INDIVIDUAL DIFFERENCES IN THE APPRECIATION AND INTERPRETATION OF SUBVERSIVE HUMOR AGAINST SEXISM VERSUS SEXIST HUMOR: THE ROLE OF FEMINIST IDENTITY AND HOSTILE SEXISM

**Individual differences in the appreciation and interpretation of subversive humor against sexism versus sexist humor: The role of feminist identity and hostile sexism**

**Abstract**

In two studies, we analyzed the differences in the appreciation (i.e., funniness and aversiveness) and interpretation (i.e., criticism of sexism and woman and man disparagement) of subversive humor against sexism compared to sexist humor. In Study 1 (*n* = 202), we used a confirmatory factor analysis to verify the independence of subversive humor and sexist humor. The pattern of relations between feminist identity and the appreciation and interpretation of subversive humor against sexism was the opposite to that found between feminist identity and the appreciation and interpretation of sexist humor. The same happened with the relations between hostile sexism and subversive humor vs. sexist humor. In Study 2 (*n* = 169), we experimentally manipulated the type of humor. The pattern of interactions between type of humor and feminist identity was the opposite to that found between type of humor and hostile sexism. Both studies revealed that the appreciation of subversive humor was higher in more feminist participants but the appreciation of sexist humor was higher in more sexist participants. Participants with the highest levels of feminist identity and the lowest levels of hostile sexism perceived the greatest criticism of sexism in subversive humor and the highest woman disparagement in sexist humor.

*Keywords:* Subversive humor against sexism, sexist humor, feminist identity, hostile sexism, individual differences.

Humor can be used as a subtle way to express prejudice (Ford, Richardson, & Petit, 2015). In fact, it can be a way to disparage or delegitimize a social group and avoid any reprobation for it, since it is “just a joke”. When humor is used this way, it tends to reinforce social hierarchies and asymmetries (Saucier, O’Dea, & Strain, 2016). Yet, humor can also be used to criticize and challenge inequality (Saucier, Strain, Miller, O’Dea, & Till, 2018) and become an instrument to subvert the status quo (e.g., Strain, Martens, & Saucier, 2016).

In fact, humor has actively been used by feminists to counter misogyny and sexism (Case & Lippard, 2009). Although different types of feminism have been identified based on different epistemological and ontological points of view, we have relied upon the ideas of Varela (2008) to conceptualize the former. In this sense, feminism stands as a political theory and social practice based on justice but, equally, as a way of being in the world that implies becoming aware of the discrimination suffered by women and organizing to end it in order to transform the society.

 Among the multiple strategies for achieving their goals, feminists have used humor as an empowering tool of confrontation to evince, question, and challenge the status quo derived from the gender roles, attitudes, and stereotypes established by the patriarchy. Humor that is understood in this way has been known as “subversive humor against sexism” or “feminist humor” (Case & Lippard, 2009; Shifman & Lemish, 2010, Riquelme). According to Rappoport (2005), feminist humor would emerge as a response to the situation of discrimination and disadvantage that women face at a cultural and social level, in an attempt to change this situation.

There are many open questions about the nature of feminist humor. One of its most relevant aspects is how it is interpreted by its recipients. For example, is it perceived as humor that questions sexism or as one of the many ways of denigrating women? Given that subversive humor against sexism is presented as a social satire, it can be interpreted ambiguously (Strain et al., 2016) and even be perceived as disparaging instead of as a way to criticize and question sexism. Therefore, it could have similarities with sexist humor (e.g., Mallet, Ford, & Woodzicka, 2016).

The interpretative ambiguity of subversive humor has recently been explored focusing on anti-racist (vs. racist) humor. Miller, O’Dea, Lawless and Saucier (2019) observed that some individual variables (i.e., the tendency to detect expressions of racial prejudice, the motivation to suppress them, and attitudes about modern racism) predicted the appreciation and interpretation of anti-racist (vs. racist) humor. In fact, the appreciation and interpretation of subversive humor has been associated with attitudes toward the two players involved in this humor: the people who benefit from the discrimination or inequality situation and the people who suffer from it and try to change the situation. Transferring these ideas to the context of feminist humor would mean that its appreciation and interpretation depend on attitudes toward the oppressed or disadvantaged group (i.e., women) that confronts, criticizes and faces up to the advantaged group (i.e., men) that benefits from the discrimination and inequality situation.

Taking as a reference the results of Miller et al. (2019) regarding anti-racist (vs. racist) humor, the main objective of this research was to explore the appreciation (i.e., funniness and aversiveness) and interpretation (i.e., woman disparagement, criticism of sexism, and man disparagement) of feminist humor (vs. sexist humor) and determine whether the feminist identity and sexist attitudes of perceivers can modulate these perceptions.

**1.1 Disparagement humor: The case of sexist humor**

Disparagement humor is conceptualized as “remarks that (are intended to) elicit amusement through the denigration, derogation, or belittlement of a given target” (Ferguson & Ford, 2008, p.1). A clear example of disparagement humor is sexist humor, which is defined as a type of humor that focuses on the denigration of women.

In this area of study, the prejudiced norm theory (Ford & Ferguson, 2004) is the most valuable framework to understand the process through which men are more tolerant of prejudice against women in a humorous context. This theory postulates that humor activates a ‘rule of levity’ to switch from the usual serious mindset to a non-serious humor mindset for interpreting the message. Thus, receivers who endorse this rule consider that prejudice against women is more acceptable and permissible. It has been reported that, when exposed to this type of humor, men who have sexist attitudes against women are likely to increase their tolerance to gender discrimination at the workplace (Ford, 2000), sexual harassment (Mallet et al., 2016), and sexually violent behaviors toward women (Romero-Sánchez, Carretero-Dios, Megías, Moya, & Ford, 2017).

At this stage, it would be good to ask ourselves whether, just as sexist humor reinforces and maintains gender discrimination, other types of humor lead people to question the patriarchal ideology and gender discrimination and ultimately encourage change by subverting sexism. In this regard, humor could be used as a tool to promote the opposite effects to those of sexist humor without the need to directly face the social costs of criticizing sexism in a serious way (Saucier et al., 2018).

**1.2 Subversive humor against sexism**

Subversive humor is used as a social awareness instrument to evince inequality and try to subvert it (Strain et al. 2016), making it possible to challenge the status quo and relationships of power between privileged and subordinate individuals in a more acceptable and less violent way than using other means to overcome oppression (Holmes & Marra, 2002). It can also be seen as a tool that enables oppressed groups to rebel by reinforcing the links between them. These links would be established through a consensus around the issues criticized (Hom, 2008) and through shared solidarity regarding their disadvantaged situations (Bianchi, 2014).

In the feminist movement, women have used subversive humor to create bonds between them that they can use to question and criticize gender prejudices, stereotypes, and roles (Shifman & Lemish, 2010). Subversive humor against sexism or feminist humor is likely to allow women to laugh at the established social norms and stereotypes that keep them in a disadvantaged situation. By criticizing, exaggerating, and ridiculing these roles and stereotypes, they may be able to redefine reality and propose alternative interpretations aimed at subverting sexism and reaching equality between men and women (Case & Lippard, 2009).

In short, two essential aspects should be highlighted in the conceptualization of feminist humor: 1) it is humor related to women, to the extent that they are the main protagonists in the production and dissemination of this type of humor, 2) and it is used as a tool for situational and social confrontation, whose main objective is to subvert gender asymmetries and inequalities at the interpersonal and social levels (Riquelme, et al., 2019).

 Subversive humor against sexism has gained importance in feminist movements and received much theoretical attention. However, empirical studies about this type of humor are practically nonexistent to date. Recently, studies such as those conducted by Riquelme, Carretero-Dios, Megías, and Romero-Sánchez (2019) have obtained evidence supporting the empirical entity of this type of humor. However, despite these findings, there is still a need to clarify how feminist humor is interpreted by recipients, among other issues. In this regard, Vidmar and Rokeach (1974) already argued that more prejudiced individuals were particularly prone to interpret subversive humor in the opposite way as that intended, that is, as a way of denigrating instead of subverting. The reason for this may be that this type of humor shows the prejudice present in society as a social satire; this means that it should be processed transcending the information included in the joke and thus recognizing the prejudiced social reality it criticizes (Strain et al., 2016).

 The interpretive ambiguity of this type of humor is also influenced by its format, which together with individuals’ prejudice can make the content represented to be misinterpreted. For example, in subversive humor against sexism, a joke or humorous situation itself represents both the sexist element that is criticized (e.g., the household tasks are essentially performed by women) and the satirical criticism of this sexist element (i.e., the subversive component of humor). In this example, the defense of the sexist element is played by the powerful group (i.e., men) and the satirical criticism is played by the disadvantaged group (i.e., women). Due to its interpretive peculiarity, it is possible that subversive humor can be misinterpreted. Thus, individuals high in sexist prejudice may focus only on the part in which the woman challenges the man and consider that the man is being denigrated. This may even reinforce their prejudice against women and function in a similar manner to sexist humor. Conversely, individuals high in feminist attitudes would best extract the global critical message of subversive humor. However, these people would also be more sensitive to the situation of inequality or denigration represented in the subversive humor. Therefore, there could be a greater probability that they focus more on the denigration received by the woman than on the confrontation that she enacts. In this line of analysis, Saucier et al. (2018) exposed participants to anti-racist subversive humor (vs. racist humor vs. neutral humor). They found that 15 of the 50 participants exposed to the subversive humor condition misinterpreted this type of humor by perceiving it as disparaging. When a subversive joke is interpreted as being disparaging toward the oppressed group, it does not meet its function of fighting prejudice and paradoxically may even reinforce it (Saucier et al., 2018).

**1.3 Individual differences**

It has been recently observed that the misinterpretation of subversive humor seems to depend on the individual attitudes of recipients. Miller et al. (2019) measured the appreciation (i.e., funniness and aversiveness) and interpretation of anti-racist (vs. racist) subversive humor. Their results showed that participants’ tendency to detect expressions of prejudice and also their motivation to eliminate them were associated with less favorable responses to racist humor (i.e., it was seen as less funny and more racist) and more positive responses to anti-racist subversive humor (i.e., it was seen as funnier and more anti-racist). By contrast, participants with more favorable attitudes toward modern racism were associated with a more positive perception of racist humor and a more negative perception of anti-racist subversive humor.

These results of Miller et al. (2019) about racist (vs. anti-racist) humor underline the importance of considering that individual attitudes can also affect the interpretation of subversive humor against sexism (vs. sexist humor). The study of such attitudes is likely to reveal individual differences in the appreciation and interpretation of feminist (vs. sexist) humor and also to show whether both types of humor can be considered as independent humor types based on the responses of recipients.

Following this logic, we considered feminist identity and hostile sexism as variables of individual differences that are particularly relevant to explore the appreciation and interpretation of feminist (vs. sexist) humor. Redford, Howell, Meijs, and Ratliff (2018) argue that feminist identity is associated with feminist behaviors and beliefs whose ultimate purpose is to subvert social asymmetries between men and women. By contrast, hostile sexism is considered to include favorable beliefs on male power and status (Glick & Fiske, 1996). According to Radke, Hornsey, and Barlow (2016), hostile sexism reduces individuals’ awareness of social sexism and their intentions to take action to subvert sexism. In fact, women who identify less with feminists are believed to have more internalized hostile sexist attitudes (Zucker & Bay-Cheng, 2010).

**1.4 The present research**

Considering the ideas presented above, the aim of the present research was to analyze the appreciation (i.e., funniness and aversiveness) and interpretation (i.e., woman disparagement, criticism of sexism, and man disparagement) of subversive humor against sexism (vs. sexist humor) taking as a reference the possible influence of participants’ feminist identity and hostile sexism. Due to its interpretative peculiarity (Strain et al., 2016), subversive humor may even be perceived as disparaging and thus similar to sexist humor; therefore, at an empirical level (i.e., factor analysis), subversive and sexist humor may be a single humor category. In the case of sexist humor, the content of each joke/vignette was based on highlighting and making fun of a set of physical, psychological, or social stereotypes and prejudices against women (e.g., women only think about clothes). On the other hand, subversive humor against sexism presents different scenarios based on stereotypes and prejudices against women (e.g., unequal gender division of housekeeping or obligation of women to wax) where a situation of discrimination against women will be represented and, in turn, a woman will confront it with humorous responses.

It should be noted that previous studies have provided the first empirical data on the influence of individual variables on the appreciation of feminist humor (e.g., Gallivan, 1992; Stillion & White, 1987). Yet, these studies had a number of limitations that we have tried to overcome in our research. For example, Gallivan (1992) used cartoons or slogans from feminist products, without verifying whether this type of material could be classified as feminist humor or empirically differed from other types of humor. In addition, the appreciation of feminist humor has only been based on funniness ratings (e.g., Stillon & White, 1987). However, assessing the appreciation of non-neutral humorous material only based on the funniness it elicits is incomplete. Aversiveness ratings make it possible to account for a variance not covered by funniness ratings (see Carretero-Dios et al., 2010). This is particularly relevant when exploring the relationship between humor appreciation and variables of individual ideological differences (Ruch, 2001).

Continuing with the limitations of previous studies, it is worth noting that studies assessing feminist identity in relation to humor appreciation have only used one single item in which participants reported to what extent they considered themselves feminists. In this regard, Leach et al. (2008) argued that feminist identity should be addressed as a construct that is one-dimensional but includes several components that must be included in the assessment. In the current research, following Leach et al. (2008), we measured solidarity and centrality as components of the feminist identification of perceivers, which implied a more comprehensive measurement.

**2 Study 1**

The main objectives of Study 1 were to empirically explore the independence of the underlying psychological constructs pertaining to this research (i.e., subversive humor against sexism vs. sexist humor) and explore the relationship patterns between both types of humor and a) feminist identity and b) hostile sexism.

Our analysis of both types of humor was based on participants’ responses in relation to humor appreciation and interpretation. Humor appreciation can be defined by means of two orthogonal dimensions that group responses with a positive valence (*funniness*) and a negative valence (*aversiveness*) (Ruch & Hehl, 2007). Moreover, to explore the interpretation of humor, we assessed to what extent subversive humor and sexist humor were interpreted as a way of denigrating women, of criticizing sexism, or of denigrating men.

The main function of subversive humor is to confront prejudice (Strain et al., 2016). Interestingly, this type of humor depicts women who are in discriminatory situations and confront such discrimination. Given that people with a more feminist identity tend to perceive of expressions of prejudice against women to a greater extent (Leaper & Arias, 2011), they can be expected to be more sensitive to the discriminatory information about women included in subversive humor. They should therefore be more likely to detect the criticism of sexism included in this humor category. This is because they have a greater feminist consciousness (Zucker & Bay-Cheng, 2010) and therefore support feminist beliefs aimed at subverting sexism more than other people (Redford et al., 2018). This, in turn, is likely to make these people perceive confrontation as a means to end sexism and achieve gender equality and therefore not to consider that men are being denigrated.

We expected to find empirical support for our first hypothesis: that the assessments of subversive humor and sexist humor would cluster into two different factors. Furthermore, if the ultimate goal of subversive humor is to subvert sexism by criticizing and questioning it, it is logical to expect a more feminist identity to be associated with a greater appreciation of subversive humor (Gallivan, 1992; Stillion & White, 1987). Conversely, we expected more hostile sexist attitudes to be associated with a lower appreciation of this type of humor (Hypothesis 2.1). We also expected to find a positive relationship between feminist identity and the degree to which individuals consider that feminist humor denigrates women and criticizes sexism, and a negative relationship between feminist identity and the perception that this type of humor denigrates men (Hypothesis 2.2.). In relation to hostile sexism, it is logical to expect the opposite, that is, that individuals higher in hostile sexism are less sensitive to the component of criticism of sexism present in feminist humor and tend to perceive a greater denigration of men in this type of humor. We did not expect to find any relationships between hostile sexism and responses to the question about whether feminist humor denigrated women.

**2.1 Method**

**2.1.1 Participants**

In the context of a power analysis, we consider correlations of 0.10, 0.20, and 0.30 as relatively small, typical, and relatively large (Gignac & Szodorai, 2016). Sample size was determined a-priori and calculated using G\*Power (Faul, Erdfelder, Buchner, & Lang, 2009), which determined that the minimum required sample size for bivariate correlations was 191 in order to capture Pearson’s *r* effect size = 0.20 (α = 0.05) with 80% power. Using the same software, in respect of the preliminary analyses based on the gender differences in attitudinal variables the required sample size was determined to be 120 to conduct one-way ANOVAs with gender as the inter-group independent variable (*f* effect size 0.25 (ŋ2 = 0.06), power 0.80, α = 0.05). Finally, the minimum required sample size for repeated measures ANOVAs with type of humor as the intra-group independent variable and gender as the inter-group variable was 98 (*f* effect size 0.25 (ŋ2 = 0.06), power 0.80, α = 0.05).

Moreover, following Batista-Foguet, Coenders, and Alonso (2004), we decided to require a minimum of 200 participants to perform a confirmatory factor analysis (CFA). The sample comprised 220 undergraduate students from a range of disciplines. Data from 18 participants were excluded from the analyses: 5 participants did not return the booklet, 10 participants reported that Spanish was not their native language, and 3 participants did not complete the study. The final sample was composed of 202 undergraduate students (100 women and 102 men. The age of females ranged between 18 and 43 years (*M* = 22.32; *SD* = 3.89); the age of males ranged between l8 and 39 years (*M* = 22.45; *SD* = 3.81).

**2.1.2 Instruments**

We presented participants with two supposedly different studies with a booklet divided into two parts. The first part contained 5 subversive humor against sexism stimuli from a battery empirically analyzed by Riquelme et al. (2019) and 5 sexist humorous stimuli from a battery by Romero-Sánchez et al. (2017) (see the supplementary material for the jokes in their English translation). Jokes and cartoons were presented randomly; we assessed their funniness (subversive humor: α = .71, ω = .72; and sexist humor: α = .81, ω = .82) and aversiveness (subversive humor: α = .77, ω = .78; sexist humor: α = .90, ω = .90) on two 5-point Likert scales from 0 (*not at all funny/not at all aversive*) to 4 (*very funny/very aversive*). Moreover, for each joke or cartoon, we used a 5-point Likert scale (from 0 = *totally disagree* to 4 = *totally agree*) to assess how participants perceived they depicted woman disparagement (i.e., in this joke/vignette women are denigrated) (subversive humor: α = .80, ω = .81; sexist humor: α = .83, ω = .83), criticism of sexism (i.e., in this joke/vignette sexism against women is criticized) (subversive humor against sexism: α = .78, ω = .80; and sexist humor: α = .92, ω = .92), or man disparagement (i.e., in this joke/vignette men are denigrated) (subversive humor: α = .81, ω = .82; and sexist humor: α = .68, ω = .70).

In the second part, participants had to complete the following inventories and scales:

***Multicomponent Ingroup Identification Scale*** (Leach et al., 2008). Scale items assessing solidarity (i.e., the feeling of a psychological link with ingroup members) and centrality (i.e., central ingroup aspect in self-concept) were used. The six items had a Likert-type response format (1 = strongly disagree and 7 = totally agree). The scale used was adapted to evaluate identification with feminists since the original scale measures ingroup identification in general (e.g., solidarity: “I feel solidarity with [feminists]”), (e.g., centrality: “The fact that I am [a feminist] is an important part of my identity”). A total mean score of feminist identification was used (α = .94, ω = .95). A principal axis factor analysis showed a unique factor with an eigenvalue of 4.81. All items loaded strongly on this unique factor (with factor loadings > .79), and the explained variance was 76.37%.

***Spanish version of the Ambivalent Sexism Inventory*** (Expósito, Moya, & Glick, 1998). We focused on the hostile sexism subscale. The subscale comprised 11 items with statements such as “Women seek to gain power by getting control over men” (α = .93, ω = .93). Participants indicated their agreement with each statement on a 6-point Likert scale (0 = *strongly disagree*, 5 = *strongly agree*). Principal axis factor analysis showed a unique factor with an eigenvalue of 6.36. Loadings were > .65, and the explained variance was 57.81%.

**2.1.3 Procedure**

Potential participants were approached in several libraries of a university in southern Spain and asked if they accepted to take part in the study voluntarily. They did not receive any monetary or academic compensation for their participation. They were instructed to participate in two allegedly unrelated studies without being informed of the specific topics of the research (i.e., feminism, sexism). Participants first read 10 jokes and cartoons (5 subversive and 5 sexist ones) and rated the funniness, aversiveness, woman disparagement, criticism of sexism, and man disparagement of each one. Later, participants completed the Multicomponent Ingroup Identification Scale (Leach et al., 2008) and the Spanish version of the Ambivalent Sexism Inventory (Expósito et al., 1998). Finally, they completed a sociodemographic questionnaire (i.e., sex, age, nationality, native language, university degree, and sexual orientation) and were thanked for their participation and fully debriefed about the goals of our research.

**2.2 Results**

**2.2.1 Preliminary analyses**

Two one-way ANOVAs with gender as the independent variable and feminist identity or hostile sexism as the dependent variable showed that women´s feminist identity scores (*M* = 5.40, *SD* = 1.65) were higher than men´s feminist identity scores (*M* = 4.18, *SD* = 1.68), *F*(1, 200) = 26,84, *p* < .001, ŋ2 = .11, and that hostile sexism was higher in the case of men (*M* = 1.42, *SD* = 1.24) than in the case of women (*M* = 0.74, *SD* = 0.80), *F*(1, 200) = 25,69, *p* < .001, ŋ2 = .11. Feminist identity correlated negatively with hostile sexism (*r* = -.70, *p* <.001).

**2.2.2** **Appreciation and interpretation of feminist humor versus sexist humor**

We performed a CFA using the Mplus 7.11 statistical package (Muthén & Muthén, 2012) to test the dimensional independence between the underlying psychological constructs of both types of humor explored. We estimated the parameters for the CFA model with the MLR estimation procedure. We assessed model fit using the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker–Lewis index (TLI). RMSEA values less than or equal to .05 and CFI and TLI values greater than or equal to .95 were considered evidence of acceptable fit (Schumacker & Lomax, 2010). We tested two different models based on the single items (Table 1): a one-factor model composed of all the humorous stimuli (Model 1); and a two-factor model composed of subversive humor against sexism vs. sexist humor (Model 2).

Table 1

*Confirmatory factor analysis of humor appreciation and interpretation*

|  | Funniness |
| --- | --- |
| Models | χ²(*df*) | CFI | TLI | RMSEA [90% CI] |
| Model 1 | 386.785 (35) | 0.120 | -0.132 | 0.225 [0.205 0.245] |
| Model 2 | 48.36 (34) | 0.964 | 0.952 | 0.046 [0.000 0.074] |
|  | Aversiveness |
| Models | χ²(*df*) | CFI | TLI | RMSEA [90% CI] |
| Model 1 | 148.222 (35) | 0.832 | 0.756 | 0.140 [0.118 0.163] |
| Model 2 | 58.092 (34) | 0.960 | 0.940 | 0.070 [0.042 0.096] |
|  | Woman disparagement |
| Models | χ²(*df*) | CFI | TLI | RMSEA [90% CI] |
| Model 1 | 167.036 (35) | 0.763 | 0.667 | 0.147 [0.126 0.170] |
| Model 2 | 44.622 (34) | 0.976 | 0.965 | 0.047 [0.000 0.077] |
|  | Criticism of sexism |
| Models | χ²(*df*) | CFI | TLI | RMSEA [90% CI] |
| Model 1 | 158.222 (35) | 0.802 | 0.726 | 0.142 [0.128 0.174] |
| Model 2 | 58.055 (34) | 0.968 | 0.957 | 0.060 [0.032 0.086] |
|  | Man disparagement |
| Models | χ²(*df*) | CFI | TLI | RMSEA [90% CI] |
| Model 1 | 73.612 (35) | 0.863 | 0.818 | 0.077 [0.053 0.102] |
| Model 2 | 40.80 (34) | 0.973 | 0.963 | 0.035 [0.000 0.066] |

*Note. N* = 202; *males N =* 102; *females N =* 100*.* CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root-mean-square error of approximation; CI = confidence interval. Model 1 = one-factor model composed of all the humorous stimuli. Model 2 = two-factor model composed of sexist humor vs. subversive humor against sexism.

As shown on Table 1, the CFA confirmed that the structure defined by the two original factors (i.e., subversive humor and sexist humor) showed the best model fit in the sample for all mean scores. This finding corroborated that the items were grouped in the predicted directions according to Hypothesis 1. The standardized factor loadings for subversive humor against sexism were appropriate for all the appreciation and interpretation responses to humor (funniness: from .40 to .76; aversiveness: from .56 to .71; woman disparagement: from .52 to .73; criticism of sexism: from .62 to .82; man disparagement: from .58 to .76). In the case of sexist humor, standardized factor loadings were also appropriate (funniness: from .51 to .89; aversiveness: from .64 to .88; woman disparagement: from .56 to .79; criticism of sexism: from .65 to .89; man disparagement: from .55 to .66). Modification indices as reported by Mplus did not reveal any significant secondary factor loadings.

Descriptive statistics by gender and type of humor, for funniness, aversiveness, woman disparagement, criticism of sexism, and man disparagement, are presented in Table 2. We conducted repeated measures ANOVAs with type of humor as the intra-group independent variable and with gender as the inter-group variable, and the results may also be observed in Table 2.

Table 2

*Descriptive statistics of humor responses by type of humor and gender*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Subversive humor | Sexist humor |  | ANOVA effects |  |
|  | Total | Male | Female | Total | Male | Female | Gender | Humor | Gender x Humor |
| Measures | *M (SD)* | *M (SD)* | *M (SD)* | *M (SD)* | *M (SD)* | *M (SD)* | *F p* ŋp2 | *F p* ŋp2 | *F p* ŋp2 |
| Funniness | 1.78(0.81) | 1.60(0.90) | 1.96 (1.01) | 0.81 (0.94) | 1.29 (1.04) | 0.32 (0.48) | 10.33 | .002 | 0.05 | 143.99 | <.001 | 0.42 | 66.21 | <.001 | 0.25 |
| Aversive. | 1.23(0.99) | 1.11 (0.98) | 1.34 (1.05) | 2.79 (1.19) | 2.28 (1.26) | 3.31 (0.83) | 27.77 | <.001 | 0.12 | 358.60 | <.001 | 0.64 | 23.19 | <.001 | 0.10 |
| Woman D. | 1.48(1.12) | 1.23(1.06) | 1.73(1.13) | 3.29(0.85) | 3.06(0.88) | 3.52(0.75) | 17.54 | <.001 | 0.08 | 582.09 | <.001 | 0.75 | 0.08 | .77 | - |
| Criticism  | 2.73(0.99) | 2.49(1.02) | 2.96(0.92) | 1.43(1.45) | 1.20(1.29) | 1.67(1.57) | 13.67 | <.001 | 0.06 | 117.34 | <.001 | 0.37 | 0.001 | .97 | - |
| Man D. | 0.76(0.86) | 0.88(0.98) | 0.63(0.70) | 0.21(0.43) | 0.31(0.54) | 0.10(0.23) | 8.40 | .004 | 0.04 | 101.95 | <.001 | 0.34 | 0.20 | .65 | - |

*Note*.  *N =* 202; *males N =* 102; *females N =* 100*.* Aversive. = Aversiveness, Woman D. = Woman disparagement, Criticism = Criticism of sexism, Man D. = Man disparagement.

As shown Table 2, subversive humor against sexism received higher funniness scores and lower aversiveness scores than sexist humor. Moreover, perceived criticism of sexism and man disparagement was higher in subversive humor, while woman disparagement was perceived as greater in sexist humor. With respect to the type of humor x gender interactions, these were only statistically significant on funniness and aversiveness scores. Specifically, females evoked greater funniness than males in the case of subversive humor, *F*(1, 199) = 6.75, *p* = .01, ŋ2 = 0.03, while males evoked greater funniness than females in the case of sexist humor, *F*(1, 199) = 70.87, *p* < .001, ŋ2 = 0.26. In addition, aversiveness scores in regard to sexist humor were higher for females than males, *F*(1, 199) = 46.48, *p* < .001, ŋ2 = 0.18. However, gender differences were not found in the aversiveness responses pertaining to subversive humor, *F*(1, 199) = 2.81, *p* = .09, ŋ2 = 0.01.

With consideration to our results concerning the gender effects on attitudinal variables and humor responses, subsequent analyses were carried out controlling for gender. The results shown concerning the gender role in the humor responses (Carretero-Dios, Pérez, & Buela-Casal, 2010; Kochersberger, Ford, Woodzicka, Romero-Sánchez, & Carretero-Dios, 2014) or attitudinal variables (e.g., Riquelme et al., 2019) are in line with previous research. Partial correlations (controlling for gender) between all of the humor appreciation and interpretation variables are presented in Table 3.

Table 3

*Partial correlations between humor responses (controlling for gender)*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Measures | *M* | *SD* | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Subversive humor |  |  |  |  |  |  |  |  |  |  |  |  |
| 1. Funniness
 | 1.78 | 0.97 | ̶̶ |  |  |  |  |  |  |  |  |  |
| 1. Aversiveness
 | 1.23 | 0.99 | -.44\*\* | ̶ |  |  |  |  |  |  |  |  |
| 1. Woman disparagement
 | 1.48 | 1.12 | -.16 | .64\*\* | \_ |  |  |  |  |  |  |  |
| 1. Criticism of sexism
 | 2.73 | 0.99 | .22\* | -.07 | .19 | \_ |  |  |  |  |  |  |
| 1. Man disparagement
 | 0.75 | 0.86 | -.18 | .35\*\* | .09 | -.20\* | \_ |  |  |  |  |  |
| Sexist humor |  |  |  |  |  |  |  |  |  |  |  |  |
| (6) Funniness  | 0.81 | 0.94 | .17 | -.02 | -.22\* | -.31\*\* | .30\*\* | \_ |  |  |  |  |
| (7) Aversiveness | 2.79 | 1.19 | .02 | .37\*\* | .45\*\* | .42\*\* | -.03 | -.49\*\* | \_ |  |  |  |
| (8) Woman disparagement | 3.30 | 0.85 | -.02 | .21\* | .42\*\* | .58\*\* | .01 | -.45\*\* | .66\*\* | \_ |  |  |
| (9) Criticism of sexism  | 1.43 | 1.45 | -.07 | .35\*\* | .58\*\* | .07 | .12 | -.07 | .23\* | .19 | \_ |  |
| (10) Man disparagement | 0.21 | 0.43 | .05 | .30\*\* | .12 | -.22\* | .43\*\* | .24\* | .05 | -.12 | .15 | \_ |

Note.  *N =* 202; *males N =* 102; *females N =* 100*.* Bonferroni correction for multiple comparisons with a significance threshold ≤ 0.005. \* *p* < .005 two-tailed \*\* *p* < .001, two-tailed.

As shown in Table 3, funniness evoked by subversive humor correlated negatively with aversiveness to this type of humor (*r* = -.44, *p* < .001) and positively with the interpretation that subversive humor’s main objective is to criticize sexism (*r* = .22, *p* = .002). Funniness scores for subversive humor did not correlate significantly with any sexist humor response. On the other hand, aversiveness evoked by subversive humor correlated positively with the perception of woman disparagement (*r* = .64, *p* < .001) and of man disparagement (*r* = .35, *p* < .001) concerning subversive humor. Moreover, aversiveness to subversive humor correlated positively with: aversiveness (*r* = .37, *p* < .001), woman disparagement (*r* = .21, *p* = .003), man disparagement (*r* = .30, *p* < .001), and criticism of sexism (*r* = .35, *p* < .001). Lastly, higher criticism of sexism scores for subversive humor was associated with lower perceived man disparagement (*r* = -.20, *p* = .004) regarding this type of humor. At the same time, higher scores on criticism of sexism with respect to subversive humor were associated with greater aversiveness (*r* = .42, *p* < .001) and greater woman disparagement (*r* = .58, *p* < .001) regarding sexist humor.

**2.2.3 Relationship between humor and attitudinal variable**

Partial correlations between humor and attitudinal variables controlling for gender can be observed in Table 4.

Table 4

*Partial correlations between attitudinal variables and humor (controlling for gender)*

|  |  |
| --- | --- |
|  | Subversive humor again sexism  |
| Attitudes | Funniness | Aversiveness | Woman disparagement | Critic. of sexism | Man disparagement |
| Feminist identity  | .30\*\* | -.15 | .10 | .46\*\* | -.33\*\* |
| Hostile sexism | -.16 | .08 | -.18 | -.52\*\* | .35\*\* |
|  | Sexist humor |
| Attitudes | Funniness | Aversiveness | Woman disparagement | Critic. of sexism | Man disparagement |
| Feminist identity | -.34\*\* | .31\*\* | .34\*\* | -.09 | -.27\*\* |
| Hostile sexism | .49\*\* | -.37\*\* | -.43\*\* | .10 | .28\*\* |

Note.  *N =* 202; *males N =* 102; *females N =* 100*.* Critic. of sexism = criticism of sexism. Bonferroni correction for multiple comparisons with a significance threshold ≤ .01. \* *p* < .01, two-tailed \*\* *p* < .001, two-tailed. Feminist identity (Likert scale 1-7); hostile sexism (Likert scale 0-5).

In keeping with Hypothesis 2.1, we found an opposite pattern of relationships between feminist identity and hostile sexism in responses on appreciation and interpretation of subversive humor (vs. sexist humor). As shown on Table 4, the higher the feminist identity of participants, the higher their appreciation of subversive humor (i.e., higher funniness and lower aversiveness). We found the opposite trend between hostile sexism and the funniness and aversiveness of subversive humor, although it did not reach statistical significance (Hypothesis 2.1). We ran Meng, Rosenthal, and Rubin's Z tests (see [Diedenhofen & Musch, 2015](https://www.sciencedirect.com/science/article/pii/S0005791620300641?via%3Dihub" \l "bib17)) to compare the pairs of correlation coefficients. The Z test indicated significant differences among the pairs of correlation coefficients between each humor appreciation response and feminist identity or hostile sexism (funniness: Z = 5.06, *p* < .001, [0.288 – 0.653]; aversiveness: Z = -2.89, *p*= .003, [-0.388 – -0.746]. The pattern of results for the relationships between attitudinal variables and the appreciation of sexist humor was the opposite to that observed for subversive humor. Meng et al.’s Z test again indicated significant differences between these correlation coefficients (*p*s < .001).

Concerning humor interpretation (Hypothesis 2.2), feminist identity was positively correlated with the perceived criticism of sexism in subversive humor (*r* = .46, *p* < .001) and negatively correlated with the perceived man disparagement in this type of humor (*r* = -.33, *p* < .001). The correlation between feminist identity and woman disparagement in subversive humor was positive but not statistically significant (*r* = .10, *p =.*15). Hostile sexism correlated positively with perceived man disparagement in subversive humor (*r* = .35, *p* < .001) and negatively with the perceived criticism of sexism of this type of humor (*r* = -.52, *p* < .001). Moreover, its relationship with woman disparagement was not statistically significant (*r* = -.18, *p* = .010). Meng et al.’s Z test showed significant differences between all the pairs of correlation coefficients between each humor interpretation response to subversive humor and feminist identity or hostile sexism (women disparagement: Z = 3.66, *p* < .001, [0.131 – 0.433]; criticism of sexism: Z = 10.47, *p*< .001, [0.872 – 1.274]; man disparagement: Z = -8.96, *p* < .001, [-0.863 – -0.553]).

As regards sexist humor, the most relevant results were related to woman disparagement and man disparagement. Specifically, we found a positive correlation between woman disparagement and feminist identity (*r* = .34, *p* < .001) and a negative correlation between woman disparagement and hostile sexism (*r* = -.43, *p* < .001). We found the opposite pattern for man disparagement, that is, a negative relationship with feminist identity (*r* = -.27, *p* < .001) and a positive relationship with hostile sexism (*r* = .28, *p* < .001). Meng et al.’s Z test again showed significant differences between these pairs of correlation coefficients (*p*s < .001).

**2.3 Discussion**

The results of Study 1 provide relevant insight on the appreciation and interpretation of subversive humor against sexism (vs. sexist humor). As expected according to Hypothesis 1, the CFA corroborated the differentiation between subversive humor and sexist humor for each of the responses considered in the study (i.e., funniness, aversiveness, woman disparagement, criticism of sexism, and man disparagement). In addition, subversive humor (vs. sexist humor) was perceived as being more critical of sexism, less disparaging of women, and more disparaging of men.

We found an opposite patterns of relations between the appreciation and the interpretation of each type of humor studied and the attitudinal variables. As expected, regarding *humor appreciation* (Hypothesis 2.1) we observed that a more feminist identity was associated with a greater appreciation of subversive humor (Gallivan, 1992; Riquelme et al., 2019). By contrast, more hostile sexist attitudes were associated with a greater appreciation of sexist humor (Romero-Sánchez et al., 2017). As regards the *interpretation of humor* (Hypothesis 2.2), a higher feminist identity was associated mainly with a higher perceived criticism of sexism and lower man disparagement in this type of humor. By contrast, higher hostile sexist attitudes were associated with a higher perceived man disparagement and a lower criticism of sexism in subversive humor. This finding suggests that people with higher levels of feminist identity are more able to see subversive humor as an attempt to criticize and question sexism and gender roles and stereotypes and not as a direct way of denigrating men but rather of criticizing their privileged status and their social advantages. In addition, the results obtained on hostile sexism could indicate that people higher in hostile sexism focus their attention on man disparagement.

To obtain greater insight on the effects generated regarding the appreciation and interpretation of the types of humor explored, we congfrducted Study 2 with a between-group manipulation of type of humor. We chose this methodological approach to analyze the potential moderating role of attitudinal variables on the expected effects of this type of humor on appreciation and interpretation responses.

**3 Study 2**

The main objective of this study was to analyze the effects of being exposed to subversive humor against sexism (vs. sexist humor) on its appreciation and interpretation exploring whether such effects could be moderated by feminist identity and hostile sexism. Considering the results of Study 1, we formulated the following hypotheses:

*Hypothesis 1:* As regards the main effects of type of humor, subversive humor, by comparison with sexist humor, will be assessed as being funnier, less aversive, less woman disparaging, more critical of sexism, and more man disparaging.

*Hypothesis 2:* With respect to interaction effects, we will find opposite interaction patterns between type of humor (i.e., subversive humor against sexism vs. sexist humor) and attitudinal variables (i.e., feminist identity and hostile sexism). Participants exposed to subversive humor (vs. sexist humor) with a more feminist identity (or lower hostile sexism) will perceive greater funniness, lower aversiveness, a greater criticism of sexism, and lower man disparagement. These moderating effects will not be observed in responses regarding woman disparagement (Hypothesis 2.1). Participants exposed to sexist humor (vs. subversive humor) with a more feminist identity (or lower hostile sexism) will report less funniness, greater aversiveness, and higher woman disparagement. We will not find any significant effects regarding criticism of sexism and man disparagement (Hypothesis 2.2).

**3.1 Method**

**3.1.1 Participants**

Using G\*Power 3.1 (Faul et al., 2009), we calculated a sample size of 128 for a small-to-medium effect size of *f* = .25, a significance level of α = .05, and a power of .80 (two groups, between-subject design with type of humor as independent variable and gender as covariate). Furthermore, to verify the equivalence of humor conditions in attitudinal variables through ANOVAs 2 (type of humor: subversive humor vs. sexist humor) x 2 (gender: male vs. female), the required sample size was 128 (*f* effect size 0.25 (ŋ2 = 0.06), power 0.80, α = 0.05). Minimum sample size requirements were based on a goal of 30 participants per cell (Simmons, Nelson, & Simonsohn, 2011) to test interaction considering feminist identity and hostile sexism as moderator variables. Data from 15 participants were excluded from the analysis: 8 participants reported that Spanish was not their native language, 4 participants did not return the booklet and 3 participants did not complete the study. The final sample consisted of 169 undergraduate students from a range of disciplines (88 women, 81 men). The age of females ranged between 18 and 39 years (*M* = 21.54; *SD* = 3.09), while the age of males ranged between 18 and 35 years (*M* = 22.94; *SD* = 3.91).

**3.1.2 Instruments**

We created a booklet in which the first section included scales related to ideological variables and the second one included the experimental manipulation with questions to assess appreciation and interpretation of humor.

***Ideological variables*.** We used the same instruments as in Study 1: the Multicomponent Ingroup Identification Scale (Leach et al., 2008) (α = .94, ω = .94) to assess feminist identification and the Spanish version of the Ambivalent Sexism Inventory (Expósito et al., 1998) to assess hostile sexism (α = .90, ω = .91).

***Experimental manipulation*.** We used the same 5 subversive and 5 sexist jokes as in Study 1.

***Appreciation and interpretation of humor*.** All reliability indices were adequate. In subversive humor against sexism: funniness, α = .68/ω = .70; aversiveness, α = .78/ω = .79; woman disparagement, α = .73/ω = .75; criticism of sexism, α = .77/ω = .78; man disparagement, α = .60/ω = .62. In sexist humor: funniness, α = .80/ω = .80; aversiveness, α = .92/ω = .92; woman disparagement, α = .81/ω = .82; criticism of sexism, α = .93/ω = .93; man disparagement, α = .89/ω = .90.

**3.1.3 Procedure**

Participants were randomly assigned to one of the two experimental conditions (i.e., subversive humor against sexism vs. sexist humor). Thus, type of humor was the independent variable, and hostile sexism and feminist identity were measured as individual difference variables. The dependent variables were the questions related to appreciation (i.e., funniness and aversiveness) and interpretation of humor (i.e., woman disparagement, criticism of sexism, and man disparagement).

Participants were approached in several university libraries of a university in southern Spain. First, they were instructed to participate in a study on attitudes and opinions about different society issues by completing the Multicomponent Ingroup Identification Scale (Leach et al., 2008) and the Spanish version of the Ambivalent Sexism Inventory (Expósito et al., 1998). Second, participants were told they would participate in an allegedly unrelated study to obtain their opinion on humorous material (subversive or sexist jokes and cartoons). Finally, they were invited to complete a questionnaire including sociodemographic information (similar to Study 1) and were thanked and debriefed.

* 1. **Results**

**3.2.1 Preliminary analyses**

To verify the equivalence of humor conditions in attitudinal variables, we conducted separate 2 (type of humor: subversive humor vs. sexist humor) x 2 (gender: male vs. female) ANOVAs of feminist identity and hostile sexism. We estimated effect size calculating partial eta-squared (ŋ2 ≥ 0.01/0.06/0.13 indicate small/medium/large effects; Cohen, 1988).

Feminist identity did not differ between groups (subversive humor condition, *M* = 5.23, *SD* = 1.47; sexist humor condition, *M* = 5.06, *SD* = 1.47), *F*(1, 164) = 0.18, *p* = .67). Feminist identity was higher in females (*M* = 5.83, *SD* = 1.37) than in males (*M* = 4.40, *SD* = 1.35), *F*(1, 164) = 45.32, *p* < .001, ŋ2 = 0.22. No interactions between type of humor and gender predicted responses in the scale of feminist identity, *F*(1, 164) = 0.30, *p* = 0.58. In addition, there were no statistically significant differences in participants’ hostile sexism between both types of humor, *F*(1, 165) = 0.53, *p* = 0.47 (subversive humor, *M* = .96 *SD* = .82; sexist humor, *M* = 1.09, *SD* = .93). Hostile sexism was higher in males (*M* = 1.39, *SD* = .95) than in females (*M* = .69, *SD* = .67), *F*(1, 165) = 30.20, *p* <.001, ŋ2 = 0.15. No interactions between type of humor and gender predicted responses on hostile sexism, *F*(1, 165) = 1.27, *p* = .26. Hostile sexism correlated negatively with feminist identity (*r* = -.57, *p* <.001).

**3.2.2 Subversive humor versus sexist humor**

To replicate the results of Study 1, we conducted separate one-way ANOVAs considering type of humor as a between-subject factor for its appreciation and interpretation. In all cases, gender was considered as a covariate.

Funniness responses reported by participants were significantly higher in subversive humor (*M* = 1.76; *SD* = 0.95) than sexist humor (*M* = 0.65; *SD* = 0.83), *F*(1, 163) = 66.68, *p* < .001, ŋ2 = 0.29. Moreover, participants found sexist humor to be more aversive (*M* = 3.06; *SD* = 1.08) than subversive humor (*M* = 1.13; *SD* = 0.99), *F*(1, 163) = 160.62, *p* < .001, ŋ2= 0.50. As regards the interpretation responses, participants perceived more woman disparagement in sexist humor (*M* = 3.19; *SD* = 0.83) than in subversive humor (*M* = 1.37; *SD* = 1.02), *F*(1, 165) = 176.282, *p* < .001, ŋ2 = 0.52. They also perceived more criticism of sexism in subversive humor (*M* = 2.84; *SD* = 0.97) than in sexist humor (*M* = 1.71; *SD* = 1.45), *F*(1, 165) = 34.06, *p* < .001, ŋ2 = 0.17. They perceived more man disparagement in subversive humor (*M* = 0.64; *SD* = 0.63) than in sexist humor (*M* = 0.30; *SD* = 0.73), *F*(1, 164) = 11.42, *p* = .001, ŋ2 = 0.06. All these results were in line with our Hypothesis 1.

**3.2.3 Appreciation and interpretation of humor as a function of attitudinal variables**

Using the PROCESS macro, we conducted several moderation analyses (model 1) with type of humor as the independent variable and feminist identity and hostile sexism as moderators, respectively. Dependent variables were scores in funniness, aversiveness, woman disparagement, criticism of sexism, and man disparagement. Gender was introduced as a covariate. We calculated the standardized effect size *f*2 for the interaction between type of humor and ideology. It provides information on the magnitude of the interaction (≥ 0.02/0.15/0.35 indicate small/medium/large effects; Cohen, 1988) on the basis of the change in *R*2 (*f*2) in small/medium/large (≥ 0.02/0.15/0.35) effects (Cohen, 1988).

***Interaction effects.*** In keeping with Hypothesis 2,wefound statistically significant interactions between type of humor and feminist identity in responses on funniness (*b* = 0.41, *SE* = 0.09, *t* = 4.63, *p* < .001, CI [0.23, 0.58], *f*2 = 0.08), aversiveness (*b* = -0.44, *SE* = 0.09, *t* = -4.46, *p* < .001, 95% CI [-0.64, -0.25], *f*2 = 0.05), perceived woman disparagement (*b* = -0.19, *SE* = 0.09, *t* = -2.08, *p* = .04, 95% CI [-0.37, -0.009], *f*2 = 0.01), and criticism of sexism, (*b* = 0.29, *SE* = 0.12, *t* = 2.43, *p* = .01, 95% CI [0.06, 0.53], *f*2 = 0.03). The interaction between type of humor and feminist identity was not significant for man disparagement scores (*b* = -0.09, *SE* = 0.07, *t* = -1.26, *p* = 0.21, 95% CI [-0.22, 0.50]).

As regards significant interactions, higher (vs. lower) feminist identifiers assessed subversive humor as being funnier (*β* = 0.15, *SE* = 0.07, *t* = 2.06, *p* = .04, 95% CI [0.005, 0.30]). By contrast, higher (vs. lower) feminist identifiers assessed sexist humor as being less funny (*β* = -0.25, *SE* = 0.50, *t* = -4.93, *p* < .001, 95% CI [-0.35, -0.15]) (Figure 1a). There were no significant differences in aversiveness between higher and lower feminist identifiers when assessing subversive humor (*β* = -0.11, *SE* = 0.08, *t* = -1.33, *p* = .19, 95% CI [-0.27, 0.05]). Yet, participants with higher (vs. lower) feminist identity reported a greater aversiveness of sexist humor (*β* = 0.31, *SE* = 0.70, *t* = 4.70, *p* < .001, 95% CI [0.18, 0.44]) (Figure 2a). We found no differences between higher and lower feminist identifiers in perceived woman disparagement in subversive humor (*β* = 0.21, *SE* = 0.08, *t* = 0.27, *p* = .78, 95% CI [-0.13, 0.18]). Yet, higher (vs. lower) feminist identifiers perceived higher woman disparagement in sexist humor (*β* = 0.21, *SE* = 0.50, *t* = 4.06, *p* < .001, 95% CI [0.11, 0.32]) (Figure 3a). In addition, higher (vs. lower) feminist identifiers perceived a higher criticism of sexism in subversive humor (*β* = 0.32, *SE* = 0.06, *t* = 5.17, *p* < .001, 95% CI [0.20, 0.45]). However, we found no differences between higher and lower feminist identifiers in criticism of sexism scores when presented with sexist humor (*β* = 0.03, *SE* = 0.10, *t* = 0.27, *p* = .78, 95% CI [-0.17, 0.23]) (Figure 4a).

Concerning hostile sexism, significant interactions emerged between type of humor and hostile sexism in responses regarding funniness (*b* = -0.64, *SE* = 0.15, *t* = -4.29, *p* < .001, 95% CI [-0.94, 0.35], *f*2 = 0.08), aversiveness (*b* = -0.44, *SE* = 0.09, *t* = -4.46, *p* < .001, 95% CI [-0.64, -0.25]), *f*2 = 0.04), and criticism of sexism (*b* = -0.83, *SE* = 0.21, *t* = -3.93, *p* < .001, 95% CI [-1.24, -0.41], *f*2 = 0.07). Interactions between type of humor and hostile sexism were not significant for woman disparagement (*b* = 0.30, *SE* = 0.16, *t* = 1.89, *p* = 0.06, CI [-0.01, 0.62]) or man disparagement (*b* = -0.10, *SE* = 0.11, *t* = -0.89, *p* = 0.37, CI [-0.33, 0.12]).

Considering the interactions that were found to be significant in hostile sexism, it should be underlined that participants with higher (vs. lower) hostile sexist beliefs rated subversive humor as being less funny (*β* = -0.25, *SE* = 0.12, *t* = -1.97, *p* = .05, 95% CI [-0.50, 0.002]). Yet, these participants were those who rated sexist humor as being funnier (*β* = 0.40, *SE* = 0.09, *t* = 4.63, *p* < .001, 95% CI [0.23, 0.57]) (Figure 1b). As happened with feminist identity, we found no differences between participants higher and lower in hostile sexism regarding the aversiveness scores of subversive humor (*β* = 0.14, *SE* = 0.13, *t* = 1.03, *p* = .30, 95% CI [-0.13, 0.40]). Yet, participants higher (vs. lower) in hostile sexism rated sexist humor as being less aversive (*β* = -0.47, *SE* = 0.12, *t* = -4.05, *p* < .001, 95% CI [-0.70, -0.24]) (Figure 2b). These participants reported lower perception that subversive humor was being used to criticize sexism (*β* = -0.60, *SE* = 0.11, *t* = -5.33, *p* < .001, 95% CI [-0.82, -0.38]). When assessing sexist humor, we found no differences between participants higher and lower in hostile sexism in perceived criticism of sexism (*β* = 0.22, *SE* = 0.17, *t* = 1.31, *p* = .19, 95% CI [-0.11, 0.56]) (Figure 4b).

|  |  |
| --- | --- |
|  |  |
| *Feminist identity x Type of humor* | *Hostile sexism x Type of humor* |
| Funniness as a function of ideological variables and type of humor |
|  |  |
| Figure 2a | Figure 2b |
| *Feminist identity x Type of humor* | *Hostile sexism x Type of humor* |
| Aversiveness as a function of ideological variables and type of humor |

|  |  |
| --- | --- |
|  |  |
| Figure 3a | Figure 3b |
| *Feminist identity x Type of humor* | *Hostile sexism x Type of humor* |
| Woman disparagement as a function of ideological variables and type of humor |

|  |  |
| --- | --- |
|  |  |
| Figure 4a | Figure 4b |
| *Feminist identity x Type of humor* | *Hostile sexism x Type of humor* |
| Criticism of sexism as a function of ideological variables and type of humor |

**3.3 Discussion**

Study 2 replicated the main results of Study 1 in a between-group experimental design used to explore the moderating role of feminist identity and hostile sexism on the appreciation and interpretation of subversive humor against sexism (vs. sexist humor).

In accordance with Hypothesis 1, subversive humor, when compared to sexist humor, was perceived as being funnier, less aversive, less woman disparaging, more critical of sexism, and more man disparaging.

In line with Hypothesis 2.1, as regards subversive humor against sexism, higher funniness was associated with a higher feminist identity and lower hostile sexism. Interestingly, as predicted, participants with higher feminist identity and lower hostile sexism scores perceived greater criticism of sexism in subversive humor.

In support of Hypothesis 2.2, we found the opposite pattern of results for sexist humor: it was considered funnier by participants higher in hostile sexism and lower in feminist identity. In addition, participants with higher feminist identity and lower hostile sexism scores found greater aversiveness in regard to sexist humor. Moreover, participants with higher feminist identity and lower hostile sexism scores perceived higher denigration of women in sexist humor.

In sum, these findings underline the importance of attitudinal variables in the appreciation and interpretation of subversive humor against sexism versus sexist humor. Specifically, people with higher feminist identity and lower hostile sexism scores made the best interpretation of the contents used to define both types of humor.

**4 General Discussion**

The present research was motivated by several open questions on the empirical nature of subversive humor against sexism (Case & Lippard, 2009). Riquelme et al. (2019) argued that, given its interpretative peculiarity, this type of humor can be perceived as an attempt to denigrate the social group it aims to defend rather than as an attempt to criticize its oppressed status (Saucier et al., 2018). Thus, subversive humor against sexism could be considered as a variation of sexist humor. In this regard, the main objective of the present research was to analyze how feminist humor (vs. sexist humor) is appreciated and interpreted and explore how these perceptions may be modulated by the feminist identity and hostile sexism of perceivers.

In Study 1, a CFA corroborated the independence of funniness, aversiveness, woman and man disparagement, and criticism of sexism among subversive humor and sexist humor. It also showed that feminist identity and hostile sexism exhibited an opposite pattern of relationships in the appreciation and interpretation of both types of humor. In Study 2, through a between-group experimental design, we confirmed the opposite interaction pattern between type of humor and the attitudinal variables explored in the prediction of the appreciation and interpretation of humor.

A higher feminist identification is closely related with interiorizing and/or supporting beliefs associated with equality between men and women (Redford et al., 2018). By contrast, a higher hostile sexism is associated with a higher aversion of women based on stereotypical ideas on their individual and social inferiority. In our research, the relationship we found between feminist identity and hostile sexism on one side and the appreciation of subversive (vs. sexist) humor on the other was as expected. Specifically, people with a higher feminist identification tended to report a higher appreciation of this type of humor and a lower appreciation of sexist humor. Conversely and consistent with previous research (Romero-Sánchez et al., 2017), a greater adherence to hostile sexist beliefs was associated with a higher appreciation of sexist humor.

Going one step further, we found an opposite pattern of results regarding the interpretation of subversive humor against sexism and sexist humor (i.e., woman disparagement, criticism of sexism, and man disparagement) as a function of participant ideology (i.e., feminist identity and hostile sexism). The most relevant findings of the present research were that people with a higher feminist identity perceived higher woman disparagement in sexist humor and a greater criticism of sexism in subversive humor. By contrast, participants with a higher adherence of hostile sexism interpreted subversive humor less as a way of criticizing sexism and in turn detected woman denigration less in sexist humor. Moreover, in general, higher hostile sexism led participants to interpret a higher man disparagement.

People with a higher feminist ideology are more aware of gender inequality (Leaper & Arias, 2011) and therefore are more sensitive to the prejudice and discrimination against women present in sexist jokes. In subversive humor against sexism, we did not find a significant relationship between a higher feminist identity and higher perceived woman disparagement. In principle, participants higher in feminist identity could be expected to perceive higher woman disparagement in subversive humor against sexism given that this humorous material is characterized not only by using satire to criticize a given sexist element (i.e., the subversive component of humor) but also by the presence of the sexist element that it aims to criticize. For this reason, people higher in feminist identity may focus on the sexist element present in the joke and perceive it as woman disparagement humor. However, our findings did not go in this direction. In fact, although higher feminist identifiers detected gender discrimination situations more and were more aware of them (Zucker & Bay-Cheng, 2010), they were also those who best interpreted the global message of subversive jokes. Thus, when faced with a subversive joke, they seem to go beyond the perception of woman denigration presented in the narration of the sexist situation (e.g., inequality in heterosexual relationships) and focus essentially on the ultimate objective of this humorous material, that is, to subvert unequal gender relations.

As pointed out by previous studies, when feminist humor is used, it is done with the intention of criticizing and questioning sexism in society (Case & Lippard, 2009; Shifman & Lemish, 2010). In this regard, our results clearly showed that, despite the ambiguity of this type of humor, people with higher feminist identification had a greater tendency to perceive the criticism of sexism than those higher in hostile sexism.

Finally, in reference to the absence of significant interaction effects on perceived man disparagement, the interpretation of subversive humor by people higher in feminist identity seems to focus on the global message aimed at criticizing sexism. In fact, these people are likely to interpret the confrontation of women present in subversive jokes as a way of ending social sexism; thus, they would not consider that men are being disparaged, even if they are indirectly attacked and criticized. However, our findings about hostile sexism should be highlighted. It was logical to expect participants high in hostile sexism to report a greater perception that men are being disparaged and ridiculed in subversive humor. Yet, interestingly, we found that, regardless of the type of humor presented (i.e., subversive vs. sexist), interiorizing greater hostile sexist attitudes was associated with perceiving greater man disparagement.

**4.1 Limitations and future research directions**

Despite their relevance, these results should be considered along with certain limitations of this research. One of such limitations relates to the sample analyzed: a population of undergraduate students, who have a similar level of studies and age range. Previous studies on sexist humor have revealed that older people perceive this type of humor as less funny and more aversive compared to younger people (LaFrance & Woodzika, 1998). Future studies should be conducted with a more heterogeneous population in terms of age and other sociodemographic variables to be able to better generalize the results obtained.

Second, it is important to mention the influence that the sample sizes of our research could have on the stability of the reported results. In the case of Study 2, where the interaction processes between the type of humor and the ideological variables were analyzed by adopting an experimental approach, we should consider increasing the sample size in order to correctly analyze these interactions (Gelman, Hill & Ventari, 2020). Regarding the study of the relationships between variables (Study 1), it would be interesting to analyze the latent correlations between the assessed dimensions, since the Pearson correlations are attenuated due to error measurement. In relation to computing latent correlations, recent simulation studies underline that the sample sizes required to estimate stable measurement-error-free correlations have been found to approach N = 490 for typical research scenarios (population correlation *ρ* = .20; composite score reliability ω = .70) (Kretzschmar & Gignac, 2019).

Third, in this research our aim was to explore appreciation and interpretation of subversive (vs. sexist) humor, taking only attitudinal variables into account as individual differences. However, we are aware that individual differences are also derived from other types of variables. Due to the fact that subversive humor presents a complexity in terms of its cognitive processing (Strain et al., 2016) and that because of this it can be misinterpreted (Saucier et al., 2018), it would be interesting to analyze not only the role of substantive personality traits (Galloway & Chirico, 2008; Gignac, Karatamoglou, Wee & Palacios, 2014; Moran, Rain, Page-Gould, & Mar, 2014), but, also, the cognitive processes involved in the perception of this type of humor (Chan, Liao, Tu, & Chen, 2016; Ruch, 2001).

Fourth, and finally, future studies could consider other formats of humorous material in which humor emerges more naturally and can have a greater impact on perceivers, for example through audiovisual material with stand-up monologues of feminists or in face-to-face laboratory situations.

**4.2 Conclusions**

In the 21st century the struggle for gender equality is still evident. Many strategies are being implemented to raise awareness concerning this equality. In this sense, subversive humor against sexism is being engaged with as a tool for criticizing and questioning sexism in society. However, given the ambiguity of this type of humor, it can be misinterpreted, to the extent of being perceived as an attempt to denigrate the social group it aims to defend. Our research contributes to the growing interest in analyzing this type of humor, showing that feminist humor is an independent category of humor (distinct from sexist humor) and underlining the relevance of individual differences (specifically feminist identity) in its interpretation and appreciation.

**Open Science Requirement**

The authors of this paper confirm that they have included information concerning all the measures used, conditions, and data exclusions. Additionally, we point out that the size of the samples has been calculated through G\*Power (Faul et al., 2009).

**CRediT authorship contribution statement**

All four authors contributed to the design, hypothesis development, and data analysis. The first author led the writing of the manuscript with contributions and reviews and revisions from the second, third and fourth authors.

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**Appendix A.** Supplementary data Supplementary data to this article can be found online at https://doi. org/10.1016/j.paid.2021.110794.

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