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"How good are you in math?" The effect of gender stereotypes on students' recollection of their school marks

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Abstract

Two studies examined the effect of gender stereotypes on students' recollection of their school marks in stereotypically feminine (arts) and masculine (mathematics) domains. As predicted, the results of Study 1 indicated that the more students believed in gender stereotypes prior to recall, the more they biased their reported marks, compared to their actual marks, in a stereotype-consistent way (female students underestimated their marks in mathematics and male students underestimated their marks in arts). Study 2, in which the salience of gender stereotypes was manipulated prior to recall, yielded similar findings. The recall of school marks was more stereotype-consistent in a condition of high salience than in a condition of low salience of gender stereotypes. The theoretical implications of these results are discussed.

Keywords: Gender stereotypes; Stereotype-consistent recall; School marks

What is the relationship between gender stereotypes and students' recollection of their academic achievement? Recent research suggests that gender stereotypes about men's and women's abilities in arts (i.e., a stereotypically feminine domain) and mathematics (i.e., a stereotypically masculine domain) can elicit stereotype-consistent recall of past achievement (Guimond & Roussel, 2001, 2002). For instance, using a high school student sample, Guimond and Roussel (2001) found that male students reported significantly higher marks in mathematics and lower marks in arts than female students, but only in a condition of high salience of gender stereotypes. In a condition of low salience of gender stereotypes, there were no gender differences in students' reported school marks. In a related vein, Chatard (2005) asked undergraduate university students to report their grades obtained in mathematics on a national standardized test. According to the experimental condition, the study was allegedly related either to "gender differences in memory" or to "gender differences in mathematics". Again, results showed that male and female students reported comparable school marks in the memory-related condition, in which no relevant stereotype was available. However, in line with the stereotype about men's higher math ability, male students reported significantly higher marks than female students in the math-related condition.

Consistent with previous research on autobiographical memories (Conway & Ross, 1984; Ross, 1989), it seems that when students have lay theories in mind, such as, for instance, gender stereotypes, these can colour their memories and produce biases in recall of past achievement. Unfortunately, the actual marks obtained by students were not available in previously described studies, so no definite conclusion could be reached in this regard. Furthermore, because the actual marks of students were not controlled for in these studies, it was impossible to know to what

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extent students overestimated vs. underestimated their reported marks. The main goal of the present research was then to compare actual marks with self-reported ones, to determine whether or not gender stereotypes can elicit stereotype-consistent recall of school marks. Do students report their school marks accurately, or do they overestimate or underestimate their marks in a stereotype-consistent way? Obviously, the precise manner in which students reconstruct their past achievement is an important issue because it is likely to play a major role in regulating students' behaviors (Ehrlinger & Dunning, 2003; Ross & Wilson, 2002, 2003).

To our knowledge, there is indeed only one study in which the school marks reported by students were compared to the actual marks. In this study (Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006; Study 4), high school students were first asked to rate their verbal ability on a seven-point scale either in comparison with the same gender or in comparison with the other gender (men vs. women in general). Next, participants were asked to report their school marks in the corresponding domain (i.e., arts), and these marks were compared to the actual marks. In this study, stereotype-consistent recall of school marks was found, but only in the intergroup context of comparison, that is, when students first had to rate their own verbal ability in comparison with the opposite sex. In this context, female students overestimated their reported marks in arts, compared to their actual marks, whereas male students did not.

Guimond et al. (2006) interpreted these results as reflecting the greater accessibility of stereotype relevant knowledge in an intergroup than in an intragroup context of comparison, in line with self-categorization theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Indeed, SCT (Turner, 1999; Turner & Onorato, 1999) draws a basic distinction between two main levels of self-categorization: the personal identity and the social identity level. At the personal identity level, people are supposed to behave in a way consistent with their own, idiosyncratic characteristics. However, SCT stresses that the self-categorization level can change rather swiftly. When primed with a social category, or an in-group relevant stereotype, the self-categorization level shifts from personal to social identity, and individuals tend to behave in a more stereotype-consistent way. In this case, people are supposed to engage in a self-stereotyping process (Turner, 1999; Turner et al., 1987). As O'Brien and Hummert (2006) recently noticed: "*Self-stereotyping occurs when cues that activate stereotypes of one's group automatically lead to behaviors consistent with that particular stereotype*." (pp. 340). Previous research suggests that self-stereotyping is a relatively automatic, "cold" cognitive process (i.e., not involving motivational or affective factors), which can occur without attention or awareness (Onorato & Turner, 2001, 2004; Wheeler & Petty, 2001).

The evidence that gender stereotypes, and more particularly self-stereotyping, shape the recollection of school marks was quite indirect in Guimond and colleagues' (2006) study. Despite this lack of direct evidence, a substantial amount of previous research offered rather convincing support for the idea that a self-stereotyping process may account for the effects of activated stereotypes on behaviors (see Wheeler & Petty, 2001). For instance, research among older adults has shown that subliminally activating stereotypically negative characteristics of older adults (e.g., senile) lowered their memory performance, whereas subliminally activating positive characteristics (e.g., experienced) increased their memory performance (Levy, 1996). Parallel findings emerged among older adults on a vast array of measures (see Hausdorff, Levy, & Wei, 1999; Levy, 2000; Levy, Ashman, & Dror, 1999; Levy, Hausdorff, Hencke, & Wei, 2000). In a similar vein, it has been shown that when Asian American women are made aware of their gender, their math performance declines (in line with the stereotype of females as not very competent in math), while when they are made aware of their ethnicity, the stereotype shifts, and their math performance improves (in line with the stereotype of Asians as highly competent in math) (Ambady, Shih, Kim, & Pittinsky, 2001; Shih, Pittinsky, & Ambady, 1999). More generally, Steele and Ambady (2006) recently found that female students primed with the category female or their gender identity reported more negative attitudes towards mathematics (e.g., doing an algebra problem) and more positive attitudes towards arts (e.g., writing an essay) than female students in control conditions. In line with SCT, Steele and Ambady (2006) conceived that "*these effects are due to a shift in working self concept*" (pp. 5).

In a related vein, our general hypothesis is that an indirect activation of gender stereotypes can elicit stereotype-consistent recall of past achievement, with actual marks controlled for. When relevant gender stereotypes are made salient, students' self-reported school marks should be biased in a stereotype-consistent way compared to their actual marks, more than when a relevant stereotype is not made salient (or is made less salient). That is, female students should overestimate their reported marks in arts and underestimate their reported marks in mathematics, while male students should show the opposite pattern, when relevant stereotypes are salient.

The present research

To test the above hypotheses, we conducted two studies among high school students using an individual (Study 1) and a group (Study 2) level of analysis. In both studies, the actual marks obtained by students were used as a baseline. In Study 1, we predicted that the more students believed in gender stereotypes prior to recall, the more they would bias their reported marks in a stereotype-consistent way: Female students should overestimate their marks in arts and underestimate their marks in maths, while male students should show the opposite pattern. Thus, merely asking students to report their marks in mathematics and arts should elicit stereotype-consistent recall of school marks, at least among students who believe in gender stereotypes

prior to recall. Study 2 tests the same hypothesis using an experimental design. It was hypothesized that, when students' actual marks are controlled for, reported school marks should be more biased in a stereotype-consistent way in a condition of high than of low salience of gender stereotypes (everything else being equal). These studies extend Guimond et al.'s (2006) study by directly measuring gender stereotype belief (Study 1) and manipulating (Study 2) gender stereotype salience. Thus, any observed effects could plausibly be attributed to a self-stereotyping process.

Study 1

Method

Participants

Seventy-three French high school students (34 males and 39 females) participated in this study. All participants had the same grade level (mean of age = 15.5 years, $SD = .43$), and were enlisted in a program for relatively good students. They volunteered to participate at the end of a regular course, during the 2005 academic year.

Procedure

Participants were questioned at the beginning of the school year (T1), and about 3 months later, at the end of the first term (T2). At T1, we assessed belief in gender stereotypes. At T2, we measured main dependent variables. Each phase is described in turn.

Time 1. A female high school teacher administered the questionnaire. To reduce the likelihood of participants' focusing on the gender stereotype measures, they were asked to complete a large booklet presented as an inquiry about students' interests and motivations. The questionnaire included several measures. However, only measures of gender stereotype beliefs were of interest in the present research. Four items were used to this purpose: "In general, men have high ability in math", "In general, women have high ability in math", "In general, men have high ability in arts", and "In general, women have high ability in arts". The question order was the same for all participants. For each item, the participants were asked to indicate their responses using a seven-point Likert scale (1 = totally disagree, 7 = totally agree).

Time 2. To reduce the likelihood that participants perceive a link between the two sessions, a male experimenter administered the questionnaire at T2. At this time, participants were simply asked to complete a very short questionnaire. On the first page, they were informed that: "In this part, we are interested in your school marks in mathematics and arts. Please, indicate as precisely as possible your marks in mathematics and arts obtained on your last national standardized test." The written indication "as precisely as possible" was underlined and appeared in bold characters. The test in question was a very important examination in France. It had been administered about 2 years before the study. In the French educational system, the highest possible mark is 20, the lowest is 0, but students had to obtain at least a 10 to pursue high school education. On the following pages, we assessed students' self-evaluation ("I am gifted in mathematics" and "I am gifted in French"), and their future vocational choice ("I plan to pursue education in mathematics at college" and "I plan to pursue education in literature at college"), using seven-point scales (1 = totally disagree, 7 = totally agree). These measures were used to assess self-stereotyping. The ensuing hypothesis is that the more students believe in gender stereotypes, the more they would report stereotype-consistent self-evaluations and future vocational choices.

Finally, participants were thanked and debriefed. The high school staff provided official school marks of each student. These were matched to the questionnaires using an anonymous code reported by students at the end of each session.

Results and discussion

Time 1. Based on previous research, it was expected that most participants would believe in gender stereotypes (Guimond & Roussel, 2001; Sinclair, Hardin, & Lowery, 2006). As expected, men ($M = 5.15$) were evaluated as being more able in mathematics than women ($M = 4.65$), $t(71) = 4.10$, $p < .001$, whereas women ($M = 5.41$) were evaluated as being more able in arts than men ($M = 4.47$), $t(75) = 5.35$, $p < .001$. There were more students who believed in the female stereotype than in the male stereotype, but there were no gender differences on these measures. The difference between ratings of men's and women's ability was used to compute a measure of gender stereotype belief related to mathematics and arts, respectively. The gender stereotype measures were coded so that higher scores indicate greater endorsement of the stereotype. The possible range of these measures were from −6 to 6, but for each domain (arts and mathematics) the participants' actual responses ranged from −3 to 4.

Time 2. Unsurprisingly, reported school marks were strongly related to official marks, $rs(72) = .78$ and .91, $ps < .001$, in arts and mathematics respectively. A bias in recall (in arts and mathematics) was computed by subtracting official marks from the reported ones, so that a positive difference indicates an overestimation, and a negative difference an underestimation. To test our main predictions, the recall bias was regressed on participants' sex (male coded −1; female coded 1), the related gender-stereotype belief measure (standardized), and the product term between sex and stereotype belief measure.

Considering the recall bias *in arts*, there was a main effect of participants' sex, $\beta = -.48$, $t(71) = -3.57$, $p < .001$. This effect indicated that female students reported lower school marks ($M = 12.78$) than those that they had actually obtained ($M = 13.32$) while men did not ($Ms = 12.46$, and 12.30, respectively). Female students were more prone to modesty than male students; they downplayed their actual marks. Although this finding shows the opposite pattern of

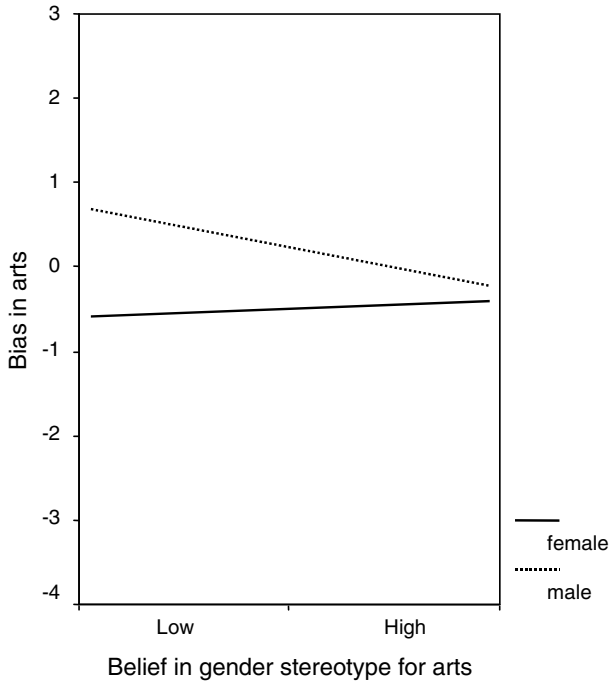

Fig. 1. Bias in recall of school marks in arts as a function of gender stereotype belief (1 standard deviation below and above the mean) and participant's sex (Study 1).

what might be expected on the basis of our hypothesis, it is consistent with previous research showing that female students are generally more prone to modesty than male students in their performance estimates (Daubman, Heatherington, & Ahn, 1992; Heatherington et al., 1993). The effect of stereotype belief was not significant, $\beta = -.13$, $t(71) = -1.16$, *n*s, but the interaction term reached significance, $\beta = .30$, $t(71) = 2.21$, $p < .05$. Thus, as predicted, gender-stereotype belief moderated the effect of the participants' sex on recall bias in arts (see Fig. 1). Simple slope tests[1] (see Cohen, Cohen, West, & Aiken, 2003) revealed that the gender stereotype belief was not related to the recall bias among female students, $\beta = .10$, $t(71) = .85$, *n*s, but was negatively related to recall bias among male students, $\beta = -.28$, $t(71) = -2.15$, $p < .02$, one-tailed. Thus, the more boys believed in the stereotype at a given moment, the more they underestimated their mark in arts 3 months later.

Considering the recall bias *in mathematics*, there was no effect of participants' sex, $\beta = -.10$, $t(70) = -.77$, *n*s, and no effect of gender stereotype belief, $\beta = -.11$, $t(70) = -.90$, *n*s. The interaction term reached marginal significance, $\beta = -.24$, $t(70) = -1.79$, $p < .08$. Gender-stereotype belief tended to moderate the effect of the participants' sex on recall bias in mathematics (see Fig. 2). It was not significantly related to recall bias among male students, $\beta = .09$, $t(70) < 1$, *n*s, but it was negatively related to recall bias among female students, $\beta = -.20$, $t(70) = -1.71$, $p < .05$, one-tailed. Thus, the more girls believed in the stereotype at a given moment, the more they subsequently underestimated their marks in mathematics.

The findings observed on the bias in mathematics mirrored those observed on the bias in arts, even though they were somewhat weaker. This can probably be accounted for by the fact that the female stereotype was more strongly endorsed than the male stereotype in the present study. However, for both arts and mathematics, there was a positive (although not significant) relationship between gender-stereotype belief and bias in recall for positively stereotyped students (female students in arts and male students in mathematics), and a negative relationship for negatively stereotyped students (female students in mathematics and male students in arts). These findings support our main prediction that the more students endorse gender stereotypes prior to recall, the more they display stereotype-consistent recall of school marks (despite the fact that stereotype belief was assessed 3 months prior to recall).

The following analyses provide additional support to the assumption that a self-stereotyping process accounts for the present findings. First, as shown in Table 1, recall bias in both arts and mathematics appears to be related to self-evaluation and to vocational choice indicated by students. Second, when the official marks were controlled for, we found that gender-stereotype belief moderated the effect of

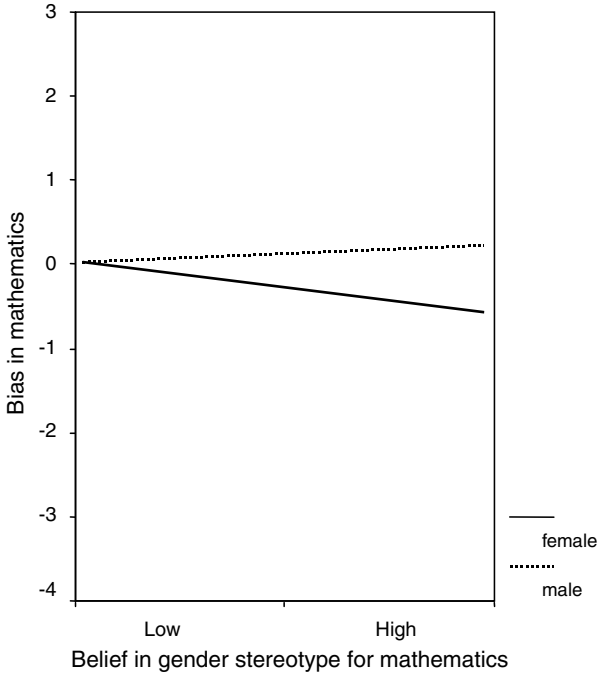

Fig. 2. Bias in recall of school marks in mathematics as a function of gender stereotype belief (1 standard deviation below and above the mean) and participant's sex (Study 1).

[1] In the present research, the reported simple slope tests are one-tailed. Although two-tailed tests are preferable given that effects *could* a priori go either direction, one-tailed seem justified tests in this particular case: Predictions were clearly directional, based on a substantial amount of previous results (Chatard, 2005; Guimond et al., 2006, Study 4; Guimond & Roussel, 2001, 2002), and controls for accurate indicators of past achievement were included. Obviously, it is rare to have data such as these in empirical research where the true score of participants are controlled for.

Table 1
Correlations (Study 1)

	Bias in arts	Self-evaluation in math	Self-evaluation in arts	Vocation in math	Vocation in arts
Bias in math	.18	.24*	−.03	.25*	−.07
Bias in arts		.00	.27*	.01	.08
Self-evaluation in math			−.09	.59***	−.24*
Self-evaluation in arts				−.21+	.32**
Vocation in math					−.41***

* $p < .05$.
** $p < .01$.
*** $p < .001$.
+ $p < .10$.

participants' sex on the self-evaluation measures, $\beta = .43$, $t(70) = 3.59$, $p < .01$, and $\beta = -.27$, $t(70) = -2.56$, $p < .05$, for both arts and mathematics (respectively). These reliable moderations, akin to those observed on recall biases, confirm that participants relied on gender stereotypes (i.e., engaged in a self-stereotyping process) when evaluating their own ability in gender-stereotyped domains.[2]

Study 2

In Study 2, we wanted to extend previous findings by introducing an experimental manipulation. The goal of this study was to test whether gender stereotypes can *cause* students to bias the recall of their school marks, when their actual marks are controlled for. Thus, we manipulated gender stereotypes salience before asking students to report their school marks. In study 2, the contextual salience of gender stereotypes was manipulated exactly as in previous studies in which stereotype-consistent biases in recall were observed (Guimond & Roussel, 2001, 2002). This manipulation allows inducing high vs. low salience of gender stereotypes for both arts and mathematics, in the same manner for male and female students.

In one condition, students had to evaluate men's and women's abilities in mathematics and arts (e.g., "Men are gifted in mathematics" and "Women are gifted in mathematics"), before evaluating their own abilities in the corresponding domains using similar items (e.g., "I am gifted in mathematics"). In another condition, students had to comply with a different sequence of events: They had to rate their own abilities in mathematics and arts before rating men's and women's abilities in the corresponding domains. Finally, in both conditions participants next had to report their school marks in mathematics and arts. According to Guimond and Roussel (2001), the group-first condition (i.e., when students first rate men and women) is a gender stereotypes high salience condition because students are aware that gender stereotypes can be applied to the self when they rate their own abilities. In contrast, the self-first condition (i.e., when students first rate their own abilities) is a condition of lower gender stereotypes salience because students are less aware that these can be applied to the self when they rate their own abilities.

Based on Guimond and Roussel's (2001, 2002) previous research, we hypothesized that gender stereotypes salience (low vs. high) would moderate the recall bias of previous school marks. A gender stereotypes high salience condition should involve more stereotype-consistent recall of school marks than a low salience condition. However, since we had access to students' official school marks, we can formulate more precise predictions. Based on Study 1 results, we expect negatively stereotyped students to underestimate their reported marks more than positively stereotyped students in a gender stereotypes high salience condition, but not in a low salience condition. This leads us to predict a reliable interaction between the participants' sex, gender stereotype salience, and academic domain (arts vs. mathematics).

Method

Participants

Sixty-four French high school students (29 female and 35 male students, mean age = 14.2 years, $SD = .57$) participated in the second study. All had the same grade level.

Procedure

Participants were questioned during arts and mathematics classes in the middle of the school year. According to a random distribution, they were in one of the two experimental conditions. As described above, in the gender stereotypes high salience condition, students were asked to evaluate the abilities of men and women in mathematics and arts ("Men are gifted in mathematics", "Women are gifted in mathematics", "Men are gifted in arts", and "Women are gifted in arts") before evaluating their own abilities ("I'm gifted in mathematics" and "I'm gifted in arts"). Participants indicated their responses on seven-point scales (1 = totally disagree and 7 = totally agree). In the gender stereotypes low salience condition, self-evaluation was requested first, the two items used by participants to rate their own abilities being presented before the four items used to rate men's and women's abilities. Under both conditions, students finished by reporting their last school marks obtained in mathematics and arts. As in Study 1, the high school staff provided us with each student's official marks, which were matched to the questionnaires using an anonymous code.

Results

As in Study 1, we found high correlations between actual school marks and the reported ones, $rs = .89$, $ps < .001$, for both arts and mathematics. A recall bias in arts and mathematics was computed based on a difference score between

[2] In this study, there was no significant moderation on the vocational choice expected by students.

reported and official marks. Positive scores indicated that participants overestimated their reported marks as compared to their official marks. As in Study 1, participants manifested belief in gender stereotypes (women were rated as more able in arts, $t(84) = 8.14$, $p < .001$, and as less able in mathematics than men, $t(84) = 5.33$, $p < .001$), and there were more students who believed in the female stereotype than in the male stereotype.

Preliminary analysis

The gender stereotypes high salience condition should induce more self-stereotyping than the low salience condition. To verify this, we correlated in-group members' ability ratings in arts and mathematics with recall bias in these domains (see Guimond et al., 2006). In line with our induction, the recall bias in arts was more strongly related to the in-group rating in the gender stereotypes high salience condition, $r(29) = .37$, $p < .03$, one-tail, than in the low salience condition, $r(35) = -.18$, *n*s. In the same way, the recall bias in mathematics was more strongly related to the in-group rating in the gender stereotypes high salience condition, $r(29) = .22$, $p < .10$, one-tail, than in the low salience condition, $r(35) = .08$, *n*s. These results outline that the high salience condition induced more self-stereotyping than the low salience condition.[3]

Main analyses

To test our main prediction about the gender stereotypes salience effect, we performed a 2 (sex: male vs. female) × 2 (condition: high salience vs. low salience) × 2 (bias in recall: mathematics vs. arts) ANOVA with the last variable as a repeated measure. In this analysis, there was a marginal main effect of the repeated variable, $F(1, 60) = 3.00$, $p < .10$, indicating that participants were more biased in arts ($M = .43$, $SD = .93$) than in mathematics ($M = .17$, $SD = 1.77$). The only other significant effect found was the three-way sex × salience × domain interaction, $F(1, 60) = 6.90$, $p < .02$. The two-way interaction within domain type was significant for bias in arts, $F(1, 60) = 4.15$, $p < .05$, and marginally significant for bias in mathematics, $F(1, 60) = 2.65$, $p < .10$. We predicted that negatively stereotyped students would tend to underestimate their reported marks more than positively stereotyped students, in the gender stereotypes high salience condition, but not in the low salience condition. To decompose the three-way interaction, a specific contrast testing gender differences within each condition thus seems the most relevant to the question that we are investigating.

[3] For each dimension (arts vs. mathematics), the in-group rating rating was regressed onto bias, salience condition, and the interaction of the two. The interaction coefficient tested whether the magnitude of the bias-in-group rating relation was different in the two salience conditions. In line with our induction, the test of the interaction coefficient was significant for the bias in arts, $\beta = .34$, $t(63) = 2.46$, $p < .03$. However, it was not significant for the bias in mathematics, $\beta = .06$, $t(63) = .49$, *n*s. This should be kept in mind when interpreting the results.

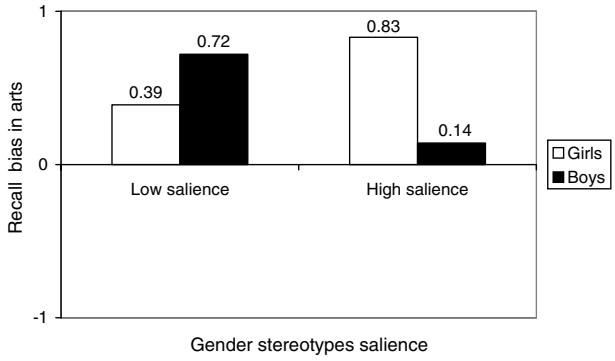

Fig. 3. Bias in recall of school marks in arts as a function of gender stereotype salience and participant's sex (Study 2).

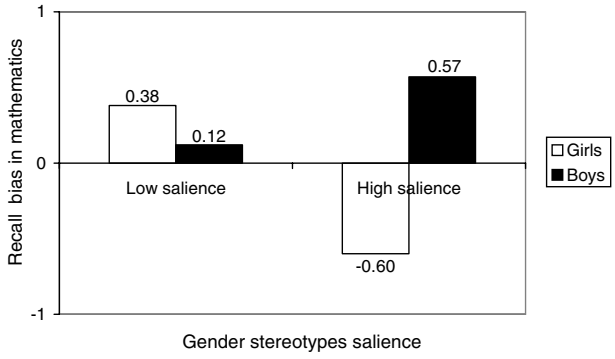

Fig. 4. Bias in recall of school marks in mathematics as a function of gender stereotype salience and participant's sex (Study 2).

Considering bias *in arts*, as predicted, there were no gender differences in the gender stereotypes low salience condition, $t(60) = .99$, *n*s, but a significant gender difference was observed in the high salience condition, $t(60) = -1.84$, $p < .05$, one tailed. In the latter condition, the means indicated that male students reported lower school marks in arts than female students (see Fig. 3).

Considering bias *in mathematics*, as predicted, there were no gender differences in the gender stereotypes low salience condition, $t(60) = -.43$, *n*s, but there was a significant gender difference in the high salience condition, $t(60) = 1.76$, $p < .05$, one tailed. In this condition, students displayed stereotype-consistent recall of their school marks: Female students underestimated their school marks, while male students did not (see Fig. 4).

General discussion

In the present research, we examined the effect of gender stereotypes on students' recollection of their school marks. Based on previous research (Chatard, 2005; Guimond & Roussel, 2001, 2002; Guimond et al., 2006), we hypothesized that (1) the more students believe in gender stereotypes prior to recall, the more their recollection of school marks would be stereotype-consistent, and (2) the recall of school marks should be more stereotype-consistent when

the contextual salience of gender stereotypes is heightened. The results from two studies provided support for these hypotheses.

In Study 1, it was found that the more female students endorsed the belief of men's greater ability in mathematics prior to recall, the more they underestimated their reported marks in this domain. Similar results appeared with male students, when considering the stereotype of women's greater ability in arts and the reported school marks in this domain. In line with predictions derived from SCT, Study 2 confirms that distortions in the recall of previous school marks are more likely when gender stereotypes become contextually salient. More precisely, it was demonstrated how heightened salience of gender stereotypes was associated to underestimation of school marks by negatively stereotyped students (men in arts and women in mathematics). In contrast, positively stereotyped students tended to overestimate their school marks.

These findings extend previous work in two important ways. First, we found a link between gender stereotype belief, measured at an earlier period, and students' school marks recollection. This link was rather indirect in previous work (e.g., Guimond et al., 2006). The results of Study 1 also reveal that the more students believe in gender stereotypes, the more they rate their own ability in a stereotype-consistent way. These findings are thus consistent with the view that a self-stereotyping process accounts for stereotype-consistent behaviors observed in the present studies (Turner, 1999; Turner et al., 1987). It seems that merely asking students to report their school marks in gender-stereotyped domains is enough to elicit stereotype-consistent recall, at least among students who believe in gender stereotypes.

Second, we found that gender stereotypes induced some misremembering of past achievement despite controls for accurate indicators of past achievement. This latter finding is particularly intriguing from a practical perspective, because it suggests that self-reported school marks are not completely accurate and that they cannot be considered as analogous to official school marks, even if these strongly correlate with one another. This finding is also of interest from a theoretical viewpoint. As Wheeler and Petty (2001) recently noticed, the dominant account for the behavioral effects of self-relevant stereotype activation involves a hot, motivational factor, such as anxiety (e.g., see the stereotype threat literature, Steele, Spencer, & Aronson, 2002). However, it seems obvious that a hot, motivational factor such as anxiety, cannot account for the effects of *positive* self-relevant stereotype on behaviors (Ambady et al., 2001; Shih et al., 1999; Steele & Ambady, 2006). In the same way, it seems equally obvious that anxiety cannot account for the stereotype-consistent recall of school marks observed in the present studies. Thus, these studies complement current literature, documenting that cold cognitive processes, such as self-stereotyping, may also account for the effects of self-relevant stereotype activation on behaviors (see Wheeler & Petty, 2001).

It also seems interesting to consider some of the potential implications of our findings for members of stereotyped groups. Recent research has documented that even women who perform as well as men on a reasoning test tend to underestimate their performance on that test compared to men (Ehrlinger & Dunning, 2003). In the same way, it is possible that women are less likely to embrace scientific careers than men because gender stereotypes lead them to underestimate their past achievement. The results of our first study provide some correlational evidence sustaining this assumption. However, further research is needed to address this issue in a more compelling manner.

Future work may also investigate stereotype-consistent recall of past achievement using different stereotypes. Our own work in progress (Chatard, Konan, & Mugny, submitted for publication) found that when White European pupils were led to believe that they participated in an intercultural project involving European and African countries, those who reported some racial stereotype beliefs overestimated their school marks (compared to their actual marks), and performed better intellectually, whereas those who neglected these beliefs did not. Obviously, such findings may contribute to the literature on the effects of stereotype priming on behaviors (Wheeler & Petty, 2001).

To conclude, the present article demonstrates significant biases in the self-report of school marks. Students who believe in gender stereotypes were more likely to exhibit stereotype-consistent recall of their school marks. Stereotype-consistent misremembering of past achievement was also found when we manipulated the salience of gender stereotypes before recall. Further research should investigate the potential implications of these findings to better understand how stereotype-consistent recall of past achievement affects behaviors of stereotyped and non-stereotyped group members.

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