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## Exposure to sexism impairs women's writing skills even before their evaluation

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(Article begins on next page)

# Sexuality & Culture

## Exposure to sexism impairs women's writing skills even before their evaluation --Manuscript Draft--

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<b>Abstract:</b>	<p>In two experimental vignette studies, we examined the relationship between exposure to a sexist message and women's writing skills in the context of a simulated job selection interview. In Study 1, under experimental conditions, 85 Italian women ( <math>M</math> age = 26.99, <math>SD</math> = 10.62) were exposed to a benevolent sexist message, a hostile sexist message, or a neutral message, and evaluated the sexism of the job selection interview they were involved in. Then, before performing the problem-solving task that would allegedly be used in the selection process, we measured the perceived sexism of the scenario by asking them to write a short text—not connected with the subsequent evaluation—in which they had to describe this experience to a close friend. Results showed that exposure to a hostile or to a benevolent sexist message impaired women's writing skills, through the mediation of the perception of sexism of the message. These results have been found by serendipity. In Study 2 ( <math>N</math> = 114, <math>M</math> age = 26.99, <math>SD</math> = 10.62), performed using the same experimental procedure, but adopting more convincing variables and stronger data analyses, we confirmed the results of Study 1. The strengths, limitations, and possible developments of the research are discussed.</p>

Dear Prof. Refinetti:

We would like you for your “minor revisions” decision and Reviewer 1 for his/her valuable feedback and appreciation on our manuscript. Below you can find a point-to-point description of all the comments raised Reviewer 1, together with our answers.

We hope that this revision of the manuscript will meet the high standards of *Sexuality and Culture*. However, if there are any additional concerns or if there are more changes you would like us to make, we would be glad to do so.

Our best regards,

The authors

### Reviewer 1

**Comment 1. First of all, I would suggest the authors to specify by the very beginning of the paper the aim of the studies. I think they could add a sentence or two about this by the end of the introduction section.**

Authors' response. As suggested, in this revision, at the end of the Introduction, we wrote, “In this article, resorting to two experimental vignette studies simulating a job selection interview, we aimed to examine how exposure to sexist messages impair women's writing skills” (see page 3, lines 12-13).

**Comment 2. In study 1, I suggest the authors to report results about the problem-solving test they took from Dardenne et al. (2007). It is clear that they did not find the same pattern of results reported by Dardenne et al. (2007), so I think it is important to report the exact results here.**

Authors' response. As requested, in this revision we reported the exact results we gained in Study 1 when analyzing the relation between exposure to sexist messages and participants' performance in the simulated job selection interview: “: the performances of the participants exposed to the benevolent sexist message ( $M = 4.36$ ,  $SD = 3.85$ ), to the hostile sexist message ( $M = 4.89$ ,  $SD = 3.73$ ), and to the neutral message ( $M = 3.78$ ,  $SD = 3.78$ ) were statistically equal,  $F(2,82) = .58$ ,  $p = .56$ .” (see page 5, lines 13-15).

**Comment 3. Not all the readers are familiar with mediational model: the author could add figures representing the model they tested.**

Authors' response. In this revision, as requested, we have added Figure 1 and Figure 2, that represent in graphical form our results. To avoid redundancies, we have reported the direct

regressions weights in the figures, and have deleted them from the text.

**Comment 4. I would delete from the abstract the sentence: "...using partially suboptimal measures and data analyses". This is clear from the subsequent sentence: "...In Study 2, [...] performed using the same experimental procedure, but adopting more convincing variables and stronger data analyses, ..."**

Authors' response. Done (see page 2, lines 9-10).

**Exposure to sexism impairs women's writing skills even before their evaluation**

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**Abstract**

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2  
3 2 In two experimental vignette studies, we examined the relationship between exposure to a sexist message and women's  
4  
5 3 writing skills in the context of a simulated job selection interview. In Study 1, under experimental conditions, 85 Italian  
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7 4 women ( $M_{\text{age}} = 26.99$ ,  $SD = 10.62$ ) were exposed to a benevolent sexist message, a hostile sexist message, or a neutral  
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9 5 message, and evaluated the sexism of the job selection interview they were involved in. Then, before performing the  
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11 6 problem-solving task that would allegedly be used in the selection process, we measured the perceived sexism of the  
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13 7 scenario by asking them to write a short text—not connected with the subsequent evaluation—in which they had to  
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15 8 describe this experience to a close friend. Results showed that exposure to a hostile or to a benevolent sexist message  
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17 9 impaired women's writing skills, through the mediation of the perception of sexism of the message. These results have  
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19 10 been found by serendipity. In Study 2 ( $N = 114$ ,  $M_{\text{age}} = 26.99$ ,  $SD = 10.62$ ), performed using the same experimental  
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21 11 procedure, but adopting more convincing variables and stronger data analyses, we confirmed the results of Study 1. The  
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23 12 strengths, limitations, and possible developments of the research are discussed.  
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28 14 **Keywords:** Hostile Sexism; Benevolent Sexism; Performance; Writing Skills  
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## Introduction

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2 In recent decades, the situation of Western women has improved relatively. For instance, the Eurostat (2019)  
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4 data show an increase in the percentage of European women in employment from 58.2% to 67.4% between 2002 and  
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6 2018. However, significant gender-based disparities between women and men still exist worldwide. This gender gap  
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8 displays itself in four main areas in which women are disadvantaged compared with men: politics, economics,  
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10 education, and health. Indeed, compared with men, women are underrepresented in the workforce and at the highest  
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12 level of political decision making, earn less, find it more difficult to establish a career, have minor chances to gain an  
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14 education, and have a worse state of health (however, the latter two gaps have almost closed) (World Economic Forum  
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16 2018). The Italian situation (i.e., in the context in which we performed this research) is consistent with this picture: In  
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18 the workplace, compared with men, women are still underrepresented, they earn less, and they occupy lower positions  
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20 (Istat 2017). For these reasons, a growing body of research has analyzed the socio-psychological processes that promote  
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22 the maintenance of gender inequalities. In this article, resorting to two experimental vignette studies simulating a job  
23  
24 selection interview, we aimed to examine how exposure to sexist messages impair women's writing skills.

25

## Benevolent and Hostile Sexism

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28 Sexism is one of the most powerful mechanisms that foster gender inequality (Glick and Fiske 1996, 2001b).  
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30 Sexism is a prejudice against women, and it takes two forms: hostile and benevolent. Hostile sexism is an antipathy  
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32 toward women, perceived as inferior to men, as manipulators, and as intent on gaining control over men using sexuality  
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34 as well as feminist ideology. Benevolent sexism consists of a patronizing attitude toward women, who are perceived “as  
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36 pure creatures who ought to be protected, supported, and adored and whose love is necessary to make a man complete”  
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38 (Glick and Fiske 2001b). This idealization of women takes for granted their fit with conventional gender roles (i.e.,  
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40 mother or wife), their incapacity to take high positions in society, and—as it occurs in hostile sexism—their inferiority  
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42 to men. Benevolent sexism is directed toward the women perceived as warm and incompetent (i.e., those assuming  
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44 traditional gender roles), whereas hostile sexism is directed toward the women perceived as competent and cold (i.e.,  
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46 feminists or career women) and perceived as a competitive threat by the dominant group of men (Glick and Fiske  
47  
48 2001a, 2001b).

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50 Although these two forms of sexism could seem opposed, they are complementary. Indeed, both stem from a  
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52 general sexist ideology that considers men to be naturally superior to women. Therefore, not surprisingly, hostile sexism  
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54 and benevolent sexism can coexist, generating an ambivalent sexism, a form of sexism in which positive attitudes  
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56 towards women (e.g., by their nature, they are pure and romantic) coexist with frankly negative attitudes (e.g., by their  
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58 nature, they are purely rational and efficient) toward them.  
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1 Sexist ideology is present in every culture, although its level changes across societies (Glick et al. 2000). Not  
 2 only men but also women can endorse such an ideology, culturally transmitted with the function of maintaining the  
 3 *status quo* (Glick and Fiske 1996). In light of social dominance theory (Sidanius and Pratto 1999) and of system  
 4 justification theory (Jost and Banaji 1994), hostile sexism and benevolent sexism share the purpose of maintaining a  
 5 social hierarchy in which men have more power and control than women. Consistent with this, Jost and Kay (2005)  
 6 showed that men find the division of social roles between the genders more rightful than women do. However, women  
 7 exposed to gender stereotypes presenting them as communal endorse the *status quo* as much as men do, thus colluding  
 8 with an unfair ideological system, unfavorable to women.

9 Interestingly, in all of the countries surveyed (regardless of their level of sexism), women are less resistant to  
 10 benevolent sexism than to hostile sexism (Glick et al. 2000), possibly because the former is more recognized as sexism  
 11 than the latter (Barreto and Ellemers 2005a, 2005b) and can be easily misinterpreted as protectiveness (Glick and Fiske  
 12 2001b).

### 23 **The Effects of Sexism in the Workplace Environment**

24 Sexism impacts in many social domains, ranging from justification of violence against women (Glick et al.  
 25 2002) to victim blame of the female targets of a rape (Abrams et al. 2003; Penone and Spaccatini 2019), especially if  
 26 they violate traditional gender role expectations (Viki and Abrams 2002). In the field of work psychology, there is  
 27 converging evidence that sexism is associated with negative outcomes for women (i.e., Halouani et al. 2019; Logel et al.  
 28 2009), when they apply for a position, during the job selection interview (i.e., Koch et al. 2014), and in the course of  
 29 their daily work duties (i.e., Jones et al. 2014). Interestingly, Barreto, Ellemers, Piebinga, and Moya (2010) found that  
 30 female college students who expected to cooperate with a male job partner evidencing benevolent sexism showed more  
 31 willingness to delegate the leadership of the team to their male partner, compared with women who do not expect to  
 32 collaborate with a sexist partner.

33 The evidence pertaining to the relationship between a sexist job environment and women's performance is  
 34 particularly interesting for our purpose. In a series of four vignette studies, Dardenne and colleagues (2007) found that  
 35 exposing women who were applying for a job to a message describing the company's organizational culture as  
 36 characterized by benevolent sexism or interacting with a benevolent sexist male recruiter subsequently impaired their  
 37 cognitive performance in two different problem-solving tasks, presented like the basis for hiring decisions. The same  
 38 results did not occur among participants exposed to hostile sexism or among those in the control condition exposed to a  
 39 neutral message.

40 Regarding the mechanism that produces a reduction in cognitive performance, some evidence shows that being  
 41 the target of a benevolent sexist message leads women to experience intrusive thoughts about their own supposed  
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1 incompetence. These thoughts need to be managed and suppressed, reducing the span of working memory available for  
 2 the cognitive task at hand (Dardenne et al. 2007; Dumont et al. 2010). Supporting these results, Dardenne and  
 3 colleagues (2013) found that exposure to benevolent sexism causes changes in brain activity in two regions associated  
 4 with the suppression of intrusive thoughts and with the functioning of working memory, namely, the anterior cingulate  
 5 cortex, and in the dorsolateral prefrontal cortex.  
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### 10 Overview of Our Studies

11 Our research extends the existing knowledge on the relationship between exposure to sexism and cognitive  
 12 performance due to a result found by serendipity in Study 1. Initially, we aimed to replicate in the Italian context  
 13 Dardenne and colleagues' (2007) findings and to examine the role of perceiving a sexist message as such in mediating  
 14 the effect of exposure to sexism on cognitive performance. In detail, we expected that exposure to a benevolent sexist  
 15 message (compared with a hostile sexism and a control message) would have a significant negative impact on female  
 16 participants' cognitive performance, measured via the same problem-solving test used by Dardenne and colleagues  
 17 (2007). Nevertheless, the expected relationship did not prove significant: the performances of the participants exposed  
 18 to the benevolent sexist message ( $M = 4.36$ ,  $SD = 3.85$ ), to the hostile sexist message ( $M = 4.89$ ,  $SD = 3.73$ ), and to the  
 19 neutral message ( $M = 3.78$ ,  $SD = 3.78$ ) were statistically equal,  $F(2,82) = .58$ ,  $p = .56$ . Interestingly, however, when  
 20 coding the data, we noticed a number of grammatical and orthographic errors in the open question placed immediately  
 21 after the experimental manipulation (i.e., the exposure to a benevolent vs. a hostile vs. a neutral communication), when  
 22 we asked participants to report to a close friend of theirs what had happened in the job selection interview. Intriguingly,  
 23 the number of errors seemed to be higher among the participants exposed to the sexist messages. We tested this idea  
 24 formally and found that such differences were statistically significant, with the mediation of the perception of sexism in  
 25 the simulated job selection interview. However, the measure of the mediator we were able to perform was suboptimal,  
 26 as well as the analyses we were able to perform. Moreover, results obtained by serendipity are often the outcome of  
 27 chance. Consequently, we performed Study 2 to test the validity of these results, measuring the mediator in a more  
 28 convincing way and performing more convincing analyses. The results we obtained overlapped perfectly with those  
 29 from Study 1.  
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### 31 Study 1

#### 32 Participants

33 Eighty-five Italian women ( $M_{\text{age}} = 26.99$ ,  $SD = 10.62$ ) participated voluntarily and anonymously in a paper-and-  
 34 pencil between-participants vignette experiment. The participants were recruited through a snowball sampling  
 35 procedure, starting from the members of the first author's social network. An *a priori* power analysis estimated that at  
 36 least 67 participants were required to observe a medium effect size ( $f^2 = 0.15$ ,  $\alpha = 0.05$ , and power = .80).  
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## 1 Procedure and measures

2 We adopted the experimental procedure of Dardenne et al. (2007), slightly modifying it only in one detail (see  
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4 below). Participants were asked to participate in a simulated selection interview for a job in a chemical factory currently  
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6 with only male employees and were randomly assigned to one out of three experimental conditions. When exposed to  
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8 the sexist conditions (both hostile and benevolent), participants read a brief statement reporting that the Italian  
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10 parliament had recently approved a new law on gender quotas. In the hostile sexist condition ( $n = 27$ ), participants  
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12 subsequently read, “Industry is now restricted to employ a given percentage of people of the weaker sex. I hope women  
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14 here won’t be offended, they sometimes get so easily upset! If hired, you’ll work with men only, but don’t believe what  
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16 those feminists are saying on TV, they probably exaggerate women’s situation in industry simply to get more favors!”  
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18 In contrast, after the introductory statement, participants exposed to the benevolent sexist condition ( $n = 27$ ) read the  
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20 following paragraph: “Industry is now restricted to choose women instead of men in case of equal performance. You’ll  
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22 work with men only, but don’t worry, they will cooperate and help you to get used to the job. They know that the new  
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24 employee could be a woman, and they agreed to give you time and help.” Participants in the control condition ( $n = 34$ )  
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26 just read the description of the job they would have done if hired.

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28 In contrast to Dardenne and colleagues (2007), immediately after the experimental manipulation, we measured  
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30 perceived sexism by asking our participants to write a short text summarizing to a close friend their experience during  
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32 the job selection interview. Then, in order to check the effectiveness of the manipulation, participants read a closed-  
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34 ended question to recall what the male workers had said about female colleagues in the company. Four options were  
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36 available: (a) They exaggerate their situation simply to get more favors (correct response in the hostile sexist condition);  
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38 (b) They need their male colleagues' help (correct response in the benevolent sexist condition); (c) They do not ask for  
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40 special treatment (correct response in the control condition); and (d) I do not remember. Finally, they completed the  
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42 problem-solving test previously used by Dardenne et al. (2007, Study 1). We will not report on this latter variable,  
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44 because we did not use it: Results on its relations with the other variables we have measured are available upon request  
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46 from the corresponding author. After completing a final standard sociodemographic form, the participants were fully  
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48 debriefed and thanked.

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50 We performed the manipulation check via a contingency table, crossing the experimental condition with the  
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52 answers to the question above. The manipulation was effective. Indeed, the relationship between the experimental  
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54 condition and the answers to the question on the beliefs of the people who work in the company they were applying to  
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56 was significant and very strong,  $\chi^2(6) = 93.13, p < .001, \phi = .96, p < .001$ .

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58 From the substantive point of view, we used Mplus (Muthén and Muthén 1998–2002) to test a mediation model  
59  
60 linking exposure to sexism with the total number of grammatical and orthographical errors found, via the mediation of  
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1 the perception of sexism in the job selection interview. We used three sets of variables. First, two dummy variables  
 2 expressing exposure to a hostile sexist and a benevolent sexist message. We used exposure to the neutral message as the  
 3 reference category. Second, a dummy variable expressing whether participants reported (coded as 1) vs. did not report  
 4 (coded as 0) sexism in the description of the job selection interview they wrote to their close friend whom they chose as  
 5 their correspondent. Third, a variable counting the number of grammatical and orthographic errors in the reports the  
 6 participants wrote. Two independent judges, not aware of the goals of the research, coded the responses to these open-  
 7 ended questions both for the presence of grammatical and orthographic mistakes and for the sexism described. Their  
 8 agreement rate was 89.4% and 91.9%, respectively. The inconsistencies were discussed until an agreement was reached.

## 16 9 Results

17  
 18 A path analysis model showed that exposure to both a hostile sexist message and to a benevolent sexist message  
 19 fostered the perception of sexism in the job selection interview situation. In turn, perceived sexism showed a positive  
 20 association with the number of grammatical and orthographic errors made by our participants. The indirect effect  
 21 exerted by exposure to a hostile sexist message on the dependent variable was positive and significant,  $estimate = 1.29$ ,  
 22  $SE = .60$ ,  $p = .031$ , and that exerted by exposure to a benevolent sexism message was positive and marginally  
 23 significant,  $estimate = .75$ ,  $SE = .42$ ,  $p = .075$ . The model had an excellent fit,  $CFI = 1.00$ ,  $TLI = 1.00$ ,  $RMSEA = .00$   
 24 (90% CI = .00,.21), and explained the 30% of variance of the mediator ( $R^2 = .31$ ) and the 10% of variance of the  
 25 dependent variable ( $R^2 = .10$ ). Figure 1 represents our model graphically.

## 34 18 Discussion

35  
 36 In this study, we showed that exposure to hostile and benevolent sexism hinders female participants'  
 37 performance through the mediation of the perception of sexism, even in domains not strictly connected with the areas  
 38 on which women are evaluated. If confirmed, this result would add to the literature on the relationship between sexism  
 39 and performance, in that it would show that the range of the negative effects of exposure to sexism is wider than could  
 40 be expected based on the extant literature.

41  
 42 However, Study 1 was not sufficient in itself to be sure of the robustness of this conclusion, and the reasons were  
 43 twofold. Indeed, just as all the results stemmed by serendipity, this result—even if reasonable from the theoretical point  
 44 of view—could have been obtained by chance. Moreover, we did not design this study to analyze the relations we have  
 45 reported on, so we could perform just a suboptimal convincing measure of the mediator. On the one hand, it was based  
 46 on the same textual material we used to measure the dependent variable: This lack of autonomy between the *explanans*  
 47 and the *explanandum* could be considered a violation of Von Wright's (1973) principle of genuine explanations. On the  
 48 other hand, we measured the mediator using a single item. Methodological research shows that compared with scales,  
 49 single items show a lower reliability and thus should be considered suboptimal measures (Schuman and Presser 1981).  
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Consistent with this, their reliability cannot be maximized measuring the construct as a latent variable via structural equations modeling.

To test the robustness of the results of Study 1 and to improve the measurement of the mediator and the data analyses, we conducted Study 2.

## Study 2

### Participants

One hundred and fourteen Italian women ( $M_{\text{age}} = 26.99$ ,  $SD = 10.62$ ) participated voluntarily and anonymously in an online between-participants vignette experiment. The participants were recruited using a snowball procedure, starting from the members of the first author's social network. None of them had previously participated in Study 1. An *a priori* power analysis estimated that at least 67 participants were required to observe a medium effect size ( $f^2 = 0.15$ ,  $\alpha = 0.05$ , and power = .80).

### Procedure and measures

We used the same procedure we used in Study 1, with two differences. First, before the open question asking for a description of the job selection interview, we measured directly the perception of sexism in the situation experienced, using three items (see below). Second, we did not ask participants to complete the problem-solving test of Dardenne et al., because it would not have been relevant for our purposes. We exposed 42 participants to a hostile sexism condition, 36 to a benevolent sexism condition, and 36 to the neutral, control condition.

We measured perceived sexism via the following three items: (a) "In the industry we have just described, do you believe there is a prejudice against women?"; (b) "In the industry we have just described, do you believe men, and women receive the same treatment?"; and (c) "In the industry we have just described, do you believe men are considered more positively than women?". A pretest performed with 85 undergraduate women from the University of Torino ( $M_{\text{age}} = 20.00$ ,  $SD = 1.26$ ) showed that these items are a valid measure of perceived sexism. Indeed, the groups exposed to the hostile sexism ( $M = 3.78$ ,  $SD = .42$ ), the benevolent sexism ( $M = 2.33$ ,  $SD = 1.10$ ), and the neutral condition ( $M = .87$ ,  $SD = 1.11$ ) showed different levels of perceived sexism,  $F(2, 82) = 64.81$ ,  $p < .001$ . Post-hoc tests (Bonferroni) showed that each mean was statistically different from the others, all  $ps < .001$ .

We measured the dependent variable as in Study 1, i.e., counting the number of grammatical and orthographic errors in the reports the participants wrote. Two independent judges, unaware of the goals of the research, performed this calculation. Their agreement rate was 94.2%. The inconsistencies were discussed until an agreement was reached. After the standard sociodemographic form, the participants were fully debriefed and thanked.

A manipulation check showed that our experimental manipulation was effective. A contingency table showed that the relation between the experimental condition and the answers to the question on the beliefs of the people who

work in the company our participants were applying to was significant and very strong,  $\chi^2(6) = 106.77, p < .001, \phi = .97, p < .001$ .

From the substantive point of view, we tested a mediation model analogous to the one tested in Study 1.

However, this time we modeled perceived sexism as a latent variable, measured by the three manifest items above.

## Results

A structural equations model showed that exposure to both a hostile sexist message and to a benevolent sexist message increased the perception of sexism in the job selection interview situation, measured as a latent variable. In its turn, perceived sexism showed a positive association with the number of grammatical and orthographic errors made by our participants. Both the indirect effect exerted on the dependent variable by exposure to a hostile sexist message,  $estimate = 88, SE = .39, p = .023$ , and by exposure to a benevolent sexist message,  $estimate = 63, SE = .28, p = .023$ , were positive and significant. The model had an excellent fit,  $CFI = 98, TLI = 97, RMSEA = .00$  (90% CI = .00, .14), and explained more than two thirds of the variance of the mediator ( $R^2 = .69$ ) and about 30% of the variance of the dependent variable ( $R^2 = .31$ ). Figure 2 represents our model graphically.

## Discussion

In this study, we confirmed the results gained by serendipity in Study 1 with a more convincing measurement of the mediator and of the model we tested. Exposure to a sexist message, either hostile, or benevolent, fostered the number of grammatical and orthographic errors in a written report, via the mediation of the perception of sexism in the situation the participants experienced. The convergence of the results of the two studies and the superior methodological quality of Study 2 bear witness to the validity of our findings.

## General Discussion

Despite a relative improvement in women's situation, sexism is still an issue in Western countries (Glick and Fiske 2001a; Spaccatini et al. 2019). Experimental research has shown consistently that exposure to sexism assumes a crucial role in perpetuating gender inequality, impairing women's cognitive performance and consequently making women *appear* less apt than men in the workplace environment. In the Italian context, previous research has shown that exposure to a sexist (either hostile or benevolent) environment increases perceived anxiety in female participants (Pacilli et al. 2018). Nevertheless, until now, no study has examined the effects of a sexist environment on cognitive performance of female Italian workers. In two experimental vignette studies aimed to examine these effects, we found that exposing women to a sexist message, either hostile, or benevolent, impairs their writing skills, via the mediation of perceived sexism. In Study 1, we found this effect by serendipity, using—as often happens in these cases—partially suboptimal measures and data analyses. In Study 2, we replicated the results of Study 1, using more solid and convincing variables and data analyses.

1 At present, a considerable number of studies show that exposure to sexism impairs women's performance in  
2 domains stereotypically considered as "male" (e.g., see Allen and Gervais 2017; Gervais and Vescio 2012; Vescio et al.  
3 2005), in domains in which women are negatively stereotyped (e.g., see Logel et al. 2009; Ortner and Sieverding,  
4 2008), and in evaluation situations, in which researchers present a test overtly to women (e.g., in simulated job selection  
5 interviews, see Dardenne et al. 2007; Dumont et al. 2010; Koch et al. 2014). The literature on stereotype threat (Cadinu  
6 et al. 2005; Osborne 2001; Spencer et al. 1999; Quinn 1999) shows that this happens even without direct exposure to  
7 sexist messages. On the contrary, it shows that it is sufficient to activate salient culturally developed sexist beliefs, such  
8 as asking the question on participants' gender immediately before the dependent variable, to impair women's  
9 performance in such domains (e.g., Gerstenberg et al. 2012). These results are disturbing, because they show that, when  
10 competing for limited resources (e.g., a work position and a limited-enrollment degree course), men, and women do not  
11 play in a fair competition, especially if the competition is embedded in a patriarchal cultural system. In light of this, the  
12 recurring results showing the pervasive spread of the *meritocracy myth* (Jost and Hunyady 2005) in Western countries  
13 and those showing that every country surveyed is characterized by a gender gap favoring men over women (World  
14 Economic Forum 2018) are far from reassuring.

15 Our results are even more disturbing than those from the extant literature. The task in which we showed the  
16 effect we have detected was very easy (the participants described a job selection interview to a close friend), was a  
17 common situation in men's and women's daily lives, did not belong to a domain in which women are negatively  
18 stereotyped, and was not linked to the test situation. In this way, we have shown that the anti-female bias highlighted in  
19 the extant literature exerts its effects in a much subtler and more pervasive way than it is known at present. Consistent  
20 with a growing body of research (e.g., Son Hing et al. 2002; McCoy and Major 2007), our results have unveiled a  
21 supplementary dramatic danger of the present meritocratic systems, in showing that, when exposed to sexist  
22 environments and messages, women risk performing worse than men even in everyday domains in which they are not  
23 negatively stereotyped and are not under a direct evaluation, thus contributing to legitimizing their social inferiority.

24 We have built our research on Dardenne et al. (2007). At first, some of our results seem to contradict their  
25 results. Indeed, these authors found that exposure to benevolent but not hostile sexism impaired women's cognitive  
26 performance, whereas in our research, both kinds of sexism exerted negative effects on the dependent variable.  
27 However, two main differences between the study of Dardenne et al. (2007) and our research could explain this  
28 inconsistency. On the one hand, consistent with what stemmed from a previous Italian study (Pacilli et al. 2018), in our  
29 studies, both the hostile and benevolent sexist messages were recognized as expressions of sexism. On the other hand,  
30 in Dardenne and colleagues (2007), the dependent variable measured performance in a test situation, i.e., in a task in  
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1 which the participants were well aware of being evaluated, whereas in our research, the dependent variable measured  
 2 performance not linked to a test situation.

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 4 It is plausible that in an evaluative situation, due to the high level of attention required to complete the crucial  
 5 task, participants could counterbalance the negative effect of a sexist message they recognize as sexist, protecting the  
 6 quality of their performance via the facilitation of external attributions of the potential failure. This opportunity,  
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 8 reducing the disturbing impact of the activation of the cognitive dimension of anxiety (Cadinu et al. 2005), could leave  
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 10 substantially unchanged the degree of cognitive resources used in the evaluative task. On the contrary, non-evaluative  
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 12 situations—such as those we have analyzed in our research—are plausibly more subjected to a generalization of  
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 14 sexism's detrimental effects in both its forms, because they do not push participants to dedicate high levels of attention  
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 16 to the task, and thus act to counterbalance the negative effects of recognized sexism. A formal test of this interpretation  
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 18 could be interesting.

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 20 Other developments of this research could be interesting. Our results can be interpreted in light of social  
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 22 dominance theory (Sidanius and Pratto 1999) and of system justification theory (Jost and Banaji 1994). If experiencing  
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 24 situations in which sexism is salient hampers women's performances even in non-evaluative conditions, living in a  
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 26 sexist environment should lead women to legitimize and even promote systematically their own discrimination, helping  
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 28 them convince themselves that their usual standards are less satisfactory than those of men and thus that the unequal  
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 30 distribution of resources between the two sexes is fair and justified. This “essentialization” (Rothbart and Taylor 1992)  
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 32 process could be tested fruitfully both by analyzing the moderating role of social dominance orientation and system  
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 34 justification in our model and via a multinational, multilevel study using the level of sexism of the nations as cross-level  
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 36 moderator of the relations we have detected.

37  
 38 As often happens, our research had some limitations. First, the results of Study 1 happened through serendipity  
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 40 from a study performed with other goals; thus, the measures we used were partly suboptimal, as were the subsequent  
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 42 analyses we performed. However, the results of Study 2 results strongly confirmed them in an *ad hoc* designed study.  
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 44 Second, we resorted to two vignette studies, with a sample of women who were not *actually* applying for a job. Thus,  
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 46 the situation they experienced was artificial, and no relevant stake was at play. This is a typical critical feature of  
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 48 vignette studies (Roccatò and Russo 2017). However, methodological research shows that vignette studies maximize  
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 50 the internal and external validity of both experimental and quasi-experimental research (Aguinis and Bradley 2014).  
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 52 Moreover, from the study of Dardenne et al. (2007) and beyond, the scenarios we have used are well established in this  
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 54 field of research and proved efficient and effective in determining the expected effects. Still, a real-world replication of  
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 56 this research could be interesting.





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Fig 1. Study 1. Association between exposure to sexist messages and number of grammatical and orthographic errors, with the mediation of perceived sexism. Betas and standard errors are reported

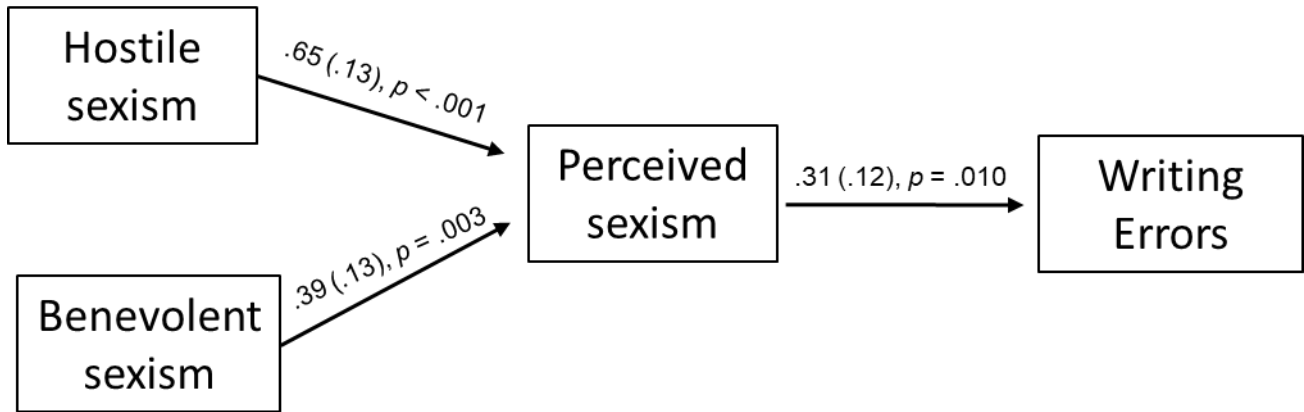


Fig 2. Study 2. Association between exposure to sexist messages and number of grammatical and ortographic errors, with the mediation of perceived sexism. Betas and standard errors are reported

