BRIEF REPORT

The Dark Side of Gendered Language: The Masculine-Generic Form as a Cause for Self-Report Bias

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Language reflects sociocultural structures, such as gender, and affects individuals' perceptions and cognitions. In gendered languages, male-inflected parts of speech are generally used for both sexes (i.e., masculine generics), thus proliferating stereotypes, inequality, and misattributions. We hypothesized that masculine-generic inflection in a questionnaire would bias women's reports compared with a gender-neutral inflection (e.g., "he or she"). We tested our prediction using an academic motivation questionnaire. We found that women reported lower task value and intrinsic goal orientation in the masculine-generic form compared with the gender-neutral form, and lower self-efficacy than men in the masculine-generic form. These findings suggest that questionnaires and surveys written in gendered languages or translated into them may contain construct-irrelevant variance that may undermine the validity of their scores' interpretations, thus risking the possibility of false conclusions.

Keywords: self-report bias, validity, gendered language, masculine generics, gender differences

Questionnaires and surveys are basic tools in psychological science. Researchers are continuously engaged in developing "gold standard" tools with exceptional psychometric properties. Research in the field of cognitive aspects of survey methodology has unraveled sources of possible measurement biases derived from task characteristics (Schwarz, 2007), among which are framing of questions (e.g., Galesic & Tourangeau, 2007; Presser, Blair, & Triplett, 1992) and contextual influences ("response effects"; Schwarz, 2007). The process of developing valid measurement tools entails even more challenges when validated across cultures and languages (Behling & Law, 2000; Van de Vijver & Hambleton, 1996). Notably, unexpected biases may emerge driven by grammatical gender structures, which may have important ramifications on data interpretation. The principle of linguistic relativity defines the powerful influence of language on perception and cognition (Wolff & Holmes, 2011). According to this principle, language reflects sociocultural structures and perpetuates them. Gender is such a structure, and hence many languages differentiate between the genders (Ibrahim, 1973; Stahlberg, Braun, Irmen, & Sczesny, 2007). Moreover, language takes part in constructing and maintaining gender stereotypes and shapes power relations between women and men (Parks & Roberton, 1998; Stahlberg et al., 2007; Wasserman & Weseley, 2009).

Two core distinctions are made regarding gendering of language: One is between languages and the other is within each language. The first distinction is the classification of languages by the amount of gender-inflected parts of speech: pronouns, nouns, adjectives, verbs, and so on (Ibrahim, 1973). Gendered languages—such as Spanish, German, Hindi, and Hebrew—inflect parts of speech according to grammatical gender (e.g., in Hebrew, "Metapel" means a male therapist, whereas "Metapel*et*" means a female therapist). Contrarily, in natural gender languages, like English and Swedish, pronouns and some nouns are gender-inflected (Stahlberg et al., 2007). Importantly, the extent of gendering in language was found to be positively correlated with sexism and women's lower status (Prewitt-Freilino, Caswell, & Laakso, 2012; Wasserman & Weseley, 2009).[1] The second distinction regarding gendering of language is within each language, between the usage of a gender-neutral form and the usage of a gendered form (Stahlberg et al., 2007). Whereas a gender-neutral form does not differentiate between women and men, a gendered

[1] Classification between languages includes a third category—genderless languages, which do not differentiate between genders at all and are less relevant to this study (Stahlberg et al., 2007).

form refers to one gender only (e.g., steward and stewardess). The term *masculine generics* refers to the common usage of the masculine form as generic for both women and man (e.g., "All men are created equal"). Numerous studies have shown that such masculine generics are only ostensibly representative of both sexes, and can in fact deepen gender inequality by promoting sexist attitudes and female misrepresentation (e.g., Braun, Sczesny, & Stahlberg, 2005; Gastil, 1990; Hamilton, 1988; Khosroshahi, 1989; Todd-Mancillas, 1981). In one surprising example, participants who read the "Ethical Standards of Psychologists," written using masculine generics, perceived psychology as a profession to be less suitable for women compared with participants who read a gender-neutral version (Briere & Lanktree, 1983).

Gendered language and masculine generics are closely related (Prewitt-Ferilino et al., 2012; Stahlberg et al., 2007). Although existent in natural gender languages, it is quite easy to abstain from using gendered forms and to refer equally to both genders. However, in gendered languages, such as Hebrew, it is difficult to avoid the gendered form pitfall because every adjective, noun, and verb is inflicted in respect to gender. Consequently, in gendered languages, masculine generics are more prominent than in natural gender languages.

In some countries, the feminist critique on the widespread usage of masculine generics has caused a struggle for equal representation in language (i.e., gender-fair language), resulting in actual lingual reforms (Gabriel & Gaygax, 2008; Mucchi-Faina, 2005; Pauwels, 2003). For example, in 2014, Sweden has added gender-neutral plural pronouns (Braw, 2014). A gender-neutral form that refers to both sexes by terms such as "he or she" has been suggested as a solution for the effects of the masculine generics in both natural gender and gendered languages, and was indeed perceived as more egalitarian (Madson & Hessling, 1999).

Despite some improvements in gender-fair language, most gendered languages have yet to change their ways (Pauwels, 2003). Regarding Hebrew, the official policy is that all documents and forms should be written in a masculine-generic form, in order to simplify the usage of the Hebrew language (The Academy of the Hebrew Language, 2010). Although (failed) attempts have been made to change this policy using legislation, masculine generics are recognized as formal, and gender-fair terms (e.g., referring to each person according to their gender, or using neutral gender terms) are only rarely used. Furthermore, the prevalence of masculine generics in gendered languages (Mucchi-Faina, 2005; Sarrasin, Gabriel, & Gygax, 2012) may imply that these kinds of forms are also common in studies, questionnaires, and measurements written in such languages. Nevertheless, there is little inquiry on the influence of lingual forms in psychological assessments, especially in non-English gendered languages. In fact, information about the usage of masculine generics in studies is usually left unmentioned, seemingly perceived natural and unimportant.

It seems that masculine generics are both a result of gender inequality and one of many causes for it. Masculine generics are incompatible and excluding for women, and thus might influence them negatively. This exclusion is enhanced when masculine generics are used in gendered languages, in which many parts of speech are inflected according to gender. We therefore suggest that the usage of masculine generics may be important for psycholog-

ical assessments, because it might influence self-report in questionnaires, and thus alter survey results.

We hypothesized that statements written in an incompatible gendered form would bias the other gender's reports. Hence, women would provide different self-reports when completing a questionnaire written in the masculine-generic form (gender incompatible) compared with a gender-neutral form (gender compatible). To test this hypothesis, we chose the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, Smith, Garcia, & McKeachie, 1991), a common measurement for academic motivation, as a case study. Two Hebrew versions of the exact same questionnaire were used—a masculine-generic version and a gender-neutral version. Because masculine generics have been shown to be exclusive toward women, whereas gender-neutral forms include both genders, we predicted that women would report lower motivation in the masculine-generic compared with the gender-neutral form of the questionnaire. Because both forms refer equally to men, we did not expect men to be affected by this manipulation. Yet, we included gender as a factor in the study in order to compare women's results in both conditions with those of men as a control group, and in order to confirm that differences between the forms do not derive from difference in reading difficulty or familiarity of one of the forms.

Method

Participants

Ninety participants took part in the experiment (43 women and 47 men; mean age = 25.39 years). All participants were students who participated voluntarily. Study major was found in previous research to be highly correlated with students' motivation (for a review, see Meece, Glienke, & Burg, 2006). Because gender-stereotyped classes, such as mathematics, are related to lower motivation among women (e.g., Anderman & Young, 1994; Skaalvik & Skaalvik, 2004; Wolters & Pintrich, 1998), and because we expected our manipulation to have an effect only when a priori gender biases do not apply, we avoided approaching students that had a gender-stereotyped major (meaning computer science, mathematics, physics, and engineering students). Because the university in which the experiment was conducted has different libraries for different faculties, this was easily done by approaching students only in relevant libraries. In addition, because our experiment examined a subtle lingual effect, we aimed to sample only native Hebrew speakers. Information regarding the participants' mother tongue and study major were collected, and four participants were excluded based on having different mother tongue than Hebrew. All participants gave their verbal informed consent to participate.

Procedure

One by one, participants were approached in various libraries (Social Science, Management, Education, Humanities, and Arts) and were asked to fill out a questionnaire for a psychology experiment. Participants were told it measured motivation and attitudes regarding courses they were taking in their current semester. The two forms of the questionnaire were randomly distributed among participants; half received the questionnaire formulated in the masculine-generic form (22 women, 23 men) and the other half

received the questionnaire formulated in the gender-neutral form (21 women, 24 men). Gender and age were collected at the end of the questionnaire. A manipulation-check question was added to verify that participants were unaware of the experiment's goals. Indeed, no participant reported such suspicions. Upon completion, participants were debriefed on the nature and goal of the experiment.

Measures

We used the MSLQ (Pintrich et al., 1991), developed to measure learning strategies and motivation within higher education students in regard to the current semester. The MSLQ consists of 81 arguments, rated with a Likert scale that ranged from 1 (*not at all true of me*) to 7 (*very true of me*). The questionnaire is divided into two parts: learning strategies and motivation. In this experiment, we used only the motivation part, as is common in studies using the MSLQ (Duncan & McKeachie, 2005). This part consists of six constructs (31 items): Intrinsic Goal Orientation, Task Value, Control of Learning Beliefs, Self-Efficacy for Learning & Performance, Test Anxiety, and Extrinsic Goal Orientation. The Extrinsic Goal Orientation construct was not included in our version of the questionnaire because half of its statements were phrased without a pronoun, thus they would be already gender-neutral formed in Hebrew as well, and because it was found to have very low predictive validity and relatively low reliability (Pintrich et al., 1991; Taylor, 2012). All the constructs used in the study were previously found to be reliable and predictive of academic success (Credé & Phillips, 2011; Pintrich et al., 1991; Taylor, 2012), and convergent evidence was found for construct validity (Cook, Thompson, & Thomas, 2011).

Intrinsic Goal Orientation.   This construct comprises four items (e.g., "When I have the opportunity in class, I choose course assignments that I can learn from, even if they don't guarantee a good grade"). Cronbach's alpha reliability was $\alpha = .74$ for the English version (Artino, 2005), $\alpha = .77$ for the gender-neutral translated Hebrew version, and $\alpha = .86$ for the masculine-generic translated Hebrew version.

Task value.   This construct comprises six items (e.g., "It is important for me to learn the course material in my classes this semester"). Cronbach's alpha reliability was $\alpha = .90$ for the English version (Artino, 2005), $\alpha = .88$ for the gender-neutral translated Hebrew version, and $\alpha = .91$ for the masculine-generic translated Hebrew version.

Self-Efficacy for Learning & Performance.   This construct comprises eight items (e.g., "I believe I will receive an excellent grade in courses this semester"; "I'm confident I can learn the basic concepts taught in courses this semester"). Cronbach's alpha reliability was $\alpha = .93$ for the English version (Artino, 2005), $\alpha = .83$ for the gender-neutral translated Hebrew version, and $\alpha = .87$ for the masculine-generic translated Hebrew version.

Test Anxiety.   This construct comprises of five items (e.g., "When I take a test I think about how poorly I am doing compared with other students"). Cronbach's alpha reliability was $\alpha = .80$ for the English version (Artino, 2005), $\alpha = .78$ for the gender-neutral translated Hebrew version, and $\alpha = .71$ for the masculine-generic translated Hebrew version.

Control of learning beliefs.   This construct comprises four items (e.g., "If I study in appropriate ways, than I will be able to learn the material in my courses this semester"). Cronbach's alpha reliability was $\alpha = .68$ for the English version (Artino, 2005), $\alpha = .79$ for the gender-neutral translated Hebrew version, and $\alpha = .78$ for the masculine-generic translated Hebrew version.

Translation Into Two Forms

For the current study, the questionnaire was translated from English to Hebrew by three of the authors separately, and upon discrepancy between translations, the fourth author determined the best option. In order to verify the original content was preserved, the integrated version was translated back into English by a bilingual doctoral-level student who was blind to the experimental manipulation and was unfamiliar with the MSLQ.

Because of the structure of the Hebrew language, nouns, pronouns, and verbs that are gender neutral in English must be assigned to a specific gender in Hebrew (e.g., the verb "love" has to be translated into a masculine version, "ohev," or to a feminine one, "ohev*et*"). The items in the questionnaire are written in the first person, the subject "I," which is gender neutral in the original English version. Translating this into a gendered language such as Hebrew would have to include assigning a gender to verbs and adjectives following the subject "I." Thus, two possible versions would be usually available in Hebrew: one in the masculine form and one in the feminine form. Nevertheless, as we mentioned earlier, a third version can be suggested as a gender-neutral form— both the inflections be used, with a "slash" sign separating between them (e.g., the word "love" can be translated into "ohev/et," indicating both the masculine form "ohev" and the feminine form "ohevet"; for a more comprehensive explanation about grammatical gender in gendered languages; see Ibrahim, 1973).

The questionnaire was translated in two versions—a gender-neutral form (male/female) and a masculine-generic form—using adequate inflection. For example, the sentence "I like the subject matter of my classes in the current semester" was translated into "Ani *ohev* et nosei halimud bekursim besemester ze" in the masculine-generic form, and to "Ani *ohev/et* et nosei halimud bekursim besemester ze" in the gender-neutral form. The instructions for the study were written in the same gender form as the questionnaire version. The gender formation was the only difference between the two versions of the questionnaire. For every argument, these differences between the forms varied from two characters to six at the most (including the "/" character).

Results

Intrinsic goal orientation, task value, control of learning beliefs, self-efficacy, and test anxiety scores were calculated as the mean of participants' answers for each constructs' items from the MSLQ (Pintrich et al., 1991). Moderate correlations were found between the MSLQ subscales of self-efficacy, task value, and goal orientation (intrinsic goal orientation and task value, $r = .60$, $p < .01$; intrinsic goal orientation and self-efficacy, $r = .25$, $p < .05$; task value and self-efficacy, $r = .36$, $p < .01$). Therefore, we analyzed the scores of these three subscales by multivariate analysis of variance (MANOVA), whereas test anxiety and control of learning beliefs were analyzed separately by analysis of variance (ANOVA). The independent variables were the type of form (gender-neutral/masculine-generic) and participants' gender (fe-

male/male). ANOVA is commonly used to analyze MSLQ and other motivation scales in a variety of languages (e.g., Bembenutty, 2007; Eshel & Kohavi, 2003; Rao, Moely, & Sachs, 2000). To confirm that the distribution of each score was normally distributed for both form types, we conducted a one sample Kolmogorov-Smirnov test. Levene's test of equality of error variances was used to confirm the assumption of homogeneity of variance.

As predicted, a significant interaction was found between participants' gender and type of form in intrinsic goal orientation, $F(1, 86) = 4.33$, $p < .05$, $\eta_p^2 = .05$, task value, $F(1, 86) = 4.2$, $p < .05$, $\eta_p^2 = .05$, and self-efficacy, $F(1, 86) = 7.76$, $p < .01$, $\eta_p^2 = .08$, showing that the type of form had different effects on women's and men's motivation. In line with our expectations, the interaction shows that women reported higher intrinsic goal orientation and higher task value when answering the same questionnaire written in gender-neutral form compared with masculine-generic form (as can be seen in Table 1). In addition, men reported higher self-efficacy than women in the masculine-generic form, whereas in the gender-neutral form, both genders reported similar self-efficacy. Moreover, a significant effect was found for type of form in intrinsic goal orientation subscale, $F(1, 86) = 4.17$, $p < .05$, $\eta_p^2 = .05$, and a marginal significant effect in task value subscale, $F(1, 86) = 3.93$, $p = .05$, $\eta_p^2 = .04$, both showing that participants reported higher motivation in the gender-neutral form than in the masculine-generic form. In the test anxiety and control of learning beliefs subscales, only a main effect for gender was found (test anxiety, $F[1, 86] = 4.12$, $p < .05$, $\eta_p^2 = .05$; control of learning beliefs, $F[1, 85] = 3.35$, $p = .07$, $\eta_p^2 = .04$), both showing that women have lower motivation than men in these subscales. Descriptive statistics and full analysis can be found in Tables 1 and 2.

Discussion

In accordance with our hypothesis, we found that the lingual form of a questionnaire affects men's and women's scores differently in the intrinsic goal orientation and task value subscales. Thus, women reported lower scores when filling out the masculine-generic form than they did when filling out the gender-neutral form. Meanwhile, men reported the same score in both types of questionnaire. Interestingly, in self-efficacy, a difference in scores between women and men was observed in the masculine-generic form, but the difference was reduced significantly in the gender-neutral form. Congruently, in the MSLQ English version (in gender-neutral form), no gender differences were found in self-efficacy when used in non-gender-stereotyped domains (Bembenutty, 2007; Wolters & Pintrich, 1998). Our results suggest that questionnaires referring to one gender only create biases in self-reports, derived from construct-irrelevant variance, which are not present when referring to both genders. Such biases emerge simply by altering the gender-linguistic form of psychological questionnaires. Gender forms are irrelevant factors to the psychological constructs measured that may distort the meaning of test scores from the proposed interpretation. Because masculine generics are

Table 1

Descriptive Statistics of MSLQ Scales by Gender and Lingual Form

Gender				Neutral						Generic						Total		
	n	M	SD	95% CI	Skewness	Kurtosis	n	M	SD	95% CI	Skewness	Kurtosis	n	M	SD	95% CI		
							Intrinsic Goal Orientation												
Female	21	4.81	1.12	[4.25, 5.36]	−0.75 (.50)	1.55 (.97)	22	3.69	1.41	[3.15, 4.24]	−0.03 (.49)	−0.46 (.95)	43	4.24	1.38	[3.86, 4.64]		
Male	24	4.23	1.2	[3.71, 4.75]	−0.43 (.47)	−0.23 (.92)	23	4.24	1.37	[3.71, 4.77]	−0.22 (.48)	−0.16 (.94)	47	4.23	1.27	[3.86, 4.61]		
Total	45	4.5	1.19	[4.14, 4.9]			45	3.97	1.4	[3.59, 4.35]			90	4.24	1.32	[3.96, 4.51]		
							Task Value												
Female	21	5.16	1.2	[4.64, 5.68]	−0.98 (.50)	0.34 (.97)	22	4.14	1.35	[3.63, 4.65]	0.22 (.49)	−1.09 (.95)	43	4.64	1.37	[4.28, 5.01]		
Male	24	4.55	0.96	[4.06, 5.04]	−0.42 (.47)	0.13 (.92)	23	4.57	1.27	[4.07, 5.06]	−0.42 (.48)	−0.26 (.94)	47	5.56	1.11	[4.21, 4.91]		
Total	45	4.83	1.11	[4.5, 5.21]			45	4.36	1.31	[4, 4.71]			90	4.59	1.23	[4.34, 4.85]		
							Self–Efficacy												
Female	21	5.09	1.1	[4.68, 5.5]	−0.18 (.50)	−0.57 (.97)	22	4.6	1.09	[4.21, 5]	−0.90 (.49)	0.94 (.95)	43	4.84	1.11	[4.56, 5.13]		
Male	24	4.8	0.82	[4.42, 5.18]	0.45 (.47)	0.05 (.92)	23	5.41	0.7	[5.02, 5.8]	0.48 (.48)	−0.26 (.94)	47	5.1	0.82	[4.83, 5.37]		
Total	45	4.93	0.96	[4.66, 5.22]			45	5.02	0.99	[4.73, 5.29]			90	4.98	0.97	[4.77, 5.18]		
							Test Anxiety												
Female	21	3.9	1.59	[3.36, 4.44]	−0.18 (.50)	−0.98 (.97)	22	3.98	1.29	[3.46, 4.51]	0.10 (.49)	−1.10 (.95)	43	3.94	1.43	[3.56, 4.32]		
Male	24	3.5	0.91	[3, 4]	0.07 (.47)	−0.88 (.92)	23	3.31	1.13	[2.8, 3.83]	0.72 (.48)	−0.20 (.94)	47	3.41	1.01	[3.05, 3.77]		
Total	45	3.68	1.27	[3.33, 4.07]			45	3.64	1.24	[3.38, 4.02]			90	3.66	1.25	[3.4, 3.92]		
							Control of Learning Beliefs												
Female	21	5.05	1.39	[4.58, 5.52]	−1.17 (.50)	1.46 (.97)	22	5.01	0.95	[4.55, 5.47]	0.17 (.49)	0.23 (.95)	43	5.03	1.17	[4.7, 5.36]		
Male	23	5.25	0.93	[4.8, 5.7]	−0.25 (.47)	–042 (.94)	23	5.65	1.03	[5.2, 6.1]	−0.45 (.48)	−0.77 (.94)	46	5.45	0.99	[5.13, 5.77]		
Total	44	5.15	1.16	[4.82, 5.48]			45	5.34	1.04	[5.01, 5.65]			89	5.25	1.1	[5.02, 5.48]		

Note. Data collected and analyzed from self-reports in the Motivated Strategies for Learning Questionnaire motivation section, as a function of type of form (gender-neutral/masculine-generic) and gender (female/male). Constructs were rated on a scale from 1, meaning *very low*, to 7, meaning *very high*. One participant failed to supply an answer for one item in the Control of Learning Beliefs subscale. Standard error for skewness and kurtosis are indicated in parenthesis. CI = confidence interval.

Table 2

Effect of Gender and Lingual Form on MSLQ Subscales

Variable	F	MSE	p	η_p^2
Intrinsic Goal Orientation		1.66		
Gender	<1		ns	—
Form	4.17		<.05	.05
Gender × Form	4.33		<.05	.05
Task Value		1.46		—
Gender	0.13		ns	
Form	3.93		.5	.04
Gender × Form	4.20		<.05	.05
Self-Efficacy		0.84		
Gender	1.71		ns	—
Form	0.11		ns	—
Gender × Form	7.76		<.01	.08
Test Anxiety		1.54		
Gender	4.12		<.05	.05
Form	0.04		ns	—
Gender × Form	0.27		ns	—
Control of Learning Beliefs		1.18		
Gender	3.35		.07	.04
Form	0.63		ns	—
Gender × Form	0.90		ns	—

Note. Self-efficacy, task value, and intrinsic goal orientation were inter-correlated significantly, and thus were analyzed using MANOVA. Control for learning beliefs and test anxiety were analyzed using separate ANOVAs. Degrees of freedom for the dependent variables were (1, 86), except control for learning beliefs (1, 85) because one participant failed to supply data on one item in this scale. Levene's tests for all dependent variables, except Test Anxiety, were insignificant and confirmed the assumption of homogeneity of variance. The Kolmogorov-Smirnov test confirmed the normality of distribution for all dependent variables in both conditions. Ns = non significant result, $p \geq .1$.

inherent in gendered languages, this may have important ramifications for studies conducted in gendered languages.

Hitherto, studies have generally shown that masculine generics can influence gender perceptions, cognitions, and memory (e.g., Crawford & English, 1984; Gastil, 1990; Hamilton, 1988). The present study extended these effects to include self-report in questionnaires, one of the most basic measurement tools in social sciences. Our results show that the masculine-generic form may bias women's self-reports, and thus distort evaluations and study results. For example, when the gender distribution is not equivalent between conditions in an experiment, artifactual effects may be observed. Furthermore, the masculine-generic form may portray unreal differences between women and men, which would not appear in the gender-neutral form or in natural gender language versions of the same questionnaire.

One possible explanation for our results is that women may better identify with statements referring to both genders than with statements referring exclusively to men, and thus report more accurately about themselves. In contrast, men are not affected by the form of the statements, presumably because they identify themselves equally in both forms. Alternatively, the masculine-generic form might have influenced the situational traits that were measured, hence decreasing motivation among women. This interpretation corresponds with studies showing that differentiated attitudes toward the genders can influence motivation and achievement in school (Meece et al., 2006; Picho & Stephens, 2012). Further research is needed to clarify the underlying process that

causes the effects observed here. In addition, further research should examine the influence of the feminine form on both genders responses in questionnaires in comparison with the other forms.

Because biased language and usage of masculine generics in published psychological articles have been reduced in the past years (Hegarty & Buechel, 2006), it might seem that the subject of masculine generics in psychology has lost its importance (Eagly & Riger, 2014). However, the decrease in the use of masculine generics has only been shown in articles, and not in surveys and other measures. In addition, these articles were written in English, a natural gender language, which is easier to adapt into a gender-neutral form (Mucchi-Faina, 2005; Sarrasin et al., 2012; Stahlberg et al., 2007). For example, gender biases in natural gender languages can be avoided using plural nouns or pronouns (American Psychological Association, 2010, p. 74), but this is not the case for gendered languages. Thus, although there is no known research on the usage of masculine generics in surveys and questionnaires, it may be assumed that it is just as common as the usage in gendered languages in general (Mucchi-Faina, 2005; Sarrasin et al., 2012). Yet, gendered languages differ by many nuances, and thus further research should be conducted in order to explore other languages' effects on measurement biases.

Lingual form did not affect self-reports in test anxiety and control of learning beliefs. However, these are the only constructs that yielded overall gender differences, that is, women being higher in test anxiety and lower in control of learning beliefs than men. A possible explanation is that gender already played a role within these traits, which overshadowed the subtle manipulation of lingual gender forms. In accordance, women were found to have higher test anxiety in past literature using various scales (Chapell et al., 2005; Hembree, 1988; Sowa & LaFleur, 1986). However, the assumption for homogeneity of variances has not been confirmed for the test anxiety construct, and thus caution must be exercised in the interpretation of this result. Further research is needed to establish the roots of the disparity between the subscales.

The present study demonstrated the effect of subtle lingual nuances on self-reports. The results add to previous findings showing that language is not only a tool of communication, but a social structure, influencing power relations between the genders. Because masculine-generic forms are still prominent in many languages (Mucchi-Faina, 2005; Pauwels, 2003; Sarrasin et al., 2012), women are not equally represented in languages, and this lingual exclusion can negatively influence them. Masculine generics are not a necessity, and they can, and should, be avoided.

An important contribution of the current findings is to literature of cognitive aspects of survey methodology. Research in this field has been focusing on the understanding of questions, response alternatives, scale types, order of choices, contextual influences, framing effects, and so on (Schwarz, 1999, 2007). Notwithstanding the great interest in measurement bias, to the best of our knowledge, no research has beforehand explored the consequences of using the masculine-generic form on response bias. The current findings indicate that to avoid self-report inaccuracies in gendered languages, the gender-neutral form is preferable over the masculine-generic form. It is therefore imperative that researchers constructing, implementing, and translating questionnaires, tests, and evaluations will enforce the gender-neutral form and avoid using masculine generics. Most importantly, researchers should use caution about findings and conclusions of studies made using

questionnaires written in the masculine-generic form. For that purpose, journals, editors, and authors should engage in increasing the transparency of the measures used in published studies and ensure that gender-fair language is implemented.

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