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## **Stereotype endorsement and perceived ability as mediators of the girls' gender orientation-soccer performance relationship**

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1 Running head: STEREOTYPE ENDORSEMENT AND GIRLS' SOCCER PERFORMANCE

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3 Stereotype endorsement and perceived ability as mediators of the girls' gender

4 orientation-soccer performance relationship.

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## 1 Abstract

2 Objective: This study investigated girls' endorsement of the stereotype that girls are not good  
3 soccer performers through three questions: (1) Did stereotype endorsement predict soccer  
4 performance? (2) Was this relationship mediated by perceived ability? and (3) Was  
5 stereotype endorsement related to gender role orientation?

6 Method: One-hundred-and-two junior high school girls from the 6th to the 9th grade ( $M_{age} =$   
7 13.5 years,  $SD = 1.23$ ) reported their beliefs about girls' and boys' performance in soccer,  
8 perceived ability and gender role orientation. Next, their soccer performance was observed  
9 during matches in compulsory physical education classes. A path-analytic model tested the  
10 relationships among the variables using a product-moment correlation matrix and a maximum  
11 likelihood estimation procedure.

12 Results: Stereotype endorsement (i.e., the belief that girls' performance in soccer is poor)  
13 negatively predicted performance, this relationship being mediated by perceived ability.  
14 Moreover, masculinity positively predicted perceived ability, and this relationship was  
15 partially mediated by stereotype endorsement.

16 Conclusion: This study reinforces the idea that girls' sports performance may be related to  
17 gender stereotypes. Interpretations of the results in light of Eccles et al.'s expectancy-value  
18 model and stereotype threat theory are discussed, along with implications for practice.

19

20 Key words: Gender stereotypes; Stereotype endorsement; Sports performance; Perceived  
21 ability; Gender role.

## Introduction

1  
2 Although female sports participation has recently increased (e.g., Riemer & Visio,  
3 2003), boys perform still better in physical education (PE) classes (French Ministry of  
4 Education, 2000). This may be due to the influence of the stereotype that many sports are  
5 masculine, which has been shown to affect perceived ability in sports (e.g., Fredricks &  
6 Eccles, 2005). However, although one may have knowledge of a cultural stereotype, his or her  
7 personal beliefs may or may not be congruent with the stereotype (Devine, 1989). In other  
8 words, it is important to investigate stereotype endorsement in order to have a deeper  
9 understanding of the influence of gender stereotypes on sports performance, and this was the  
10 goal of the study.

11 A few research reported an effect of stereotype endorsement on perceived ability (e.g.,  
12 Bonnot & Croizet, 2007; Schmader, Johns, & Barquissau, 2004), but only one study to our  
13 knowledge has investigated its effects on performance (Belcher, Lee, Solmon, & Harrison,  
14 2003): girls considering hockey as masculine performed lower than girls perceiving it as  
15 neutral. However, these latter girls watched a same-sex model proficiently executing the task,  
16 and this may have explained the results (e.g., Gould & Weiss, 1981). A first goal of this study  
17 was to examine stereotype endorsement as a predictor of performance and the mediation of  
18 this relationship by perceived ability. Second, as research has shown that people who endorse  
19 the attributes considered as appropriate to their sex (e.g., women endorsing feminine  
20 attributes) are likely to assess the appropriateness of sports on a gender basis (e.g., Koivula,  
21 1995), a second goal was to study masculinity (M) and femininity (F) as antecedents of  
22 stereotype endorsement. The tested model is presented in Figure 1.

## Method

23  
24 *Participants and procedure*

1           One-hundred-and-two girls ( $M_{age} = 13.5$  years,  $SD = 1.2$ ) from the 6<sup>th</sup> to the 9<sup>th</sup> grade  
2 of three French junior high schools participated in this correlational study. Data were  
3 collected in PE classes during compulsory soccer lessons, a sport perceived as masculine in  
4 Europe (Koivula, 1995). Students filled out a questionnaire, and after a 10-minute warming  
5 up, the teacher constituted three-player teams of same level students (i.e., high-level players  
6 together and low-level players together). Next, students played four-minute matches based on  
7 the “up-and-down” rule, which favours an equal rapport of strength: the fields were  
8 numbered, and at the end of each game, the winning team “moved up” from for example field  
9 #3 to #2, whereas the losing team “moved down”. The experimenter, who was an experienced  
10 soccer player and blind to participants’ responses to the questionnaire, observed the players of  
11 one team per game, each team being observed once.

## 12 *Measures*

13           *Perceived ability in soccer* was assessed by three items on a 7-point scale ranging  
14 from (1) very poor to (7) very good (e.g., “I think that my level of performance in soccer is:”),  
15 used by Duda and Nicholls (1992) and adapted to soccer ( $\alpha = .74$ ).

16           *Stereotype endorsement* was assessed with Bonnot and Croizet’s (2007) measure,  
17 including two items relative to the level of soccer performance students personally assigned to  
18 girls and boys (e.g., “personally, I think that girls’ performance in soccer is”) on a scale  
19 ranging from (1) very poor to (7) very good. The order of these two items was  
20 counterbalanced. The more participants believed that girls’ performance was poor controlling  
21 for boys’ performance, the more they endorsed the stereotype.

22           *Masculinity and femininity*. Participants filled out the validated French short version  
23 for teenagers of the Bem Sex Role Inventory (Fontayne, Sarrazin, & Famose, 2000) on a 7-  
24 point Likert scale. Athleticism, leadership, and self-confidence compose the M orientation ( $\alpha$   
25 = .77). Tenderness and sensitivity to others compose the F orientation ( $\alpha = .69$ ).



1 controlling for the effect of perceived ability, whereas the direct correlation between these  
2 variables was significant ( $r = -.21, p < .05$ ). This suggests that perceived ability mediated this  
3 relationship. Next, M marginally predicted belief about girls' performance ( $\beta = -.18, p = .07$ ),  
4 and significantly predicted perceived ability ( $\beta = .44, p < .01$ ) and belief that boys'  
5 performance in soccer is good ( $\beta = -.21, p = .04$ ). This suggests that stereotype endorsement  
6 partially mediated the relationship between gender role and perceived ability. Finally, the  
7 analyses did not reveal any significant relationship involving F.

## 8 Discussion

9 First, results showed that the more girls believed in the negative ingroup stereotype  
10 associated with soccer (i.e., that girls' performance is poor), the lower they performed, this  
11 relationship being mediated by a low perceived ability. These findings provide an extension to  
12 the literature by showing that stereotype endorsement may predict not only perceived ability,  
13 but also actual performance. They also demonstrate the role of perceived ability in the  
14 mediation of this relationship, reinforcing Eccles et al.'s expectancy-value model (e.g.,  
15 Fredricks & Eccles, 2005). These results may be understood in terms of a stereotype  
16 internalisation hypothesis: the exposure to cultural stereotypes during the socialisation process  
17 may lead some people to believe that the stereotypes are true for themselves, resulting in poor  
18 performance in the stereotyped domain (e.g., Bonnot & Croizet, 2007).

19 Stereotypes may also affect performance in other ways. For example, a more  
20 situational interpretation would be to consider the results in terms of *stereotype threat* (e.g.,  
21 Steele & Aronson, 1995): when a negative ingroup stereotype is made salient in a testing  
22 situation, people may fear confirming the stereotype, this extra pressure impeding their  
23 performance. A study recently showed that females may be susceptible to this effect in soccer  
24 (Chalabaev, Sarrazin, Stone, & Cury, 2008). However, stereotype threat is not supposed to  
25 affect perceived ability (e.g., Steele & Aronson, 1995, Study 1), but instead to create an

1 “interpretative framework” that when difficulty is experienced during the task, it reduces self-  
2 efficacy, which may evolve during the task and is thus a more situation-specific self-  
3 assessment than perceived ability (Ryan & Ryan, 2005). In this study we did not examine  
4 girls’ self-efficacy during the task, but rather their perception about their general soccer  
5 ability prior to the evaluation. In sum, if Eccles et al.’s expectancy-value model seems to be  
6 more appropriate to interpret our results, it is important to note that stereotypes may affect  
7 performance in many ways that may add up to each other. It would be interesting to  
8 distinguish in future studies the gender stereotypes effects due to stereotype internalisation  
9 from the effects due to the presence of stereotypes in the social context.

10 Next, results showed that M negatively predicted stereotype endorsement, but not F.  
11 According to the differentiated additive androgyny model (e.g., Marsh & Byrne, 1991), the  
12 contribution of M is more important in masculine domains whereas the contribution of F is  
13 more important in feminine domains. This idea has been corroborated in the sports areas (e.g.,  
14 Guillet, Sarrazin, Fontayne, et Brustad, 2006), and could thus explain why F did not affect  
15 stereotype endorsement and perceived ability in soccer.

16 Although this research reveals both some consequences and antecedents of stereotype  
17 endorsement, the results need to be considered with care. As with all path analytic studies, it  
18 is always possible that a relevant variable was omitted. Also, we cannot talk about causal  
19 relations between the variables: indeed, symmetrical relations may exist. For example, based  
20 on the *identity bifurcation* theory (Pronin, Steele, & Ross, 2004), identification to soccer (i.e.,  
21 non-endorsement of the stereotype) may lead to the depreciation of feminine characteristics in  
22 favour of masculine ones.

23 To conclude, this study reinforces the idea that girls’ poor performance in PE classes  
24 is in part due to the influence of gender stereotypes and highlight the role of personal beliefs  
25 in this relationship. This implies that it could be useful to design intervention programs based

- 1 on changing girls' perceptions about gender appropriateness of sports in order to enhance
- 2 their performance in masculine sports.

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Footnotes

1  
2 1. The correlation matrix is available from the first author of the article.

3 2. Different models were also tested but not reported in the paper. For example, the  
4 direct relations between M, F and performance were formulated, but the paths between these  
5 variables were not significant ( $ts < |1.09|$ ). Thus, this model is not discussed any further.  
6 Moreover, the interaction between M and F was not significantly related to the other variables  
7 and was thus not included in the model tested in this study.

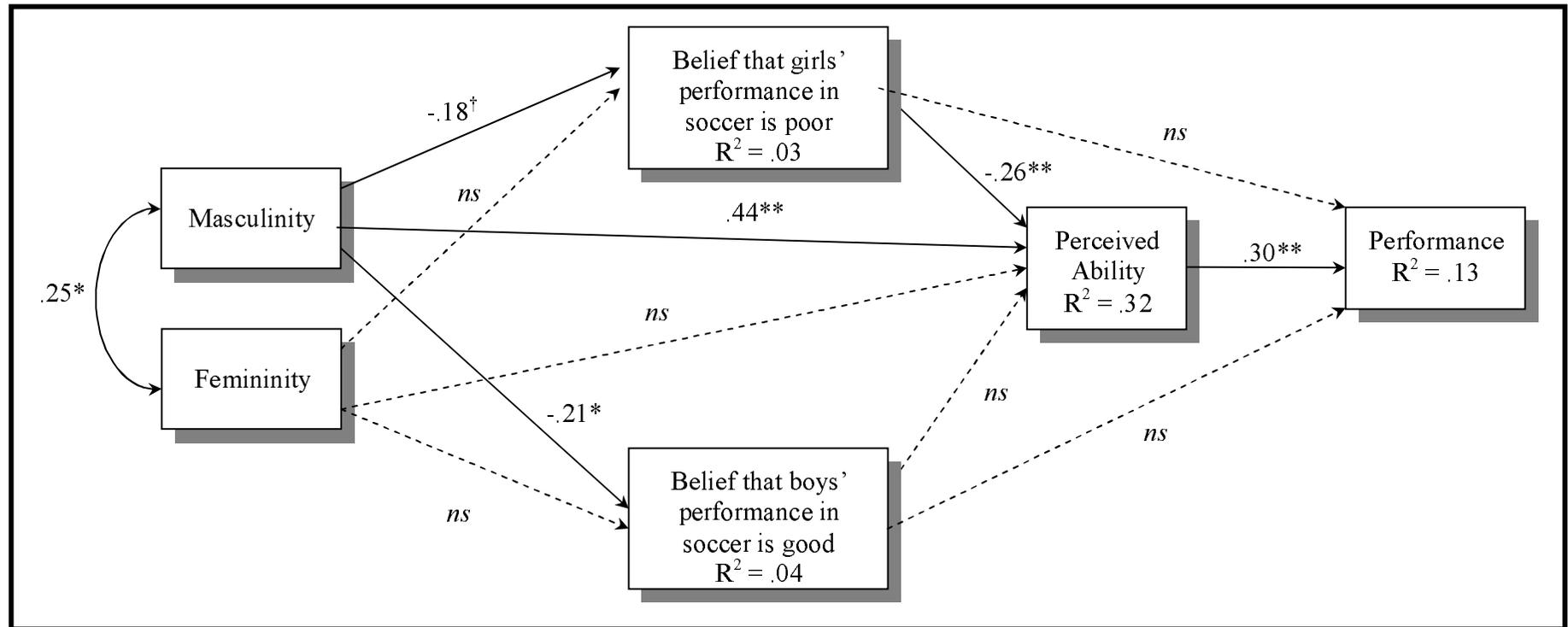
8 3. In order to clarify the interpretations, the response to the belief about girls'  
9 performance item was reversed.

10

1 Figure Captions

2 *Figure 1.* Results of the path analysis model testing the relationships between the variables of  
3 the study.

Figure 1.



Note.  $^\dagger p < .10$ ;  $* p < .05$ ;  $** p < .01$ .