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Sophie Berjot, Camille Amoura, Leïla Bensalah, Amandine Herbay

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Stereotype threat among children attending adapted courses (7-10 years old): A study in a quasi-ordinary classroom

Menace de stéréotype chez les enfants en classe d'adaptation (7-10 ans) : une étude en milieu quasi-ordinaire

*Sophie Berjot**
*Camille Amoura**
*Leïla Bensalah**
*Amandine Herbay**

Abstract

The aim of the present studies was to explore if students attending AC (adapted classes - remedial training, 3 times a week; 7-10 years) have a bad reputation (are considered as less able than RC students – Regular Classes) and if this bad reputation can make them vulnerable to stereotype threat. Study 1 assessed self-perceptions of students from adapted (AC) and regular classes (RC) as well as other-perceptions of RC students and meta-perceptions of AC students. Results showed that RC students perceived themselves more positively than they perceived AC students and that self-perceptions of AC students were less positive than those of RC students. They also showed that the meta-perceptions of AC students were similar to the other-perceptions of RC students. Study 2, ran 15 days after, showed that the performance of AC

Résumé

L'objectif de ces études est d'explorer si des élèves faisant partie de Classes d'Adaptation (appelées Classes CLAD, dans lesquelles une aide spécialisée est apportée aux élèves en difficulté, 3 fois par semaine ; 7-10 ans) sont victimes d'une mauvaise réputation (sont perçus comme moins capables que les élèves en Classe Normale – CN) et si cette mauvaise réputation peut les rendre vulnérables à la menace du stéréotype. L'étude 1 a évalué les auto-perceptions des élèves en CA et CN, de même que les hétéro-perceptions des élèves en CN et les méta-perceptions des élèves en CA. Les résultats ont montré que les élèves en CN se perçoivent plus positivement qu'ils ne perçoivent les élèves en CA et que l'auto-perception des élèves en CA est inférieure à celles des élèves en CN. Ils ont également montré que la

Key-words
Stereotype threat, bad reputation, performance, 7-10 years old students

Mots-clés
Menace de stéréotype, mauvaise réputation, performance, élèves de 7 à 10 ans

* Laboratoire Cognition, Santé & Socialisation C2S – EA 6291, Université de Reims Champagne-Ardenne, 57, rue Pierre Taittinger, 51096 Reims Cedex, France. E-mails : sophie.berjot@univ-reims.fr; camille.amoura@univ-reims.fr; leila.bensalah@univ-reims.fr; amandine.herbay@laposte.net

students was impaired when under stereotype threat. Study 3 replicated Study 2 and showed that the effect of stereotype threat on performance was still there even after controlling for initial self-perceptions. It also showed that self-perceptions of AC and RC students lowered after the threat.

méta-perception des élèves en CA était similaire à l'hétéro-perception des élèves en CN. L'étude 2, réalisée 15 jours après, a montré que les performances des élèves en CA a été affectée par la menace de stéréotype. L'étude 3 a répliqué l'étude 2 et a montré que les effets de la menace de stéréotype sur la performance étaient toujours visibles, même après avoir contrôlé l'effet des auto-perceptions initiales. Elle a également montré que les auto-perceptions des élèves en CA et en CN diminuent après la menace.

Public schools offer in many countries basic and solid education that facilitates access to universities and higher education institutes. This system is generally quite efficient in France principally because it is based on shared and tested methodologies. But what works for the majority may not work for all, and this system turns out to be less efficient for some students because they learn faster and get bored during school, or because they learn slowly. To compensate for this, schools set specific plans to allow slower learners to catch up. Those plans often consist of opening specific classes in which special teachers help these students to catch up with the program. The aim is to reintegrate children into the regular system.

Many forms of such system exist in occidental countries, which differ in the amount of specialized/specific courses children have to take. This can consist of a few hours' courses during the week after school time or of being inserted in a full-time specialized class. The present studies were run with remedial classes called CLAD (for 'CLasse d'ADaptation' or 'ADadped CLass'). This system aims at helping students from elementary schools (from 2nd to 4th grade) acquiring specific academic knowledge they did not learn during the year by giving them two or three times a

week an hour of class with a specialized teacher. Students are still part of their normal class during regular school time but stay longer some days during the week to take this remedial training. While this system may be quite helpful for students, its positive impact on learning and performance may have side-effects that are not always foreseen. Indeed, if that system is implemented to help students, it is also intended to students who learn slowly. Given that in our occidental societies behaviors are often attributed to personal instead of situational factors (Ross & Nisbett, 1991), even by children (Stipek & Tannatt, 1984), it is likely that those students are perceived as being slower and less smart, and as such are prone to be, even if temporarily, stigmatized and victim of what is called stereotype threat. So the aims of those studies are to 1) show that students attending adapted classes (AC) have a bad reputation regarding their academic abilities and are conscious of this bad reputation, and 2) to explore if this bad reputation impacts their self-perception (Study 1). It is also aimed at examining whether this bad reputation is powerful enough to impact their performance when a task is presented as a test. Study 2 and 3 explore if students attending AC are vulnerable to stereotype threat because of their (temporarily) belonging to this specific adapted system (Study 2) and/or because of their initial low self-perception (Study 3).

Stereotype threat

Stereotype threat is *"being at risk of confirming, as self-characteristic, a negative stereotype about one's group"* (Steele & Aronson, 1995, p. 797). Far from being a kind of chronic vulnerability because of one's group membership, stereotype threat arises in specific situations where an individual is at risk of fulfilling the stereotype associated with his or her group membership. Many studies have shown that Black American students perform less well when a task is presented as diagnostic of their intellectual abilities (Steele & Aronson, 1995) or when the lack of abilities of members of their group is made explicit (Cadinu, Maass, Frigerio, Impagliazzo, & Latinotti, 2003). The same was generally observed with other ethnic minorities such as Latinos in the States (for a review, see Guyll, Madon, Prieto, & Scherr,

2010) or French-Arab students (Chateignier, Dutrévis, Nugier, & Chekroun, 2009). Also, women, who are allegedly less able in math, often perform less well on a math test when it is presented as a test of quantitative capacities (Schmader & Johns, 2003) than when it is described as a test/task not relevant to math. The same was also typically observed with many other social groups for which it exists a negative stereotype such as low socioeconomic status students (Croizet & Claire, 1998) or even students from psychology majors tested on their learning skills while explicitly compared with students from medical school majors (Dutrevis & Croizet, 2005).

Stereotype threat is foremost a situational threat (Steele & Aronson, 1995). It is the situation and its meaning for the individuals that make them particularly vulnerable. For example, Shih, Pittinsky, and Ambady (1999) asked Asian American women to take a math test under different implicit activations, either of their women identity or of their Asian identity. While women performed better on the math test when their Asian identity was activated, they performed worse when their gender identity was activated. This was replicated more recently with a verbal test (Shih, Pittinsky, & Trahan, 2006).

However, if most studies were run on individuals with an enduring group membership, other studies have shown that a history of stigmatization was not always necessary for stereotype threat to appear (Leyens, Désert, Croizet, & Darcis, 2000). For example, Koenig and Eagly (2005) showed that the performance of men on a social sensitivity test was lower than that of women when the test was presented as diagnostic of this ability and when men were told that women generally succeeded better than men. In a more extreme test of this idea, Martiny, Roth, Jelenec, Steffens, and Croizet (2012) showed in a set of 3 studies that the deleterious effects of stereotype threat can also appear with totally newly created groups. Using a minimal group paradigm, the authors threatened their participants by telling them that members of their group (individuals who have a convex or a concave information processing style) usually perform less well on tests assessing this ability. Results showed that newly created group members underperformed when informed about the bad

reputation of their group (presented as a fact or as a suspicion) compared with non-threatened group members. This was especially the case of highly identified group members.

So, even if stereotype threat is a quite powerful phenomena that can impact performance of many members of stereotyped groups (e.g., women, Black and Hispanic Americans, low SES students) on many abilities (Beilock & McConnell, 2004; Chalabaev et al., 2013; Chateignier, Chekroun, Nugier, & Dutrévis, 2011; Hively & El-Alayli, 2014), those studies show that neither a history of stigmatization nor a well-grounded stereotype are necessary for stereotype effects to occur.

One of the reasons may be, as stated by value expectancy theory (Wigfield & Eccles, 2000), that the stereotype was partly endorsed and impacted the self-schemata and ability beliefs of the victims (Maass & Cadinu, 2003). If many stigmatized groups members do not have a low self-esteem because of their ability to cope effectively with identity threats (Crocker & Major, 1989), some group members can at times internalize the stereotype that is associated with their group or at least believe it is true for them. Several studies have shown that believing or endorsing a stereotype can be a handicap in coping with stereotype threat (Bonnot & Croizet, 2007a, 2007b; Chalabaev, Sarrazin, & Fontayne, 2009; Schmader, Johns, & Barquissau, 2004). However, because no studies to the best of our knowledge directly tested the impact of initial self-perceptions on the performance of people under stereotype threat, an explanation in terms of expectancies effects cannot be totally ruled out.

Stereotype threat and children

Research on stereotype threat and its deleterious effects on children performance is scarcer but nevertheless tend to show that students also can be the victims of stereotype threat from the age of 7 years old (Désert, Préaux, & Jund, 2009; Muzzatti & Agnoli, 2007; Neuville & Croizet, 2007). Only two studies reported stereotype threat effects with children as young as 5 (Ambady, Shih, Kim, & Pittinsky, 2001; Tomasetto, Alparone, & Cadinu, 2011). Among all those studies (for a review, see Ganley et al., 2013),

most were run on girls and performance in math (Huguet & Régner, 2007; Muzzatti & Agnoli, 2007). Only two studies concerned other abilities and groups. One concerned intellectual abilities of children from low SES backgrounds compared to high SES backgrounds (Désert et al., 2009) and the other one concerned the lower performance at school of boys compared to girls (Hartley & Sutton, 2013). None were run with another type of stereotyped group, which is our interest here. What about a less enduring group membership such as belonging to AC? Can a negative stereotype be associated with this specific group, at least in the context of school? Also, can students, newly members of this group, be conscious of such a belief toward them, and does this consciousness impact their self-perception? Finally, can this belief impact the performance of those who hold it?

As already stated by Galdi, Cadinu, and Tomasetto (2014) as well as other researchers, specific prerequisites are necessary for stereotype threat to impact performance of children. First of all, children must have developed an awareness of distinct categories, that is, they must be able to distinguish categories in their environment and to identify themselves as members of some of those categories. This is often the case by the age of 3 or 4 (Martin & Ruble, 2010). Moreover, they must be conscious that categories are associated with specific attributes and valence. This is the case by the age of 4 for main categories such as gender. However, refinements in the perception of groups such as the awareness of status differences are better understood by the age of 6 or 7 (Martin & Ruble, 2010). Moreover, it is important to distinguish between stereotypic beliefs (what they really think about groups: other groups - other-stereotype, or their own - self-stereotype) and stereotypic consciousness which corresponds to their awareness of the stereotypes held by others (i.e., meta-stereotype if it concerns beliefs toward one's own group). Stereotypic consciousness appears a little bit later than stereotypes, around 7, as it presupposes that the child is able to infer others' social beliefs (McKown & Weinstein, 2003).

This is coherent with what was found in the literature on stereotype threat run with children. Children, as young as 6, know the stereotype that is associated with their gender group or with

their socio-economic origin. For example, Désert et al. (2009) have shown that children as early as 6 years old believed that high SES children do better at school than low SES children. This was especially the case when the students were in an evaluative situation as this belief impacted performance. In a more recent study, Hartley and Sutton (2013) showed, using pictured scenarios, that children of both gender believed that girls were better at school than boys by the age of 7-8 years old. This belief increased with age. More interestingly, the authors showed that those children also developed by the age of 7 a meta-stereotype, reporting that adults believed that girls performed better at school than boys. When told that girls were better on tests, boys underperformed compared to girls. In the non-threatening condition, boys performed as well as girls. This study is interesting as it shows that by the age of 7, children can form stereotypes as well as meta-stereotypes and be impacted by them. It also showed, as with studies ran with adults, that a history of stigmatization is not necessary for stereotype threat effects to appear. However, as already mentioned, all those studies were run with enduring groups' memberships. Can children, as young as 7 years old, form specific beliefs about a newly formed group and can those beliefs be known and shared by the members of that group? If this is the case, can those beliefs be powerful enough to disrupt performance of children belonging to that group? These were the research questions of the present three studies.

More specifically, we tried to assess the self and meta-perceptions of students aged from 7 to 10 years old attending an adaptive course and to assess the self and other-perception of students attending a regular course (Study 1). We also explored whether those students attending adaptive courses were susceptible to stereotype threat (Study 2), over and above lower initial self-perceptions (Study 3). As mentioned, the impact of stereotype threat on performance could be due totally or partially to initial lower self-perceptions of children. Finally, Study 3 also aimed at testing the impact of stereotype threat and initial self-perceptions on post-task self-perceptions which, to our knowledge, has never been done before.

All studies were run in the children's school, thereby increasing ecological validity (Désert et al., 2009; Huguet & Régner, 2007). Perceptions were assessed during school time by the teacher about 3 months after the beginning of the school year and the experiments (induction of stereotype threat) were run individually in an adjacent room during school time by a female experimenter.

Study 1

In this Study, we explored the self-perceptions of students from Regular Classes (RC) and from Adapted Classes (AC), as well as the meta-perception of AC children and the other-perception of RC children. If, as suggested, RC children perceive their AC counterparts as being less able, their self-perception should be higher than their perception of AC children (Hypothesis 1). Additionally, if AC students are aware of their bad reputation, their meta-perception (how they think they are perceived by RC children) should match how RC students perceive them. If not, AC children's meta-perception should be more positive than the perception RC students hold about them (Hypothesis 2). Finally, if AC students agree with this bad reputation, their self-perception should be lower than that of RC children (Hypothesis 3) and meet their meta-perception.

Method

Participants and procedure

Participants were 104 elementary school students (53 girls, 51 boys, aged 7-10[1]) from a school in a low socio-economic area of the town. Their mean age was 8.36 years (SD=1.07). Among them, 61 were from a RC (31 girls, 30 boys; M_{age} =8.28, SD=0.92) and 43 from an AC (20 girls, 23 boys, M_{age}=8.49, SD=1.24). Among them, 37 were 2nd grade (M_{age}=7.41, SD=0.50), 42 from 3td grade (M_{age}=8.48, SD=0.67) and 25 from 4th grade (M_{age}=9.40, SD=0.50).

1. Three children were excluded from that sample because of their age. One was 6 years old, one 11 and the other 12. The youngest might have some trouble with answering the scale, the older ones because they were at least 2 years late on their normal course of studies.

Between two lessons, the teacher asked all her students to answer 7 questions taken from the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children of Harter and Pike (1984), using its regular assignment (*"How do you perceive yourself ?").* RC students were then invited to answer a second time the 7 items but with an other-perception assignment *("How do you think students of adapted classes are?"*). AC children were invited to answer these items with a meta-perception assignment *("How do you think students from normal classes perceive you?"*).

Measures

The Perceived Competence and Social Acceptance for Young Children of Harter and Pike (1984), translated and validated in French by Gobancé, Rosnet and Gillet (2014; see also Gobancé, 2009) was used to assess perceptions. This scale assesses self-esteem in a way that is adapted for young children (6-8 years old) through the use of pictures depicting children (boys or girls) performing tasks or actions. First, children were asked to choose which of the children from the 2 pictures, both depicting the same action, was most like him or her. The first picture depicted an action that was performed poorly and the other one the same action performed well. Once the child had chosen a picture, she/he was asked to choose between two circles, a small one meaning *"I'm quite like him/her"* and a big one meaning *"I'm really like him/her"*. Score were assessed using this 4-point rating scale.

Seven items were taken from this scale among the 22 possible items of the French version: 1 item concerned general knowledge, 2 concerned skills in math, 2 skills in writing and spelling, 1 skills in sports, and 1 concerned social acceptance. The same scale with the same format was used for all children.

An exploratory factorial analysis run on the measure showed two dimensions, one with the social competence item, the other with all the other items. So, the social competence item was deleted from subsequent analysis. After this deletion, alpha was equal to .63 for self-perception (all participants), .65 for other-perception (students from normal classes), and .71 for meta-perception (AC

students[2]). In addition, and with the agreement of children's parents, the teacher reported the type of class, the age and sex of each student.

Results

To test for our hypotheses and in order to make all the comparisons we needed, we ran a mixed ANOVA with class as a between factor (Regular Class *vs* Adapted Class) and perceptions as a repeated measure (self-perception *vs* perceptions of AC[3]). Results showed that this interaction was significant ($F[1, 102]=5.70$, $p<.02$, $\eta^2=.05$). We then ran a series of post-hoc analysis (Tukey HSD) to test for specific hypotheses.

To check whether RC students perceive their counterparts from AC as less able (Hypothesis 1), we compared self-perceptions of RC students to the perception they had of AC students. As shown in Table 1, results indicated that the self-perception of RC students was higher ($M=3.51$, $SD=.40$) than their perception of AC students ($M=2.14$, $SD=.56$, $p<.001$).

TABLE 1: Means and standard deviations for students' self-perceptions and perceptions of AC depending on their type of class (RC *vs* AC).

Self-perceptions		Perceptions of AC	
Regular Class	Adapted Class	Regular Class	Adapted Class
3.51	3.17	2.14	2.16
(0.40)	(0.66)	(0.57)	(0.70)

To examine whether AC students were aware of their bad reputation (Hypothesis 2), we compared their perception of AC (meta-perception) to RC students' perceptions of AC's students (other-perception). Results showed that the meta-perception of AC students did not differ from the other-perception of RC students. This suggests that AC students were aware of their bad reputation. To check whether AC students endorsed the negative view of their group membership, we compared their self-perceptions with those of RC students. Results showed that

2. Note that students completed the scales during class with their regular teacher, which might explain the low alphas. However, this was important because we did not want the students to think about it as an experiment (which might have impacted results of Study 2).

3. Which of course correspond for AC students to their meta-perception and for RC students to their other-perception.

self-perceptions of AC students were more negative than those of RC students ($p < .02$).

Finally, we also compared the self-perception and meta-perception of AC children. Results showed that they perceived themselves more positively than they thought they were perceived by RC's students ($p < .001$). So, if AC students have a lower self-perception of themselves than have RC students, this self-perception does not meet their meta-perception.

Discussion

The aim of this study was to see if a bad reputation was associated with children attending AC. More specifically, a first hypothesis stated that the way RC children perceive themselves would be much more positive than the way they perceive AC students. This was what we found. However, this can be partly due to in-group favoritism, which has been found among children as soon as the age of 5 (Dunham, Baron, & Carey, 2011), or to self-enhancement motives that often drive self-perceptions of adults (Dauenheimer, Stahlberg, Spreemann, & Sedikides, 2002; Sedikides & Alicke, 2012; Sedikides & Gregg, 2008) as well as children (Trzesniewski, Kinal, & Donnellan, 2011). Indeed, children as young as 4 often over predict their performance, past and future, even in the face of failure (Stipek & Mac Iver, 1989). This effect decreases with age (by 8-9 years old). They also overrate their own abilities compared to that of their peers, again, the difference between self and peer's rating decreasing with age (Stipek & Tannatt, 1984). Note that our results showed that the difference of perception was quite large. Moreover, our results also showed that the way RC students perceived AC students (other-perception) was equivalent to the way AC students thought they were perceived (meta-perception of AC students). So, even if self-enhancement motives might explain this difference between the self- and other-perceptions of RC students, AC students were conscious of being perceived negatively and this perception seemed quite correct in regard to what RC students thought of them.

Finally, our goal was to see if this bad reputation impacted the self-perception of AC students. Our results showed that they did perceived themselves more negatively than did RC students.

However, this self-perception did not meet their meta-perception. This means that they did not seem to have totally internalized their bad reputation yet, even if their initial self-perception was lower. However, this is difficult to conclude if AC students' lower self-perceptions were due to their membership to this lower status group or if they were lower to begin with. Research on stigmatization showed that not all lower status groups develop a lower self-esteem and many personal and situational factors can impact the self-esteem of children (Crocker & Major, 1989; Martinot & Audebert, 2003; Redersdorff & Martinot, 2009). More research is needed, using longitudinal design to test for the effect of the inclusion in those AC on the self-perceptions of children.

Study 2

The aim of study 2 was to explore if the bad reputation associated with attending to an AC can impact students' performance in a threatening situation, that is when a task is presented as a test (threat) instead of a game (no threat). Given that AC students seemed to be aware of their bad reputation and had a lower perception of themselves, they should perform less successfully when a task is presented as a test (i.e., as being relevant regarding their abilities) than when it is presented as a game (i.e., as irrelevant regarding their abilities).

Method

Participants and Procedure

Fifty seven elementary school students (33 girls, 29 boys, aged 7-10[4]) taken from the sample of Study 1 volunteered to take part on this experiment which took place 15 days after Study 1[5]. Their mean age was 8.68 years (SD=1.09). Among them, 29 were from a RC (15 girls, 14 boys, M_{age}=8.86, SD=1.06) and 28 were from an AC (14 girls, 14 boys, M_{age} =8.50, SD=1.11). Among them, 21 were in their 2nd grade, M_{age} =7.50, SD=0.51), 20 from 3rd grade (M_{age} =8.9, SD=0.49) and 16 from 4th grade (M_{age} =10, SD=0.00).

4. Five children were excluded for the same reasons as in Study 1. One was 12 years old, 4 were 11.

5. Only children who had a written consent from their parents were allowed to participate.

The experimenter (a woman) took children from classrooms to a little adjacent room and proposed them to play a game (non-threatening condition) or to take a test of their general abilities (threatening condition). After agreement, she showed them a memory game and asked them to perform it. The Memory® is a well-known card game in which pairs of cards (depicting objects or animals) are presented face down on a table[6]. The task consists in randomly flipping two cards and see if they match. If they do match, the cards are kept aside. If not, the cards are turned back over and two other cards must be flipped. All pairs have to be found as fast as possible. The game is over when all the pairs have been found. This game thus requires cognitive abilities such as concentration, observation and spatial memory. The more one is able to memorize cards, the faster he/she completes the game. After the experimental task, the experimenter praised and thanked children and sent them back to their classroom.

Measures

Performance. Performance was assessed via the time students took to completely perform the memory task (in seconds). It was assessed with a stop watch visible to the child. Additionally, the experimenter wrote children's class (RC or AC), sex and age.

Results

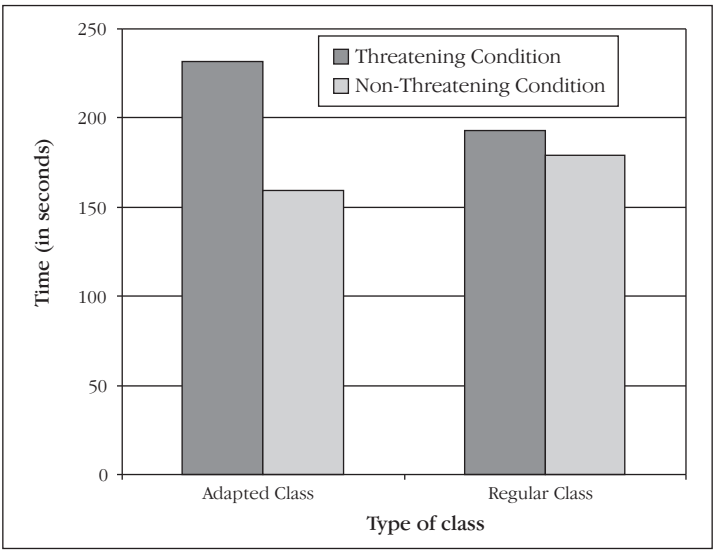
To test for stereotype threat effects on children's performance, an Ancova was run with the type of class (Regular *vs* Adapted) and condition (Game *vs* Test) as independent variables, time as the dependent variable, and age as a covariate. Results showed a significant effect of condition ($F[1, 52]=43.76, p<.001, \eta^2=.49$) . Students were faster when the task was presented as a game ($M_{second}=169.07$; $SD=18.92$) than when it was presented as a test ($M_{second}=211.07$; $SD=33.09$). Moreover, there was an interaction between the type of class and condition ($F[1, 52]=22.85, p<.001$,

6. This game was chosen for several reasons. First, it is a well-known game with well-known rules that do not necessitate particular explanation or specific skills to be understood. Second, it does not depend on prior knowledge and as such is less prone to be affected by age or class. Finally, it can be presented as a game (which it is) or as a test of abilities (which is believable since it requires abilities in concentration, memory and observation).

η^2=.30) as shown in Figure 1. This effect was still significant with age as a covariate (F[1, 52]=22.50, p<.001, η^2=.30).

As shown in Figure 1, AC students took more time to solve the task in the threatening condition (M_{second} = 231.40; SD = 37.97) than in the non-threatening condition (M_{second} =159.60; SD = 20.96; F[1, 52]=68.30, p<.001). RC students were a little slower in the threatening condition (M_{second} =196.30; SD = 11.93) than in the non-threatening one (M_{second} = 179.30; SD = 8.99), but this difference was not significant (F[1, 52]=2.63, p=.11). In addition, whereas AC students took more time to solve the task than RC students in the threatening condition (F[1, 52]=20.41, p<.001), the reverse was true in the non-threatening condition in which AC students took a little bit less time to solve the task than RC students (F[1, 52]=4.83, p<.04).

FIGURE 1: Effect of condition and type of class on performance (Study 2).



Discussion

The aim of this study was to test for stereotype threat effects on the performance of children from AC. As shown in Study 1, those students are victims of a bad reputation concerning their academic abilities, even if this group membership is temporary.

As a salient group associated with a bad reputation, we hypothesized that they should be vulnerable to stereotype threat. This is what we found. When asked to do a memory task in an evaluative setting (presented as a measure of their intellectual abilities), AC students took more time to resolve it than when the memory game was presented in a non-evaluative way, as a game.

This result is consistent with past literature on stereotype threat with children (Désert et al., 2009; Muzzatti & Agnoli, 2007; Neuville & Croizet, 2007), and adds to this literature another proof of the impact of a bad reputation on performance. Another alternative explanation, however, might be that AC children performed poorly simply because, as low achievers, they expected to fail. Indeed, the evaluative setting might have triggered specific expectations about future performance, based on their lack of past success and on their lower self-perceptions (Wigfield & Eccles, 2000). Because names were not reported between Study 1 and 2, we cannot test for this explanation. So, Study 3 aimed at replicating results of Study 2 and test for the impact of initial self-perceptions on performance of students under stereotype threat. It aimed also at testing if stereotype threat impacted post-task self-perceptions.

Study 3

We run Study 3 in two distinct phases, each separated by 15 days with a first phase during which we assessed self-perceptions of RC and AC students (self-perceptions at Time 1) and a second phase during which we asked them to take a test versus play a game and then assessed again self-perceptions (Time 2). As in Study 1, we hypothesized that self-perceptions of AC students (at Time 1) would be lower than those of RC students (Hypothesis 1). We also predicted that AC students would need more time to complete the task when it is presented as a test (threatening condition) than when it is presented as a game (non-threatening condition), while performance of RC students would not differ depending on how the task is presented (Hypothesis 2). We also predicted that AC students would perceive themselves after the task less positively in the threatening condition than in the non-threatening one (Steele, 1997). Self-perceptions of RC students

should not differ across conditions (Hypothesis 3). We also predicted that those effects of stereotype threat on performance and post self-perceptions should appear over and above the effect of initial self-perceptions.

Method

Participants and procedure

Participants of Phase 1 were 105 elementary school students (53 girls, 52 boys, aged 7-10[7]) from a school in a low socio-economic area of the town. Their mean age was 8.16 years (SD=0.92). Among them, 67 were from a RC (37 girls; M_{age} =8.13, SD=0.95) and 38 from an AC (16 girls, M_{age}=8.21, SD=0.87). Among them, 42 were 2nd grade (M_{age}=7.36, SD=0.53), 43 form 3td grade (M_{age}=8.44, SD=0.67) and 20 from 4th grade (M_{age}=9.25, SD=0.44).

Eighty eight students from Phase 1 (45 girls; aged 7-10; M_{age}=8.17, SD=0.96) participated to the experiment 15 days after and were assigned either to the threatening condition (N=43) or to the non-threatening condition (N=45). Among them, 54 were from a RC (30 girls; M_{age} =8.15, SD=1) and 34 from an AC (15 girls; M_{age}=8.21, SD=0.91).

During Phase 1, as in Study 1, self-perceptions were assessed by the teacher during school time; names, age and class were reported[8]. During Phase 2 which took place 15 days after Phase 1, the experimenter came to the classes and, as in Study 2, took the children in an adjacent room to ask them to take a memory task presented either as a game (non-threatening condition) or as a test of abilities (threatening condition)[9]. After the task, the experimenter asked children to complete the same self-perception measures as in Phase 1.

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7. As in Study 1, 4 children were excluded from that sample because of their age. One was 6 years old, 3 were 11.

8. Names were collected in order to match students' self-perceptions with performance. They were deleted afterward from the database.

9. Only children who had their parental authorization filled and were present during Phase 1 participated to the experiment.

Measures

Self-perceptions. Self-perceptions (at Times 1 and 2) were assessed in the same way as in Study 1 but only with the 5 items of the academic subscale of the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (Harter & Pike, 1984) to capture perceptions linked to the academic domain. Alphas were .61 at Time 1 (collective) and .74 at Time 2 (individual).

Performance. Performance was assessed via the time students took to completely perform the memory task (in seconds). Additionally, the experimenter wrote children's name, class (RC or AC), sex and age.

Results

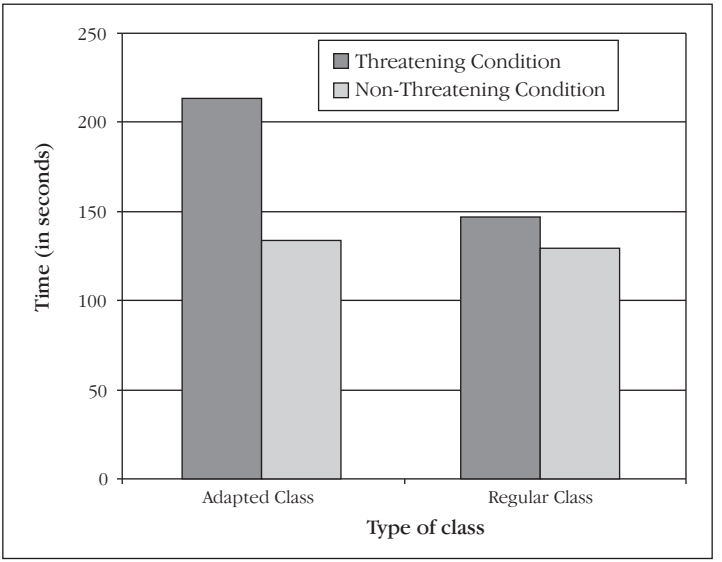
To test for hypothesis 1, we compared RC students' self-perceptions with those of AC students (at Time 1), while controlling for students' age. Results showed that RC students reported higher self-perceptions students (M=3.58, SD=.38) than did AC students (M=2.88, SD=.51, F[1, 102]=63.26, p<.001, η^2=.38).

To test for hypothesis 2, we ran an Ancova with the type of class (Regular *vs* Adapted) and condition (Game *vs* Test) as independent variables, Time as a dependent variable and age as a covariate. Results showed a significant effect of condition (F[1, 83]=69.61, p<.001, η^2=.46). Students were faster when the task was presented as a game (M_{second} =130.1; SD=26.05) than when it was presented as a test (M_{second} =177.7; SD=40.79. Results also showed a significant effect of the type of class (F[1, 83]=38.98, p<.001, η^2=.32). RC students were faster M_{second} =136.5; SD=27.10) than AC students (M_{second} =180.1; SD=46.37). More importantly, there was a significant interaction effect between the type of class and condition (F[1, 83]=28.45, p<.001, η^2=.26). As shown in Figure 2, AC students took more time to solve the task in the threatening condition (M_{second} = 212.65; SD = 30.18) than in the non-threatening condition (M_{second} =133.50; SD = 12.62; F[1, 83]=79.44, p<.001). This was also the case, although in a lesser extent, of RC students (respectively for the threatening and the non-threatening conditions, M_{second} =147.22; SD = 17.54 and

M_{second} = 128.55; *SD* = 30.30; $F[1, 83]=5.90, p<.02$). In addition, whereas AC students took more time to solve the task than RC students in the threatening condition ($F[1, 83]=69.69, p<.001$), time was equivalent between AC and RC students in the non-threatening condition ($F<1$).

Finally, results showed that this interaction was still significant after initial self-perceptions were entered as a covariate ($F[1, 82]=28.29, p<.001, \eta^2=.26$).

FIGURE 2:
Effects of condition and type of class on performance (Study 3).



To test for hypothesis 3, we ran again a mixed Anova with the type of class (Regular *vs* Adapted) and condition (Game *vs* Test) as independent variables, and self-perceptions at Time 1 and 2 as the dependent variables. Results showed a significant effect of Time ($F[1, 84]=56.10, p<.001, \eta^2=.40$). Self-perceptions of students were lower at Time 2 (M =3.06; SD=0.65) than at Time 1 (M=3.35; SD=.49). Results also showed a significant interaction between Time and the Type of Class ($F[1, 84]=8.48, p<.01, \eta^2=.09$). If self-perceptions of AC students at Time 1 (M =2.95; SD=0.39) were lower than those of RC students (M= 3.60; SD = 0.37; $F[1, 84]=13.64, p<.001$), this difference between AC (M

=2.44; *SD*=0.46) and RC students (*M* =3.44; *SD*=0.47) was larger at Time 2 ($F[1, 84]=43.92$, $p<.001$). Additionally, results showed a significant interaction between Time and Condition ($F[1, 84]=52.48$, $p<.001$, $\eta^2=.39$). While self-perceptions of students did not differ according to Condition at Time 1 ($F<1$), they were at Time 2 lower in the threatening condition (*M* =2.66; *SD*=0.55) than in the non-threatening one (*M* =3.44; *SD*=0.47). Finally, the interaction between Time, Type of Class and Condition was not significant suggesting that the decrease in students self-perceptions at Time 2 was mostly due to the evaluative component of the threatening condition and not to stereotype threat effects.

Discussion

The aim of this study was to replicate results of Study 2 and also to disentangle stereotype threat effects from an alternative explanation in terms of motivational expectancies. The effects of stereotype threat on performance were replicated, and were still visible after initial self-perceptions were kept constant, suggesting again the power of stereotype threat and ruling out an explanation in terms of expectancy effects. Note that if predicted by the literature, the effect of self-perceptions or self-esteem on performance when under stereotype threat had rarely been tested. The only study we are aware of did not show any impact of self-esteem on performance when under threat. However, as the authors assessed self-esteem just before the manipulation, self-esteem might have served as a buffer and reduced the impact of threat (Rydell & Boucher, 2010). This is not the case in our study that assessed initial self-perceptions 15 days before. No relation could have been made between the two evaluations.

Finally, our results showed an impact of stereotype threat on post-task self-perceptions, but this effect, even if a little bit higher for AC students, also appeared for RC students suggesting an effect due to the immediate evaluative situation. Also, our results showed that the effect disappeared when initial self-perceptions were kept constant. Initial self-perceptions explained post-task self-perceptions.

General Discussion

The aims of the present studies were to investigate if a bad reputation was associated to students attending AC, if this bad reputation was known by those students and if it was somewhat internalized (Study 1). It was also to investigate the impact of stereotype threat on performance (Studies 2 and 3) and post-task self-perceptions (Study 3) and to test which of the threat induced by the situation or the expectancy effects due to initial self-perceptions could explain the performance decrement. No studies to our knowledge explored the effect of stereotype threat on performance and post-task self-perceptions while assessing initial self-perceptions.

Our results were broadly consistent with past research. Even such small and circumscribed groups as are the AC can be rapidly associated with a bad reputation. This appeared as young as 7 years old, that is for students who have never entered those programs before and who have just entered a new school (pre-schools and elementary schools are often different schools or are at least physically separated in France). RC students identified AC students easily and already seemed to have a specific perception of them. Moreover, those beliefs seemed to be widely shared as victims of this bad reputation were aware of them.

Our results also showed that AC students had lower self-perceptions than those of RC students. Does this mean that AC students have already internalized the bad reputation of their group? Our data cannot definitely answer this question. Indeed, even if the AC program is probably new for students, they entered it because of their learning difficulties in some academic subjects. It is thus likely that these students already have a history of low achievement, even if this history is a short one (for a review, see Monteil & Huguet, 2001), which impacted their self-perceptions. More research is needed to disentangle the impact of academic history from the effects of membership to such a group on self-perceptions.

However, being part of an adapted class is not without consequences. Indeed, our results showed that belonging to those AC impacted students' performance on a task presented as assessing

their intellectual abilities. When it was presented as a game, no performance differences emerged, what is classically found in the literature on stereotype threat. Therefore, the problem is not so much students' abilities level, but rather the way the task is presented. Given that evaluations are more and more explicit as students go from pre-school to elementary school, such a phenomenon is likely to be repeated over time. However and hopefully, the impact of stereotype threat was not explained by initial self-perceptions. This means that if a past history of under-achievement and/or membership to an adapted class can negatively impact self-perceptions, they do not seem to reinforce the effects of stereotype threat.

However, initial self-perceptions seemed to reinforce the impact of an evaluative situation on post-task self-perceptions as the self-perceptions of AC students lowered more than those of RC students. Evaluative situations, even if regularly used to assess progress, may be stressful for young children, especially if they occur outside their regular context. Further studies are needed to explore more fully the respective impact of initial self-conceptions of abilities and situational cues on subsequent self-perceptions.

The present studies contributed to the literature on stereotype threat, enlarging it to another group and to another stereotype, as suggested by the knowledge children have of the bad reputation associated with being part of an adapted class. They also showed that even a short term group membership can have deleterious effects (Martiny et al., 2012) and that initial self-perceptions do not explain the impact of stereotype threat on performance. However, those studies are not without limitations. The first one is the lack of measure of initial meta-perceptions before the stereotype threat induction (Study 3). Moreover, a better measure is needed to assess perceptions and stereotypes. Our choice was motivated by very practical reasons. The first was to use the same measures for all children. If a pictorial measure may be quite adapted for 7 or 8 years old children, it may appear quite childish for older children. The second was to avoid any link between measures captured at Phase 1 and the experiment conducted at Phase 2. We chose to ask students to complete self-

perception measures during class and ask an experimenter to run the experiment. This had the disadvantage to imply a collective session not favourable to validity concerns.

In conclusion, our three studies showed again the power of stereotype threat. However it raised other questions, in particular about the impact of the AC on self-perceptions of students and also about the extent to which stereotype threat can impact subsequent self-perceptions. Longitudinal studies would be more appropriate, with measures of self-perceptions taken at the beginning of the school year and a follow-up of children during the year.

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