive humor (r = -.153, p = .058) or the SC indicators (-.124 ≤ rs ≤ -.094). Further, male gender was associated with an increased use of aggressive humor (r = .242, p = .002). However, gender existed independently from affiliative humor (r = -.008, p = .921) and SC indicators (-.055 ≤ rs ≤ .130).

3.2. Intercorrelations between measures of social class and affiliative and aggressive humor styles

As Table 1 illustrates, subjective SC did not correlate with affiliative humor (r = -.077, p = .346). By contrast, it was positively and significantly associated with aggressive humor (r = .295, p < .001). Therefore, the higher the participants' subjective SC, the greater their scores on aggressive humor. The same pattern of correlations was found for income. Income did not correlate with affiliative humor (r = -.052, p = .526);

however, it showed a positive association with aggressive humor (r = .338, p < .001). Thus, greater income was indicative of higher levels of aggressive humor. Educational attainment showed around zero correlations with affiliative (r = .022, p = .791) and aggressive humor (r = .040, p = .624) styles.

<INSERT TABLE 1 HERE>

3.3. Hierarchical regressions analyses for subjective and objective social class indicators predicting affiliative and aggressive humor styles

As for affiliative humor, Model 1, which included age and gender, significantly predicted this form of humor, F(2, 144) = 3.296, p = .040. As can be seen in Table 2, younger age was associated with a lower inclination to the use affiliative humor (β = -.208, p = .012). However, Model 2 was not significant, F(5, 141) = 1.769, p = .123. None of the subjective (β = -.109, p = .272) or objective indices (income, β = -.039, p = .690; education, β = .048, p = .592) of SC was significantly related to the use of affiliative humor, ΔF(3, 141) = 0.762, p = .517.

Regarding aggressive humor, our results indicated that Model 1 (i.e., age and gender) was significant, F(2, 144) = 7.480, p = .001. As Table 2 illustrates, male gender showed a higher tendency to express this type of humor (β = .273, p = .001). Furthermore, Model 2 also predicted aggressive humor, F(5, 141) = 7.290, p < .001. The inclusion of the different measures of subjective and objective SC explained an additional 11.1% of the variance in aggressive humor, ΔF(3, 141) = 6.582, p < .001. In particular, high income (β = .263, p = .004) was associated with aggressive humor above and beyond the influence of age and gender. By contrast, subjective SC (β = .147, p = .109) and educational attainment (β = -.129, p = .116) were unrelated to this form of humor (Table 2).

<INSERT TABLE 2 HERE>

4. Discussion

Our data provide promising preliminary support for the notion that SC can be linked to the way people use humor in interpersonal relationships. Although we did not find differences in affiliative humor based on SC, our results confirm that upper-class participants, compared with their lower-class counterparts, are more likely to use aggressive humor. This inclination could constitute a psychological strategy aimed at strengthening the self by manifesting superiority over others (Martin, 2007). Interestingly, although both subjective SC and income were positively correlated with aggressive humor, only the objective feature of SC yielded a unique contribution to the prediction of this humor style. This means that income was related to aggressive humor when controlling for subjective SC, but subjective SC was not related to aggressive humor when controlling for income. Other studies already indicated that income is related to interpersonal outcomes as the nature and frequency of social contact (Bianchi & Vohs, 2016).

Altogether, our findings expand what is known about the implications of objective personal socioeconomic circumstances on human behavior. Nevertheless, this empirical contribution could be insufficient within the psychological literature on SC. Therefore, we carried out another study to (a) replicate the SC differences in aggressive humor; (b) corroborate that income, an objective index of SC, has a greater predictive value on aggressive humor than subjective SC; and (c) test a possible underlying psychological mechanism of the income-aggressive humor association—empathic concern.

STUDY 2: Overview and hypothesis

The main purpose of this second study was to replicate the pattern of results observed in our preceding study. Thus, firstly, we examined again whether higher SC participants (as indexed by income), compared with lower SC participants, tend more often to use aggressive humor. Additionally, we also tested whether empathic concern, defined as an "other-oriented feeling of sympathy and concern for unfortunate others" (Davis, 1983, p.114), could emerge as a mediator of the abovementioned relationship. Consistent with this assumption, both SC and aggressive humor have been consistently and negatively related to feelings of concern for other people. More specifically, with regard to SC, Stellar et al. (2012) indicated that upper-class individuals (measured in terms of SC identification), contrary to lower-class individuals, showed lower scores on self-reported compassion trait. In addition, in a study of emotional induction, they also demonstrated that higher-class participants—as measured by family income and parental education—exhibited a lower compassion-subjective response after watching a video of children suffering from cancer. These authors also found that higher-class participants showed the same tendency in a more realistic context, being less compassionate when a partner suffered during a hard job interview. Similarly, according to Kraus, Côté, and Keltner (2010), people from higher social classes (as measured by subjective and objective measures) are less accurate when correctly reading other people's emotions. Lastly, in an electroencephalogram (EEG) study, Varnum, Blais, Hampton, and Brewer (2015) found that SC—assessed by a composite measure including both subjective and objective indicators—negatively correlated to fronto-central P2 responses (i.e., neural responses associated with empathy) after the presentation of a set of images of human faces expressing pain.

Regarding aggressive humor, there is also broad evidence for the negative association between this humor style and affective empathy. For instance, aggressive humor has been strongly related to lower levels of concern and distress when other people suffer or experience negative emotions (Hampes, 2010). In the same vein, it has been suggested that people who use this form of humor show more difficulties in evaluating the impact of their comments on others (Vaughan, Zeigler-Hill, Randolph, & Arnau, 2014). Drawing on these findings, we surmise that empathic concern would mediate the SC-aggressive humor relationship. In other words, people from higher SC backgrounds, relative to their counterparts from lower SC contexts, would show a higher inclination to use aggressive humor because of their reduced levels of empathic concern.

5. Method

5.1. Participants

The sample was comprised of 201 adults (109 females [54.2%]) with ages between 18 and 69 (M = 34.16, SD = 11.83). To replicate the regression analyses approach, our sample size again exceeded the minimum recommended of 138 respondents calculated by a priori power analyses using G*Power 3.1 (Faul et al., 2009). Moreover, taking into account Fritz and MacKinnon (2007)'s indications regarding a bias-corrected bootstrapping approach in mediation analyses, sample sizes of a minimum of 462, 148, and 34 participants are recommended to identify small, medium, and large effect sizes (respectively) and to achieve an .8 power for the effect of X on M (path α) and the effect of M on DV (path β). Hence, the sample size of the current study was suitable for detecting both medium and large effects.

5.2. Instruments

5.2.1. Affiliative and aggressive humor. These variables were evaluated in the same manner as in Study 1.

5.2.2. Empathic concern. This empathy-related trait was assessed by the *Interpersonal Reactivity Index* (IRI, Davis, 1983; Spanish version by Pérez-Albéniz, de Paúl, Etxeberría, Paz-Montes, & Torres, 2003). The empathic concern measure consists of 8 items (e.g., "I often have tender, concerned feelings for people less fortunate than me"). Responses are given on a Likert scale ranging from 1 (*does not describe me well)* to *5 (describes me very well).* Its reliability for the original and Spanish version was acceptable ($\alpha \geq .63$) and there is also evidence of its convergent validity with other empathy measures.

5.2.3. Social class measures. Objective and subjective SC indicators were identical to those used in the previous study.

5.3. Procedure

Online administration was used. As in the previous study, the current study was advertised as an examination of certain psychosocial characteristics among the general population (inclusion criteria ≥ 18 years of age). The estimated duration needed to complete the questionnaire booklet (15 minutes) was also provided. The participants were naïve to the objectives of our research. This research was approved by a local ethical committee and performed in accordance with the Ethical Standards of the 1964 Declaration of Helsinki. Confidentiality and anonymity of the data were guaranteed throughout all studies. The participation was voluntary and not financially compensated.

5.4. Statistical analyses

The same analysis approach (incorporating empathic concern) as Study 1 was applied. Additionally, we conducted a simple mediation analysis (mediator variable:

empathic concern) by using Hayes' PROCESS Macro for SPSS (Hayes, 2013). Following Mallinckrodt, Abraham, Wei, and Russell (2006)'s recommendations, bias-corrected bootstrapping (i.e., non-parametric resampling) was undertaken based on 10,000 iterations at a 95% confidence interval (CI). The indirect effect is considered statistically significant ($p < .05$) when its 95% interval range generated does not contain the 0 value.

6. Results

6.1. Preliminary analyses

Table 3 gives the means and standard deviations of humor styles, empathic concern, and SC indicators. Income distribution was: < 1.000€ (9%), 1.000€ - 2.000€ (34.8%), 2.000€ - 3.000€ (29.4%), 3.000€ - 4.000€ (16.9%), 4.000€ - 5.000€ (6%), and > 5.000 € (4%). The following distribution was obtained for educational level: primary school (4.5%), secondary education/school graduate (8.5%), vocational training (8.5%), high school/diploma (15.4%), university degree (61.7%), and doctorate (1.5%). Satisfying support existed for the reliability of the affiliative and aggressive humor styles as well as empathic concern ($\alpha s \geq .71$). In terms of intercorrelations, the affiliative and aggressive humor styles were unrelated ($r = .043$, $p = 546$), while the SC indicators were positively intercorrelated ($rs \geq .259$, $p < .001$). Concerning age and gender effects, age showed negative associations with affiliative ($r = -.358$, $p < .001$) and aggressive ($r = -.206$, $p = .003$) humor styles, and it was not correlated with either empathic concern ($r = .102$, $p = .148$) or the SC indicators ($-.042 \leq rs \leq .126$). Male gender was associated with a greater use of aggressive humor ($r = .308$, $p < .001$) and female gender was associated with a heightened expression of empathic concern ($r = -.221$, $p = .002$). Finally, gender was independent of affiliative humor ($r = .082$, $p = .244$) and the SC indicators ($-.065 \leq rs \leq .025$).

6.2. Intercorrelations between measures of social class, affiliative and aggressive humor styles, and empathic concern

As Table 3 illustrates, subjective SC did not correlate with affiliative humor (r = -.004, p = .955), aggressive humor (r = .032, p = .655), or empathic concern (r = -.009, p = .902). As in the case of subjective SC, income was unrelated to affiliative humor (r = -.086, p = .224). Nevertheless, income did correlate with an increased use of aggressive humor (r = .169, p = .017) and with lower scores on empathic concern (r = -.163, p = .020). Educational attainment was uncorrelated with affiliative humor (r = .026, p = .716), aggressive humor (r = -.077, p = .277), and empathic concern (r = -.069, p = .330). Finally, empathic concern was positively correlated with affiliative humor (r = .197, p = .005) and negatively correlated with aggressive humor (r = -.273, p < .001).

<INSERT TABLE 3 HERE>

6.3. Hierarchical regressions analyses for subjective and objective social class indicators predicting affiliative and aggressive humor styles

With regard to affiliative humor, Model 1 (i.e., age and gender) significantly predicted the use of this type of humor, $F(2, 198) = 14.538$, $p < .001$. As can be seen in Table 4, younger age was related to lower scores on affiliative humor (β = -.355, p < .001). Model 2 was also significant, $F(5, 195) = 6.227$, $p < .001$, but adding subjective SC (β = .071, p = .337), income (β = -.097, p = .183), and educational attainment (β = .016, p = .822) in Step 2 did not yield a significant increase in the explained variance of affiliative humor, $\Delta F(3, 195) = 0.727$, p = .537.

Concerning aggressive humor, Model 1 (i.e., age and gender) also predicted this humor style, $F(2, 198) = 13.134$, $p < .001$. Younger age (β = -.152, p = .027) and male gender (β = .278, p < .001) were related to the use of aggressive humor. Model 2 was also significant, $F(5, 195) = 7.468$, $p < .001$. More specifically, the inclusion of the SC

indicators also yielded a significant increase (4.4%) in the variance of this humor style, $\Delta F(3, 195) = 3.376$, $p = .019$). As Table 4 illustrates, high income was related to a greater use of aggressive humor ($\beta = .190$, $p = .008$), whereas subjective SC was unrelated to this form of humor ($\beta = .042$, $p = .567$). Further, educational attainment was also unrelated with aggressive humor ($\beta = -.129$, $p = .068$).

<INSERT TABLE 4 HERE>

6.4. The potential mediating role of empathic concern

After replicating the finding that higher-income participants were more inclined to use aggressive humor, our next interest was to determine whether such an effect could be explained—at least partially—by their scores on empathic concern. Our results showed that all paths were significant (Figure 1). The indirect effect (*IE*) that we obtained was: 0.04, *SE* = 0.02 (95% CI [.003, .096]). Given that 0 is outside the confident intervals, the indirect effect was significant. Moreover, after controlling for the effect of the mediator variable (i.e., empathic concern), the effect of income on aggressive humor did not remain statistically significant (Figure 1), indicating the existence of a complete mediation. These results indicated that empathic concern mediated the income-aggressive humor association. Thus, income was indirectly related to aggressive humor through empathic concern.

<INSERT FIGURE 1 HERE>

7. Discussion

Study 2 replicated our previous findings on the associations between SC and affiliative and aggressive forms of humor. Whereas we did not observe any differences in affiliative humor based on participants' SC, income was consistently associated with increased aggressive humor after accounting for age and gender. Again, only an objective index of material wealth was linked to the way that individuals' habitually use humor in their day-to-day lives. Additionally, this study supported the potential explanatory role of empathic concern in this relationship because we found that higher-income participants showed lower scores on empathic concern and this outcome, in turn, was related to greater scores on aggressive humor. This finding is supported by prior data reporting similar associations of both a higher SC and a greater inclination to aggressive humor with a reduced ability to experience others' feelings (e.g., Hampes, 2010; Stellar et al., 2012; Varnum et al., 2015; Vaughan et al., 2014).

8. General discussion

In this research, we examined potential SC differences in behavioral tendencies related to how people use humor in social interactions. In particular, we were interested in exploring the connections among subjective (i.e., perceived SC) and objective (i.e., income and educational levels) measures of individuals' SC position and distinctive humor-related dispositions (i.e., affiliative and aggressive humor styles). To the best of our knowledge, this is the first empirical research to directly investigate the relationships between various measures of SC and affiliative and aggressive humor manifestations.

Across two independent studies and contrary to our initial hypothesis, our results did not support the notion that differences in the use of affiliative humor exist among people from upper- and lower-SC backgrounds. This observation seems to indicate that

belonging to a lower SC does not differentially predispose individuals to a general tendency toward more prosocial forms of humor. A possible explanation could be that lower SC people would engage in affiliative humoristic expressions only within particular interpersonal relationships rather than in a generalized manner. Because prior research has suggested that lower SC individuals are more oriented to others in their immediate community (Piff, Stancato, Martinez, Kraus, & Keltner, 2012), one might argue that these individuals would be more likely to use affiliative humor with those having a similar social position or socioeconomic status. Future research should analyze whether lower-class people exhibit a social context-dependent inclination to the use of affiliative humor.

In line with our expectations, our results revealed that upper-class participants, relative to their lower-class counterparts, were more prone to use aggressive humor. Notably, this relationship was replicated across two different studies. In accordance with aggressive humor's conceptualization (Martin et al., 2003), this finding may indicate that upper-class individuals could use, to a greater extent, sarcasm, teasing, derision, and, in general, aggressive humoristic expressions as a way of improving their self at the expense of others. This finding is in line with prior studies stating that upper-class people are more focused on their individual self (Stephens, Markus, & Phillips, 2014). Also, this relation fits well with the idea that these individuals are more involved in individualistic tendencies, such as the preference for differentiating and separating themselves from others (Stephens et al. 2007). It is important to notice that the association only emerged for income across both studies. Though subjective self-categorizations of SC have been suggested as a more potent set of predictors of psychological-related outcomes (e.g., Kraus et al., 2009), recent research has shown that objective SC can also explain interindividual differences in certain social and

interpersonal constructs beyond perceived SC (e.g., trust; Elgar, 2010; Navarro-Carrillo, Valor-Segura, & Moya, 2018). Further studies should ascertain whether the nature of the criterion outcome or cultural factors could explain these differential effects.

After showing that the income-aggressive humor association was consistent, we surmised a potential path that could allow us to enhance our understanding of how upper-class individuals deal with aggressive humor. Our data revealed that this high-class-based pattern of aggressive humor was completely mediated by reduced empathic concern. It means that although income had a significant direct effect on aggressive humor, this relation did not reach statistical significance once empathic concern was introduced in the model. Overall, this result offers a preliminary indication that higher-income individuals are less concerned about the suffering of others and, therefore, they use aggressive or hostile forms of humor to boost their self at expense of others. This finding is aligned with former studies documenting that both upper-SC and aggressive humor are associated with lower feelings of compassion, tenderness, and sympathy (Hampes, 2010; Piff & Robinson, 2017; Stellar et al., 2012; Varnum et al., 2015; Vaughan et al., 2014). However, we consider that there would be alternative paths capable of contributing to a clarification of the income-aggressive humor relationship. For example, given that humor can also be aimed at maintaining social status or hierarchy and that, in particular, aggressive humor serves to signal one's own superiority over others (Martin, 2007), the use of this type of humor by higher-class people could be interpreted as a route to maintain their higher social standing. In this sense, one might expect that the motivation to preserve and attain an upper social rank or position (Neel, Kenrick, White, & Neuberg, 2016) may also have an explanatory value. This assertion would converge with recent research suggesting that higher-class people could exhibit certain interpersonal behaviors with the purpose of denoting and

maintaining their privileged social position in society (Becker, Kraus, & Rheinschmidt-Same, 2017). From this perspective, aggressive humor could be a part of a set of actions that upper-class individuals display to strengthen class boundaries.

8.1. Limitations and future research directions

Our research has some limitations. In both studies, data collection was obtained through non-probabilistic sampling, limiting the generalization of our findings. However, our main results were widely replicated across samples. Even though the relationship between income and aggressive humor held independently of common demographics (i.e., age and gender), further studies should also account for specific variables intertwined with SC, such as ethnicity (Ostrove, Adler, Kuppermann, & Washington, 2000). Also, the non-experimental methodology used in this research does not allow us to infer the causal direction of the SC-aggressive humor association. Alternative methodological approaches, such as longitudinal or experimental designs, should be implemented to elucidate the potential causal link between these constructs. Furthermore, our findings were based on self-report data and not from direct observations of behavior. Future research should analyze whether income could predict the use of aggressive forms of humor during face-to-face interactions. Additionally, our central predictions were tested in only one country (Spain). Therefore, it would be advisable to corroborate whether our results hold in other cultural contexts. Likewise, multilevel analysis could be conducted to explore how macro-factors, such as individualism/collectivism or inequality at the country level, modulate the obtained results. Lastly, although we used a well-established model of humor styles, other humor-related measures could be considered in future studies. For example, Ruch and Proyer (2009) proposed the existence of three dispositions toward laughter and ridicule, namely the fear of (gelotophobia) and the joy in (gelotophilia) being laughed at, and the

joy in laughing at others (katagelasticism). As katagelasticism has strong theoretical and empirical links with aggressive humor (Dursun, Dalğar, Brauer, Yerlikaya, & Proyer, 2017), we would expect a similar relationship between income and the joy in laughing at others. More recently, Ruch, Heintz, Platt, Wagner, and Proyer (2018) developed the comic styles marker as an alternative approach to assess individual differences in several humor-related styles: fun, benevolent humor, nonsense, wit, irony, satire, sarcasm, and cynicism. Considering the definitions proposed in this model and taking into account their relationship with aggressive humor (Heintz & Ruch, 2019), we would expect that income would be mainly associated with higher levels of sarcasm, irony, and cynicism.

8.2. Conclusions

The current results entail the first preliminary empirical evidence that SC experience is linked to how humor is used in everyday life. Despite there being no class differences in affiliative humor, the positive association of income with aggressive humor was consistently replicated across two independent studies. Furthermore, in the second study, we provide evidence on a plausible psychological process (i.e., empathic concern) through which income relates to aggressive humor: higher-income participants, relative to their lower-income counterparts, tended to use aggressive humor more often because of their reduced others-oriented feelings of sympathy and compassion. In summary, our research contributes to expanding our understanding of the psychological implications of SC by suggesting that even people's uses of humor are infused with SC. The findings of this research will inform future psychological investigations of SC and humor.

9. References

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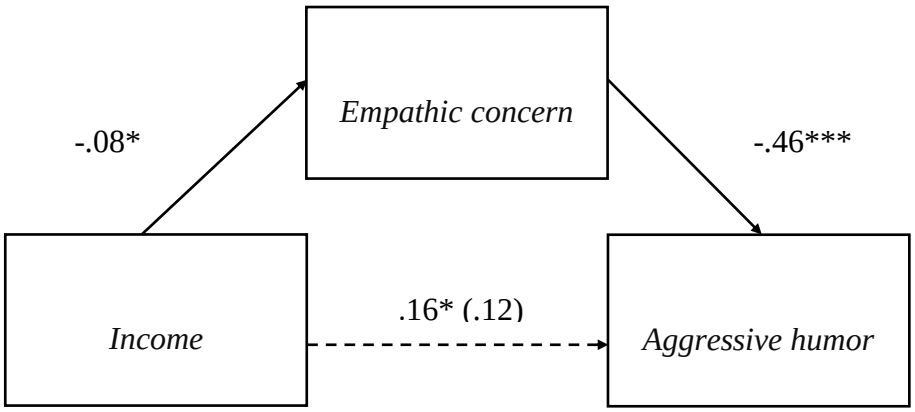

Figure 1. Mediation model showing empathic concern as a mediating variable in the association between income and aggressive humor.
* $p < .05$, *** $p < .001$.

Table 1. Descriptive statistics and intercorrelations between affiliative and aggressive humor styles, and social class measures

	M	*SD*	(1)	(2)	(3)	(4)	(5)
(1) Affiliative humor	5.33	1.10	*.82*				
(2) Aggressive humor	2.76	1.21	-.062	*.82*			
(3) Subjective social class	5.94	1.54	-.077	.295***	-		
(4) Income	2.62	1.19	-.052	.338***	.527***	-	
(5) Education	5.39	1.08	.022	.040	.345***	.304***	-

N = 156. Cronbach alphas in italics.

*** $p < 0.001$.

Table 2. Hierarchical regression analyses predicting affiliative and aggressive humor with control variables and social class measures (Study 1).

	Affiliative humor		Aggressive humor	
Predictors	ΔR^2	β	ΔR^2	β
Step 1: Control variables				
Model 1	.044*		.094**	
Age		-.208*		-.134
Gender		-.024		.273**
Step 2: Social class				
Model 2	.015		.111***	
Age		-.220**		-.109
Gender		-.007		.218**
Subjective social class		-.109		.147
Income		-.039		.263**
Educational attainment		.048		-.129
Total R^2	.059		.205***	

N = 156. Gender: 0 = females; 1 = males. Step 1 and 2 (Method: enter). All VIFs ≤ 1.47. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3. Descriptive statistics, Cronbach alphas, and intercorrelations between affiliative and aggressive humor styles, empathic concern, and social class measures

	M	*SD*	(1)	(2)	(3)	(4)	(5)	(6)
(1) Affiliative humor	5.57	1.03	*.81*					
(2) Aggressive humor	2.92	1.14	.043	*.79*				
(3) Empathic concern	4.07	0.62	.197**	-.273***	*.71*			
(4) Subjective social class	6.35	1.50	-.004	.032	-.009	-		
(5) Income	2.88	1.21	-.086	.169*	-.163*	.347***	-	
(6) Education	5.26	1.20	.026	-.077	-.069	.296***	.259***	-

N = 201. Cronbach alphas in italics.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 4. Hierarchical regression analyses predicting affiliative and aggressive humor with control variables and social class measures (Study 2).

	Affiliative humor		Aggressive humor	
Predictors	ΔR^2	β	ΔR^2	β
Step 1: Control variables				
Model 1	.128***		.117***	
Age		-.355***		-.152*
Gender		.013		.278***
Step 2: Social class				
Model 2	.010		.044*	
Age		-.357***		-.175*
Gender		.020		.263***
Subjective social class		.071		.042
Income		-.097		.190**
Educational attainment		.016		-.129
Total R^2	.138***		.161***	

N = 201. Gender: 0 = females; 1 = males. Step 1 and 2 (Method: enter). All VIFs ≤ 1.22. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.