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French-Arab students and verbal intellectual performance: Do they really suffer from a negative intellectual stereotype?

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Stigmatized group membership leads to deleterious consequences for individuals. More specifically, according to stereotype threat literature, the awareness of negative intellectual stereotypes can impair stereotyped group members' performance. Based on this framework, two studies were designed to explain the lower grades obtained by French-Arab students, compared to French students. An Implicit Association Test (Study 1) revealed that native French students automatically expressed a negative stereotype regarding French-Arab students' intellectual abilities. The second study (Study 2) examined whether this negative stereotype could alter French-Arab students' intellectual performance in a threatening context. As expected, French-Arab students underperformed when the verbal task was presented as a measure of intellectual ability, compared to French students. When the task was presented as non-diagnostic, their performance equaled that of French students. The discussion herein addressed implications of these results in terms of discrimination against the French-Arab population.

Educational research (International Program of The Organization for Collaboration and Economic Development, 2003) indicates that the children of immigrants demonstrate a predisposition to study that is equal to that of their classmates coming from non-immigrant

populations but express higher levels of interest and motivation for school. Yet, these same students achieve lower results in important school subjects, such as mathematics and sciences (Levels & Dronkers, 2006; OECD PISA, 2003). Similarly, "L'Observatoire des Inégalités"[1] (2007), has denounced the under-representation of children of immigrants in the more prestigious fields of study.

Many factors can explain such differences. According to classical analyses, socioeconomic and cultural factors could be responsible for such differences (Dronkers & Levels, 2007; Observatoire des Inégalités, 2007) as these factors imply a difficult adaptation to school through poorer language comprehension and integration, resulting in lower access to education. Nevertheless, data indicate that, even when these factors are controlled, the results of children of immigrants remain low (OECD PISA, 2003). Another explanation that could partly account for the academic underachievement of the foreign population traditionally focuses on the idea that the stereotypes about some groups' abilities impact their performance (Steele, 1992, 1997; Steele & Aronson, 1995). However, no research exploring this aspect in France could be identified. Thus, the present research seeks to address this hypothesis by highlighting the existence of an intellectual inferiority stereotype concerning French-Arab students as well as its consequences on their performance.

Stereotype threat effect

According to social psychology literature, the suspicion of inferiority that French-Arab pupils face during their schooling may reduce their performance at school. This suspicion of inferiority emanates from the reactions of other people and reflects socially shared beliefs concerning the personal characteristics and behaviors of a group of persons (i.e., stereotypes) (Lippman, 1922). Such beliefs are automatically generalized to all members of the group without considering that they could be inaccurate or that the individual does not conform to the stereotypes of his or her group (Devine, 1989).

Stereotypes can impact individuals' performance in a variety of ways. One part of the literature shows that stigmatized individuals may internalize the stereotype of their social group and, as a consequence, conform to its characteristics (Allport, 1954; Bonnot & Croizet, 2007; Eccles-Parsons et al., 1983; Goffman, 1963). Other works highlight that the knowledge of these stereotypes is a sufficient condition to observe negative consequences on individuals' achievement (Crocker, Major, & Steele, 1998; Rosenthal & Jacobson, 1968; Steele, 1992; 1997). Stereotype threat theory largely contributes to this second line of research.

The stereotype threat is a situational threat that refers to the anxiety of the stigmatized individuals to conform, confirm, or be assessed to a negative stereotype concerning their group (Steele, 1997). According to Steele (1997), when a negative stereotype concerning a group is salient, members of this group are preoccupied by the fact that their performance could confirm the validity of this stereotype, adding an additional load to the pressure of the test (Cadinu, Maass, Rosabianca, & Kiesner, 2005; Croizet, Després, Gauzins, Huguet, Leyens, & Méot, 2004; Schmader & Johns, 2003). Interference generated by this risk could affect the cognitive functioning of the individuals and provoke a reduction in performance. As such, awareness of stereotypes could be responsible for the lower performances of stigmatized group members. If knowing stereotypes exist is enough to observe stereotype threat effect, other works show that stereotype endorsement increases this effect (Schmader, Johns, & Barquissau, 2004) but is not necessary for its emergence (Aronson, Lustina, Good, Keough, Steele, & Brown, 1999; Leyens, Désert, Croizet, & Darcis, 2000; Marx, Brown, & Steele, 1999; Steele, Spencer, & Aronson, 2002; Stone, Lynch, Sjomeling, & Darley, 1999).

As mentioned by Croizet, Claire, and Dutrévis (2002), schools or academical settings are especially favourable to the development and occurrence of intellectual inferiority stereotypes and their consequences. In fact, evaluative situations often occur in such context, further revealing a broad gap among groups. For students who are not members of stigmatized

groups, evaluation results in the usual pressure stemming from the risk of receiving bad grades. Moreover, when students are the target of a positive stereotype, such pressure can even be beneficial on their performance (i.e., stereotype lift effect, Walton & Cohen, 2003). Meanwhile, for students who are members of stigmatized groups, the threat of confirming a negative stereotype constitutes an extra pressure when they are in an evaluative situation.

Steele and Aronson (1995) demonstrated this increased pressure in a study testing the stereotype threat hypothesis, focusing on the American Black population – a strongly stigmatized group in the United States. The authors asked White and Black students to complete a test of verbal aptitude adapted from the Graduate Record Examination (GRE) (House & Johnson, 2002); half of the students received the GRE as a test of verbal abilities (diagnostic of intellectual abilities) while the other half received it as a laboratory task designed to promote better understanding of factors implicated in reasoning, thus not measuring verbal aptitude (not diagnostic of intellectual abilities). The researchers' primary hypothesis stated that, if African-American students carry out an intellectual task, they will be faced with a threat to confirm a negative stereotype conveyed in American society concerning their intellectual abilities and competences. This confrontation with the stereotype would result in decreased performance. In line with this hypothesis, the results showed that the diagnostic condition led to a performance drop among African-American, compared to White American. The White students' performance was not affected by the experimental condition. As a matter of fact, in the non-diagnostic condition, both Black and White American students performed at the same level when previous SAT scores were controlled for. Similar findings have been found among other stigmatized social groups, such as students from low socioeconomic background (Croizet & Claire, 1998; Croizet & Dutrévis, 2004), and women in mathematics (Ambady, Shih, Kim, & Pittinsky, 2001; Bonnot & Croizet, 2007; Huguet & Régner, 2007; Spencer, Steele, & Quinn, 1999).

In the current research, we suggest that a similar stereotype threat occurs among French-Arab students in France. If this population is targeted by a negative stereotype about its intellectual abilities, the stereotype threat situation could be an explanation of student's low performances at school.

Stereotype of French-Arab students' intellectual level

For many years, social psychologists have broadly studied racial stereotypes. The numerous works on this topic demonstrate the existence of ethnic stereotypes dealing with different origins and applying to various domains. In 1995, Devine and Elliot referred to Katz and Braly's work (1933) in order to measure the actual anchoring of the racial stereotypes toward Blacks in the United States. By measuring stereotypes and personal beliefs of 147 White students, the authors showed that – since the study of Katz and Braly – the presence of a certain number of stereotypes regarding the Black population remains significantly marked – namely, that they are less clever, louder, and more hostile and have a stronger tendency for crime than the White population (see also Karlins, Coffman, & Walters, 1969). Similarly, Akrami, Ekehammar, and Araya (2000), using the Modern Racial Prejudice Scale, highlighted the presence of racial stereotypes against immigrant populations in Sweden.

In France, although the Arab immigrant population constitutes 2.22% of the total French population (according to the 1999 census, INSEE, 2005) and the French population originally from North-Africa constitutes obviously a more important part of this total population, social psychology literature lacks empirical data about this ethnic minority in the school domain. Only a few studies have dealt with the French-Arab stereotype (Dambrun & Guimond, 2003, 2004; Lacassagne, Sales-Wuillemin, Castel, & Jebrane, 2001). Lacassagne and her colleagues (2001) used a method of verbal associations to highlight cases of stereotypes and ethnic discrimination among French people. The results indicated the existence of negative stereotypes regarding the French Arabs (for instance, they were perceived as "aggressive",

"rejected", "poor"), but no results pointed to a specific stereotype of negative intellectual inferiority. Considering that the observed differences in school success between French-Arab students and French students might partly be explained by a stereotype threat phenomenon, an intellectual inferiority stereotype may exist and the French-Arab targets may be aware of this. Thus, before testing stereotype threat effect among French-Arab students, the first question for the current research deals with the existence of a negative intellectual inferiority stereotype concerning the French-Arab population.

Measuring stereotypes

The evaluation of an ethnical outgroup implies a dual process. In such a situation, an individual has to deal with two types of evaluations of the same object (Devine, 1989; Wilson, Lindsey, & Schooler, 2000). The first one, based on stereotypes, is an automatic process that implies a spontaneous and unintentional activation of well-learned answers. This type of answer appears without any conscious effort and in spite of any determination to ignore it (Neely, 1977; Shiffrin & Dumais, 1981). The second one implies controlled processes, including the individual belief of the value individuals give to social stereotypes. These latter processes are more flexible than the automatic ones and typically provoke some socially desirable answers that contradict the stereotype (Dambrun & Guimond, 2003, 2004; Fazio & Olson, 2003; Greenwald, McGhee, & Schwartz, 1998; Nisbett & Wilson, 1977). Consequently, it is difficult to truly demonstrate the existence of racial stereotypes.

The use of implicit measures of attitudes may be useful in showing the existence of negative stereotypes about the ability of French-Arabs. The more frequently used implicit measure in studying racial prejudice is the Implicit Association Test (IAT) proposed and developed by Greenwald and his collaborators (1998; see Fiedler, Messner, & Bluemke, 2006, for a complete discussion of this measure). This procedure points out the existence of stereotypes revealed by individuals' implicit attitudes.

The current studies

The goal of the present article is to document that the French-Arab population in France suffers from a negative stereotype concerning their intellectual ability and to show that this stereotype can negatively affect their intellectual performance.

The first study, following Greenwald et al. (1998), used an IAT to show that a stereotypic reputation of intellectual inferiority – targeting the French-Arab population – does exist. This task assumes that, when two concepts are associated (like "French" and "intelligent"), it will be easier to categorize them when they share the same answer key than when they imply different answer keys (like "French" and "stupid"). The participants were asked to associate, as quickly as they could, typically French and French-Arab first names with some adjectives that are positively or negatively related to intelligence. The expectation was that the association of French first names and positive adjectives would occur more quickly than the association between French-Arab first names and the same positive adjectives. The subsequent study attempted to provide evidence to support the stereotype threat hypothesis in French-Arab students in a situation in which their intellectual abilities were supposed to be tested (Steele & Aronson, 1995). In this context, the expectation was that the stereotype threat situation (i.e., a situation presented as a test diagnostic of intellectual abilities) would decrease French-Arab students' performance compared to a non-diagnostic situation, and compared to French students' performance regardless of the situation (i.e., diagnostic or not).

STUDY 1

Method

Participants

Forty-nine undergraduate students in psychology at Paris-West University (33 women and 16 men) voluntarily participated in the study. Their mean age was 20.57 (*SD*=1.68). All participants were of French nationality, and they all had native French parents.

Material and procedure

Participants were individually seated at a table with a desktop computer in a room of the psychology laboratory. They were informed that the purpose of the study was to complete a word-name categorization task. They received all instructions from the computer display. The IAT used a sequence of seven blocks (see Figure 1). Category labels remained on the screen during each block. Participants provided all of their responses via the computer keyboard by pressing the key associated with each category.

Bloc	1	2	3	4	5	6	7
Description	First Name French/ French-Arab	Attributes positive/ negative	Combinaison First Name/ attributes (training)	Combinaison First Name attributes (test)	Attributes positive/ negative	Combinaison First Name/ attributes (training)	Combinaison First Name/ attributes (test)
Instructions	French ● ● French-Arab	Positive ● ● Negative	French ● Positive ● ● French-Arab ● Negative	French Positive ● French-Arab ● Negative	Positive ● ● Negative	French ● ● Positive ● French-Arab Negative ●	French ● ● Positive ● French-Arab Negative ●
Number of items	40	40	20	40	40	20	40

Figure 1. Description of implicit association task in Study 1

Note. Circles corresponde to the answering key.

The task used 4 lists of 10 words; 2 lists with first names – one of 10 French first names and one of 10 Arab first names[2] – and 2 lists of traits – one of 10 traits positively associated with intelligence and one of 10 traits negatively associated with intelligence[3].

In the first block (block 1), first names appeared on the screen; participants had to indicate whether each first name was French or Arab. In the second block (block 2), traits appeared on the screen; participants had to indicate whether each trait was positively or negatively related to intelligence. Blocks 3 (*practising*) and 4 combined the categories of blocks 1 and 2 to create the *first test session*. Items displayed on the screen were either first names or traits. Participants had to press the same key for the responses *French first name* and *Positive trait* and another key for the answers *Arab first name* and *Negative trait*. Block 5 was similar to block 2, except that the answer keys were reversed. Blocks 6 (*practising*) and block 7 comprised the *second test session*. As in blocks 3 and 4, blocks 6 and 7 combined first names and traits. However, the combinations were inverted: the same key was associated with responses to *Arab first name* and *Positive trait*, and another key was associated with responses to *French first name* and *Negative trait*. In blocks 1, 2, 4, 5, and 7, each participant received

40 items (first names or traits). In blocks 3 and 6, each participant received 20 items. Combinations of the first and second test sessions were counter-balanced.

Finally, participants provided demographic informations (including their age, sex, ethnic origin, and academic level). Participants were then debriefed about the purpose of the study.

Results and discussion

Data analyses were conducted according to Greenwald, Nosek, and Banaji's (2003) suggestions. Compared to the initial scoring conventions, this new scoring algorithm incorporated data from practice trials and took into account variability in individual latencies. As the analyses did not reveal differences according to the order of the different blocks, we present overall results. Moreover, as sex of the participants had no effect, the results of women and men will be presented together.

The hypothesis suggested that the IAT would point out a negative intellectual stereotype against Arabs. The results support this hypothesis. Participants answered faster when the same key was associated with either a French first name or a positive trait and another key was associated with either an Arab first name or a negative trait (M=992.07; SD=193.68), than for the reverse combination (M=1379.69; SD=324.19), $F(1,48)=106.34$, $p<.001$, $\eta^2=.69$[4]. These results mean that the participants significantly and more strongly associated "French" with "intelligent" than "Arab" with "intelligent". As predicted, these results provide evidence supporting the existence of a negative intellectual stereotype associated with Arabs among French students. This first study confirms that, in an automatic way, to be intelligent is more specific to "Pierre", i.e., a typical French name than to "Abdel", i.e., a typical French-Arab name.

The second study will examine the effect of this negative stereotype on intellectual performances of French-Arab students in a context presented as evaluative of intellectual abilities. First, a pre-test will be conducted to differentiate – with an explicit measure – the knowledge and endorsement of this negative stereotype about Arabs by both French and Arab students (Croizet et al., 2004). Study 2 will then seek to test the consequences of a stereotype threat situation for French-Arabs students.

STUDY 2

Pretest: Method

Participants

Forty French-Arab (N=20) and French students (N=20) at the University of Paris-West (M_{age}=20.30, SD=2.21) volunteered to participate in this pre-test. All participants were born in France; however, some were categorized as French-Arab students when at least one of their parents was born in a North-African country (i.e., Morocco, Tunisia, or Algeria). The sample comprised 26 women and 14 men; as no effect of gender was found on the dependant variables[5], the results of both women and men will be presented together.

Material and procedure

Four questions aimed at assessing participants' knowledge of the stereotype (Croizet et al., 2004). Participants rated the extent to which they agreed with the following items: "In

general, people think that French students are hard workers", "In general, people think that French-Arab students are intelligent", "In general, people think that French students are motivated by school" and "In general, people think that French- Arab students master the French language".

Participants then reported their personal opinion about the same four stereotypical dimensions by answering items such as "In my opinion, I think that French students are hard workers". Responses to all questions were made on 7-point scales ranging from (1) *do not agree at all* to (7) *absolutely agree*. At the end of the questionnaire, participants were asked to indicate their age, sex, place of birth, and academic level.

Pretest: Results and discussion

We submitted the four stereotypical dimension items to a 2 (Ethnicity of Target) by 2 (Ethnicity of Participants) mixed design ANOVA, with Ethnicity of Target as within subject, for knowledge of stereotype on the one hand and stereotype endorsement on the other hand.

The results revealed that participants were aware of the existence of the negative stereotypes associated with French-Arab students. Thus, participants reported that people in general thought that French-Arab students are less likely to be "hard workers" (M=3.53 *vs.* M=4.5, $F(1,38)=11.56$, p=.001, η^2=.23), less "intelligent" (M=3.75 *vs.* M=4.5, $F(1,38)=9.23$, p=.005, η^2=.19), and had a worse "mastery of French language" (M=3.60 *vs.* M=5.15, $F(1,38)=22.28$, p=.001, η^2=.37) than French students. There was no significant difference for the item "motivated" (M=4.10 *vs.* M=4.53, $F(1,38)=2.02$, p=.15). No effects were moderated by the participants' ethnicity (all ps>.44).

The analysis also revealed that, although the participants were familiar with the stereotypes, they did not endorse them. Participants indeed tended to agree with the fact that French-Arab students are more likely to be "hard workers" (M=5.48) than French students (M=5.13), $F(1,38)=3.15$, p=.10, η^2=.08. Moreover, French-Arab students were considered to be as intelligent (respectively M=5.48 and M=5.38, F<1) and motivated (M=5.60 *vs.* M=5.30, $F(1,38)=1.95$ p=*.16,* as French students were. These results did not differ according to participants' ethnicity (all ps>.48). However, participants endorsed the stereotype that French-Arab students master less French language than French students do (M=4.93 *vs.* M=5.80, $F(1,38)=20.36$, p=.001, η^2=.35). This effect was qualified by a significant interaction effect ($F(1,38)=4.80$, p<.05, η^2=.11). French-Arab participants endorsed the stereotype to a greater extent (M=5.95 *vs.* M=4.65) than French participants did (M=5 .20 *vs.* M=5.65).

The results of this pretest clearly indicate that students, regardless of their ethnicity, are well aware of the negative stereotypes associated with French-Arab students, who are described as less likely to be hard workers, less intelligent, and having less mastery of the French language than French students. However, when students give their personal opinion about French-Arab and French students' intellectual abilities, no difference remains, except for mastering French language. Taken together, these results support the applicability of a stereotype of intellectual inferiority against the French-Arab student population. Consequently, the necessary conditions under which the stereotype threat occurs are met.

Main study: Method

Participants

One hundred French psychology students (96 females and 4 males) at the University of Paris-West voluntarily participated in the study. The average age of participants was 21.33 years (SD=4.09). All participants were born in France. Half of them were French-Arab students according to the same criterion used in the pre-test (i.e., at least one of their parents

was born in a North-African country), and half were native French students. As there was no effect of gender on the dependant variables, the results from women and men will be presented together.

Procedure

The task was administered in a real classroom setting. Half of the participants were informed that they would perform a difficult task that would involve measuring their verbal intellectual abilities (diagnostic condition). The experimenter emphasized the fact that their scores will reliably reflect their level of intelligence and that he would notify them of their level after the completion of the test ("The present study aims to elaborate a new psychological test that measures intellectual abilities involved in reading comprehension. It is a verbal intelligence task. In particular, this test examines your abilities in the frame of reading comprehension. You will answer to several exercises in a limited time. After we analyze the results, your performance – which will inform you of your intellectual abilities – will be communicated to you."). For the other half of the participants, the task was presented as a difficult task in that the purpose was to elaborate upon certain materials for further research on the cognitive psychology of memory (non-diagnostic condition). The experimenter emphasized the concerns of the future research ("The present study aims to elaborate upon certain linguistic materials that will be used in experiments of cognitive psychology concerning the functioning of lexical memory. This material will be used to study the different levels of perceptual representation and processes in lexical access. You will answer several exercises in a limited time. While it is not the aim of this study, after we analyze the results and if you request it, we will be able to communicate your performance to you.").

Participants were encouraged to remain silent while completing the questionnaire and attentively read and respect the instructions. After completing the task, participants were required to fill out the demographic information questionnaire (i.e., age, sex, place of birth, places of birth of their mother and father, academic level). They were then debriefed and thanked for their participation.

Verbal intelligence task

This task was extracted from the verbal section of the GRE (Educational Testing Service, 1999; House & Johnson, 2002), which is generally used in stereotype threat studies (Croizet & Claire, 1998; Croizet & Dutrévis, 2004). The task consisted of 20 difficult items, each with 5 possible answers. Participants had to choose the pair of words in the list that best represented the same relation expressed by the two words presented. Participants had 10 minutes to answer all 20 items and were provided with an example before beginning the task.

Results

To compare the conditions, an index of verbal intellectual performance was created by summing the absolute number of verbal GRE items correctly solved (as in Aronson et al., 1999). The ANOVA 2 (Participant's Ethnicity: French *vs.* French-Arab) by 2 (Task's presentation: Diagnostic *vs.* Non-Diagnostic) conducted on the number of correct items revealed no main effect of the intellectual characterization of the task: $F(1,96)=1.83$, *ns*. However, a main effect of ethnicity emerged – $F(1,96)=11.57$, $p<.001$, $\eta^2=.10$ – such as French-Arab students ($M=7.66$, $SD=2.73$) succeeded globally less often than French students ($M=9.52$, $SD=2.85$). However, this main effect was qualified by a reliable interaction, $F(1,96)=4.35$, $p<.04$, $\eta^2=.04$. The condition means are presented in Table 1.

Table 1

Number of Verbal GRE items correctly solved as a function of students' group ethnicity and characterization of the task. Standard deviations are in parentheses

	Intellectual characterization of the task (test description)	
Student's ethnicity	*Non-diagnostic*	*Diagnostic*
French	9.32 (2.79)[a]	9.72 (2.95)[a]
French Arab	8.6 (2.41)[a]	6.72 (2.75)[b]

Note. Means in the same row that do not share the same subscribe differ at $p<.05$, two-tailed.

As expected, planned contrasts revealed that French-Arab students answered more questions correctly under non-diagnostic conditions than under diagnostic conditions, $t(96)=-2.43$, $p<.02$, $d=-.50$, $r^2=.06$. Moreover, under diagnostic conditions, French students achieved significantly higher scores than French-Arab students, $t(96)=-3.88$, $p<.001$, $d=-.79$, $r^2=.12$. This group difference was eliminated in the non-diagnostic conditions, $t<1$, $d=-.19$, $r^2=.008$. A fourth contrast was run to test for a stereotype lift effect. The result showed that, among French students, no significant differences emerged between the diagnostic condition and the non-diagnostic condition, $t<1$, $d=.17$, $r^2=.006$. These results are all replicated on accuracy[6] (i.e., index of intellectual performance corrected for guessing and based on the number of attempted items).

Discussion of Study 2

French-Arab participants were predicted to be negatively affected by the negative stereotypes concerning their intellectual abilities, especially under the threatening condition. The results clearly support this prediction in demonstrating that French-Arab students failed the GRE test compared to other students, particularly when the test was introduced as diagnostic of intellectual abilities. Congruent with Steele and Aronson (1995), this result also confirms that the mere modification of test description (in regards to whether it is diagnostic of intellectual abilities or not) is sufficient to modify the performance of individuals based on whether they are stigmatized people in the intellectual dimension or not. Thus, when the task was introduced as a standardized measure of intelligence, French-Arab students had a lower performance than all others[7] and subsequently failed to contradict the negative stereotype associated with their ethnic group. When the task was introduced as linguistic materials, French-Arab students performed as well as all others and subsequently succeed to undermine the negative stereotype associated with their ethnic group.

General discussion

Despite the growing number of French-Arab students in French universities, little research in social psychology has been devoted to the situation of this ethnic minority group. As revealed by the statistics presented herein, French-Arab students seem to encounter certain barriers in their scholastic and academic achievement. As such, the hypothesis emerged that the stigmatization against French-Arab individuals could contribute to explaining these difficulties. Two studies designed to address this question were conducted.

The first study measured the stereotype related to French-Arab students' intellectual abilities. As explicit measures of ethnic stereotypes might be biased by social desirability, an implicit measure was used. The IAT revealed that French-Arab students are negatively stereotyped regarding their intellectual abilities. The second study focused on the susceptibility of French-Arab students to stereotype threat effects. As expected, French-Arab students underperformed when compared to French students on a verbal task introduced as a diagnostic

measure of intelligence. When the same task was presented as a non-diagnostic task, their performance was the same as the French students' one. These two studies confirm that French-Arab students can be confronted with frequent situations of stigmatization. They have to cope with a negative intellectual stereotype (cf. Study 1) that may partly explain their academic underachievement (cf. Study 2). These two experiments undoubtedly produce encouraging findings. However, some limitations as well as future key issues have to be considered.

The first study utilized the IAT to measure the negative stereotype related to French-Arab individuals. Such a procedure should alleviate explicit self-presentational biases (Devine, 1989; Fazio & Olson, 2003; Nisbett & Wilson, 1977). Moreover, the study used the same methodology as Greenwald et al. (1998). However, some controversy surrounds the IAT measure (see, for example, Blanton, Jaccard, Gonzales, & Christie, 2006). Such limitations will have to be explored in the future. Another line of research concerns the link between implicit and explicit measures of the negative stereotype related to French-Arab individuals. Dambrun and Guimond (2004) outlined an issue in the title of their recent article: "Implicit and explicit measures of prejudice and stereotyping: Do they assess the same underlying knowledge structure?"; a growing amount of literature is linked with this question. Whereas IAT findings revealed that French-Arab students were negatively stereotyped on the intellectual dimension, the pretest of the second study demonstrated that participants did not personally believe that French-Arab students are less intelligent than native French students. This outlined the necessity to take in account both implicit and explicit knowledge of French-Arab stereotype. Kiefer and Sekaquaptewa (2007) recently emphasized the moderating role of implicit in-group-domain stereotyping on stereotype threat effect among women. They showed that, even when stereotype threat is reduced (i.e., when the situation is presented as non-diagnostic), women with high implicit gender stereotypes may active these stereotypes. As such, future research will have to explore the role of implicit stereotyping on French-Arab susceptibility to threatening contexts.

The second study focused on the sensitivity of French-Arab students to a threatening context. As previously mentioned, the results confirmed that, compared to native French students, French-Arab students underachieve when they believe that their intelligence is at stake. However, two possible limitations have to be pointed out. First, the study did not include a measure for the socioeconomic status of the sample despite the strong relationship between socioeconomic status and ethnicity (for example, see Felouzis, Liot, & Perroton, 2005). Moreover, threatening environments have disruptive effects on students from a low socioeconomic status (Croizet & Claire, 1998; Croizet & Dutrévis, 2004). Thus, it is impossible to exclude the possibility that socioeconomic status may be a factor that could explain the observed effects. A change in the induction could resolve this question, such as presenting the research as designed to examine the reasons for differential performance between French-Arab and other students (e.g., Beilock, Rydell, & McConnell, 2007). Second, students believe that French-Arab individuals have a poorer grasp of the French language than native French individuals. As a verbal task was used, the results could be explained in terms of an internalization of the stereotype. To deal with this alternative explanation, a nonverbal task could be used, such as the Raven Advanced Progressive Matrices test (Raven, 1962). This task is frequently used in order to assess IQ through a nonverbal test (Embreston & Schmidt McCollam, 2000). Such a test would eliminate the confrontation of verbal difficulties.

In conclusion, these two studies constitute a first step in the focus on stigmatization against French-Arab individuals. Concerning French-Arab students' academic underachievement, the results herein confirmed that their performance depends on social contingencies. This result raises the question of the underlying mechanisms – in truth, the main concern in the stereotype threat literature. The website "Reducing stereotype threat.org" accounts for this interest. Naturally, understanding how stereotype threat occurs represents a necessary condition in order to alleviate its deleterious impact. In regards to the French-Arab students, group identification appears to be a key factor. Past research has already shown that, the more one identifies with one's group, the more one will be susceptible to threatening environments (Marx, Stapel, & Muller, 2005; Schmader, 2002). Individuals strongly identify with their

ethnic group as young as fifth grade (Martinot & Audebert, 2003). Moreover, Régner and Loose (2006) pointed out a negative relationship between French-Arab identity and grades. In the same way, ethnic identity is strongly related to self-esteem, but only in the unfavorable context of group identity (Martinot & Audebert, 2003). The link between performance, ethnic identity, and self-esteem should be explored in greater depth, which could contribute to a better comprehension of French-Arab students' underachievement.

In addition to achievement concerns, general discrimination against French-Arab individuals should be considered. Recent research on stigmatization has revealed that most minority groups confront mixed stereotypes (Fiske, Cuddy, Glick, & Xu, 2002; Fiske, Xu, Cuddy, & Glick, 1999; see also Jost & Kay, 2005; Kay & Jost, 2003). Fiske and colleagues (1999, 2002) suggested that two dimensions – namely, warmth and competence – allow a complete capture of stereotype content. According to these authors, when one social group is negatively stereotyped in one dimension, the group is generally positively perceived in a second one. For example, women are perceived to be less competent than men; however, they are positively stereotyped in the dimension of warmth. Meanwhile, Asian Americans are perceived as very competent, but not warm. What about French-Arab individuals? The first study herein suggests that they are negatively depicted in the dimension of competence. Moreover, Lacassagne et al. (2001) as well as Dambrun and Guimond (2003, 2004) did not find any other positive results concerning their perceived social attributes. A single measure of the general stereotype content of the French-Arab group would be necessary. However, initial results are not positive. Indeed, as revealed by Fiske et al. (1999, 2002), few groups are neither competent nor warm. If this is the case for French-Arab individuals, a large number of deleterious outcomes may emerge, such as intergroup competition or negative emotions. Overall, the discrimination against this significant part of the French population should be of great concern for future research.

Notes

1 The Observatory on inequalities (L'observatoire des inégalités) is a French organization for which the goal is to foster attention and research on social and economic inequalities in France.

2 French first names used: Florent, Ludovic, Jérôme, Yannick, Laurent, Pierre, Antoine, François, Christophe, and Cyril. Arab first names used: Karim, Samir, Farouk, Abdel, Rachid, Nabil, Farid, Kader, Mourad, and Azziz. Arab first names were selected from the website www.magharibi.com/prenoms/index.html

3 Intelligence-related traits were extracted from a pretest by Dutrevis (2004). Traits positively related to intelligence were reasoned, cultured, intelligent, studious, efficient, intellectual, competent, clever, logical, erudite [*Raisonné, cultivé, intelligent, studieux, performant, intellectuel, compétent, doué, logique, savant*]. Traits negatively related to intelligence were foolish, idiot, simple-minded, simple, hopeless, stupid, ignorant, incompetent, cretinous, bad [*Bête, idiot, imbécile, niais, nul, stupide, ignorant, incompétent, crétin, mauvais*].

4 Here, the response latencies are presented. However the analyses entirely follow the model suggested by Greenwald, McGhee, and Schwartz (2003). Descriptive statistics for the D score given by this model are M=0.57 and SD=.32.

5 There was no significant effect of gender on adhesion to the fact that French-Arab students were less intelligent than the French students. However, men did have higher evaluations on the scale of intelligence than women independent of the target's ethnicity, $t(36)=2.28$, $p=.03$. As there was no interaction of gender and the target's ethnicity evaluation, this latter result did not have any consequences on subsequent interpretations of the results.

6 Similar to Shih, Pittinsky, and Ambady (1999), the current process included a second index of intellectual performance corrected for guessing (index of accuracy), based on the number of attempted items. More exactly, this index was the ratio of absolute number of verbal GRE items correctly solved to the number of attempted items. A 2x2 ANOVA resulted in a significant interaction between students' ethnicity and test description, $F(1,96)=6.61$, $p<.01$, $\eta^2=.06$. As expected, planned contrasts revealed that French-Arab students performed better under non-diagnostic condition (M=0.45; SD=0.13) than under diagnostic condition (M=0.35; SD=0.13), $t(96)=-2.80$, $p<.006$, $d=-0.57$, $r^2=0.07$. Moreover, under diagnostic condition, French students achieved a significantly higher score (M=0.51; SD=0.15) than their counterparts (M=0.35; SD=0.13), $t(96)=-4.37$, $p<.001$ $d=-0.89$, $r^2=0.16$. This group ethnic difference was eliminated under non-diagnostic conditions, $t<1$, $d=0.15$, $r^2=0.005$. A significant main effect of the ethnicity occurred in accuracy – $F(1,96)=13.02$, $p<.001$, $\eta^2=.12$ – such that French-Arab students globally underperformed (M=0.39; SD=0.14) French students (M=0.49; SD=0.14). No main effect of task description was observed, $F(1,96)=1.92$, ns. Among French students, no significant differences emerged between the diagnostic condition and the non-diagnostic condition, $t<1$, $d=.22$, $r^2=.001$. As the analyses on the number of correct items provided similar result as those on accuracy, the discussion reports those of correct items.

7 The contrast testing for this comparison was significant for number of correct items $t(96)=-3.96$, $p<.001$, $d=-.80$, $r^2=.13$ and, for accuracy, $t(96)=-4.4$, $p<.001$, $d=-$

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Etre membre d'un groupe stigmatisé et avoir connaissance des traits stéréotypiques associés à ce groupe peut se révéler lourd de conséquences pour l'individu. L'effet délétère de cette situation sur les performances des individus a été mis en évidence à de nombreuses reprises, et est connu sous le terme d'effet de menace du stéréotype. L'objectif des recherches présentées ici est de montrer que les faibles performances académiques observées chez les jeunes français d'origine maghrébine pourraient découler d'un tel processus. Deux études allant dans ce sens sont proposées. L'Etude 1 met en évidence, au moyen d'un test d'association implicite, l'existence d'un stéréotype d'infériorité intellectuelle associé à la population des immigrés d'origine maghrébine en France. L'Etude 2 révèle que ce stéréotype est non seulement connu de cette population, mais qu'il a des conséquences délétères sur les performances à une tâche présentée comme étant diagnostique des aptitudes intellectuelles. Lorsque cette tâche est présentée de la sorte, les performances d'étudiants français d'origine maghrébine sont significativement diminuées comparativement à la même tâche présentée comme non diagnostique de l'intelligence, révélant ainsi un effet de menace du stéréotype. L'implication de la stigmatisation des français d'origine maghrébine dans ces résultats est discutée.

Key words: French Arab students, Implicit stereotypes, Intellectual performance, Stereotype threat.

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