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THE IMPACT OF HIERARCHY-ENHANCING VS. ATTENUATING ACADEMIC MAJOR ON STEREOTYPING: THE MEDIATING ROLE OF PERCEIVED SOCIAL NORM

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ABSTRACT

This study examined the impact of "hierarchy-enhancing vs. attenuating" academic major on stereotyping, social dominance orientation (SDO) and perceived social norm regarding tolerance. The participants were 45 third-year psychology students ("attenuating academic major") and 30 third-year law students ("enhancing academic major") from Blaise Pascal university (France). As predicted, students in psychology show a lower level of "Arab" stereotyping and are less social dominance-oriented than students in law. Second, the social norm is perceived to be more tolerant in psychology than in law. Consistent with an explanation based on processes of normative social influence, the effect of academic major on stereotyping is mediated by the measure of perceived social norm. Unexpectedly, SDO and stereotyping are not related. Finally, the results are contrary to the invariance hypothesis, which predicts a sex difference on SDO regardless of culture. While males are more social dominance-oriented than females in law, no sex difference is obtained in psychology. Implications of these results are discussed.

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INTRODUCTION

According to Rothbart and John (1993): "Stereotypes are formed by general impressions conveyed by socializing agents (i.e. media, parents, schools) as well as through direct exposure

to group members" (p. 41). Does it mean that stereotype change is possible through a socialization process? Using Katz and Braly's paradigm, Gilbert (1951) and Karlins, Coffman, and Walters (1969) concluded that the stereotypes of Blacks have become less negative than in 1933 (Katz & Braly, 1933). Considering that this change is largely a matter of anti-discrimination legislation improvement (Brown, 1995; Dovidio & Gaertner, 1986) and that Katz and Braly's technique of stereotype assessment has several serious shortcomings (see Brigham, 1971; Rothbart & John, 1993), it is difficult to conclude anything about the stability or change of stereotypes (Rothbart & John, 1993). Under this perspective, Rothbart and John (1993) conducted a longitudinal study of stereotype change. In this study, the authors examine both group (Black in general) and personal (Black students) stereotypes among students in first year of university and among the same students four years later. The group stereotype appeared very stable ($r = .95$), and the personal stereotype substantially less stable ($r = .50$). In conclusion, Rothbart and John (1993) argued that "stereotypes are highly resistant to change" (p. 58).

However, in contrast to early views of stereotypes as rigid cognitive structures, a number of recent theoretical perspectives suggest that stereotypes are subject to contextual variations (see Biernat & Thompson, 2002; Oakes, Haslam & Turner, 1994). For example, research related to self-categorization theory reveals that simple manipulations of the comparative context can change stereotypes (see Oakes et al, 1994). Moreover, it has been repeatedly demonstrated that social and political attitudes do change during college. In one of the first studies, Newcomb (1943) has shown that, over their four years in college, Bennington students became dramatically less conservative and that this change lasted over the following 50 years later (Alwin, Cohen, & Newcomb, 1991; Newcomb, Koenig, Flackts, & Warwick, 1967). More recently, Guimond (1992; e.g. Guimond & Palmer, 1996) found that attitudes change differently as a function of the academic major of the students. Students in commerce for instance tend to be positive toward "immigrants" and "labor unions" at the beginning of their university training, but in contrast to social science students, they become clearly negative toward these groups three years later. In fact, a considerable amount of research indicates that students and faculty differ widely in their social and political views as a function of their academic areas (see Altemeyer, 1988; Bereiter & Freedman, 1962; Galland, 1995; Guimond, 1998; Guimond & Bégin, 1987; Guimond, Palmer & Bégin, 1989; Ladd & Lipset, 1975; McClintock, Spaulding & Turner, 1964; Sidanius, Pratto, Martin & Stallworth, 1991). In general, people in the social sciences and humanities or those in more theoretical areas tend to hold relatively liberal, progressive or leftist views, while people in commerce, law,

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engineering or more applied areas tend to hold relatively conservative views. For example, using a sample of 5655 students from the University of Texas, Sidanius et al (1991) have shown that there are striking differences between career tracks on racism. Students in the "power professions" such as commerce and law emerged as being the most racists while people in arts or social work are among the least racists. Moreover, there is both cross-sectional and longitudinal evidence to suggest that these attitudinal differences result, at least in part, from a socialization process in the sense that differences are minimal at first but grow larger over time spent in an academic area (Feldman & Newcomb, 1969; Guimond, 1992; 1995a; 1998; 1999; Guimond & Palmer, 1990; 1996; Sidanius et al, 1991; Van Laar, Sidanius, Rabinowitz & Sinclair, 1999).

However, none of these studies have examined change in stereotyping. Consequently, the first objective of the present study was to examine the impact of academic major on stereotyping.

To this end, we decided to contrast two different fields of study, psychology and law, which should differ in terms of stereotyping according to social dominance theory (Sidanius & Pratto, 1999). This theoretical framework suggests that stereotypes have the function of legitimizing group-based inequality. Furthermore, it suggests that various occupations or social roles can be classified as either hierarchy-enhancing or hierarchy-attenuating. In the former case, the social role is said to reinforce inequality while in the latter case, the role is said to be oriented toward an attenuation of group-based inequality. Because in previous research, the field of law was classified as hierarchy-enhancing (see Pratto et al, 1994), social dominance theory would suggest that students in law would have a greater tendency to use stereotypes than students in psychology, a field which may be classified as hierarchy-attenuating. If indeed, students in law differ from students in psychology in terms of stereotyping, a basic question is why? A second objective of this study is to contrast two different perspectives in this regard.

From a socialization perspective, it can be argued that students who have been socialized in law will show greater levels of stereotyping toward stigmatized outgroup than students who have been socialized in psychology, because social norms and values differ in these two areas (Pettigrew, 1958). More specifically, we hypothesize that the normative position of students and faculty, as perceived by the students, is to be more intolerant in law than in psychology. Moreover, we predict that this perceived social norm partly mediates the effect of academic major on stereotyping. Such a prediction follows from both classic studies of social influence and conformity (Newcomb, 1943; Pettigrew, 1958; Sherif, 1936) and more recent investigations of group socialization (Guimond & Palmer, 1990; Guimond et al., 1989; Levine et al, 1998; Prentice & Miller, 1993; Ryan & Bogart, 1997).

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From the perspective of social dominance theory (Pratto, Sidanius, Stallworth & Malle, 1994; Sidanius & Pratto, 1999), a different hypothesis can be made. Social dominance theory (SDT; Sidanius & Pratto, 1999), but also system justification theory (SJT; Jost & Banaji, 1994; Jost & Major, in press), suggests that ideologies and stereotypes legitimate the social hierarchy. More specifically, SDT argues that every society develops ideologies that promote, or to the contrary, attenuate group inequality. These ideologies are called "legitimizing myths" and are divided into two categories: "hierarchy-enhancing legitimizing myths," which accentuate inequality and social hierarchy, and "hierarchy-attenuating legitimizing myths," which legitimate equality. Racism and conservatism are examples of the former while socialism and feminism are examples of the later. Social dominance orientation (SDO) is "the degree to which individuals desire and support group-based hierarchy and the domination of inferior groups by the superior groups" (Sidanius & Pratto, 1999; Pratto et al., 1994). Consistently, several recent studies show that people high in SDO are more negative toward stigmatized outgroups, like Blacks in United States (Sidanius & Pratto, 1999) or Arabs in France (Guimond & Dambrun, in press). In line with the social function of stereotypes (Crocker, Major & Steele, 1998; Snyder & Miene, 1994), system justification theory also argues that stereotypes about social groups are another type of legitimizing myth. "One function of stereotypes is to explain and justify the advantaged or

disadvantaged position of groups in society" (Crocker et al., 1998). Consistent with this perspective, Guimond (2000) found that majority group members socialized during four years in an "enhancing academic major" (officer training program) became significantly more negative toward outgroups and more likely to internalize beliefs that legitimize the economic gap between ingroup and the outgroup. Because SDO drives "enhancing legitimizing myths" like stereotyping, the effect of academic major on stereotyping could be partly mediated by SDO.

In other words, first, we hypothesize that students socialized in an "enhancing academic major" (i.e. law) will show a greater level of stereotyping toward a stigmatized outgroup than students socialized in an "attenuating academic major" (i.e. psychology). Second, we predict that two independent processes, namely SDO and perceived social norm, will mediate this effect.

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A third and final aim is to examine gender differences in SDO. Consistent with SDT, previous research has shown that males tend to be more social dominance-oriented than females (see Pratto et al, 1994, Pratto, Stallworth, & Sidanius, 1997). An important claim of SDT is that such differences have not only social but biological origins (Pratto, 1999; Sidanius, 1993). In an impressive study, Sidanius, Pratto and Bobo (1994) have shown that gender differences on SDO appear to be situationally or culturally invariant. More specifically, their analysis of data from a large and culturally diverse sample of Los Angeles County indicates that regardless of variations in cultural background, ethnicity, age, social class, religion, political ideology or even gender-role orientation, the difference between men and women on SDO stays basically the same. While these findings do not show directly the role of biological factors, as the authors acknowledge, they suggest that cultural factors have little impact on this basic gender difference (see also Sidanius, Levin, Liu, & Pratto, 2000). Accordingly, in the present study, one would expect men to differ from women on the SDO and this difference should be the same in law and in psychology.

METHOD

Participants

As part of a program of research on group socialization, 75 students at the University Blaise Pascal, France were recruited for the study. Third-year students were selected because they have been well socialized into their respective academic major. More specifically, the sample consists of 45 third-year students in psychology and 30 third-year students in law. Their average age was respectively 22.8 and 22.3 years old. Forty-eight participants were female (of which 34 are in psychology), 26 were male and one participant did not indicate gender.

Procedure

Participants were recruited during a course. At the beginning of the course, experimenters were introduced by the professor. Participants were invited to take part in a study on social perceptions. All participants who volunteered were asked to write their name on a list. This procedure was used for both law students and psychology students. Concerning the study, upon their arrival, students were asked to complete a questionnaire that included a variety of measures.

These are described below. During the study, participants were placed alone in a room. At the conclusion of the session, participants were fully debriefed.

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Questionnaire

The questionnaire included three main measures: a measure of stereotyping, the SDO scale and a measure of perceived social norm regarding tolerance.

Table 1. Traits Used in the Attribution Trait Task

Traits	Stereotypic of Arabs	Non-stereotypic of Arabs
Positives Items	warm family-oriented straightforward original stick together	kind courageous nice intelligent likeable
Negatives Items	restless aggressive insolent threatening violent	lazy ignorant dishonest unpleasant thief

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The Trait Attribution Task

On this measure, participants were asked to judge on a 7-point scale the stereotypicality of 20 attributes with regard to the group label "Arab", a stigmatized group in France (see Dambrun & Guimond, 2001; Lambert, Moghaddam, Sorin & Sorin, 1990). All these attributes were selected on the basis of previous research, including several pre-tests, designed specifically to uncover positive and negative traits that were stereotypic or non-stereotypic of Arabs (see Dambrun & Guimond, 2001, 2002). In a first pilot study involving 25 students, an initial list of 130 attributes was obtained. In a second pilot study among 25 new students, ratings of the extent to which these attributes were positive or negative were obtained. In a final pilot study involving 64 students, ratings of the extent to which these attributes were stereotypical of "Arab" were obtained. On the basis of the statistical analysis of these results, 20 traits were finally retained for this trait attribution task. Of these 20 traits, 10 are stereotypic of "Arab" and 10 are non-stereotypic. Half of the adjectives in each set are positively valenced, and half are negatively valenced. Table 1 presents the full listing of these 20 traits. Averaging ratings for the five traits in each category, four scales were constructed to assess respectively, the ratings of Arabs on positive stereotypic traits, on positive non-stereotypic traits, on negative stereotypic traits, and on negative non-stereotypic traits. Table 2 displays means and standard deviations of these four scales.

Table 2. Descriptive Statistics of the Dependent Measures

	Mean	SD
Positive stereotypic traits	5.05	.80
Negative stereotypic traits	3.88	1.24
Positive non-stereotypic traits	4.74	.94
Negative non-stereotypic traits	3.24	1.12
SDO	2.09	.94
Perceived social norm	2.96	1.4

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The questionnaire also contained measures of variables expected to account for the effect of academic major on Arab stereotyping.

The SDO Scale

Based on the research of Pratto et al. (1994), a 10-item version of SDO was used. As the study was carried out in France, the items were translated into French. Five items indicate a favorable orientation toward group dominance and inequality (e.g. "It's probably a good thing that certain groups are at the top and other are at the bottom") and five items indicate a favorable orientation toward social equality (reverse coded; e.g. "Group equality should be our ideal"). Participants indicated their responses for this measure on a 7-point scale ranging from 1 (totally disagree) to 7 (totally agree). The reliability of this scale is satisfactory ($\alpha = .81$) and similar to that reported by Pratto et al. (1994). Consequently the 10 items were average to form the SDO scale. Descriptive statistics of this scale are presented in table 2.

Perceived Social Norm

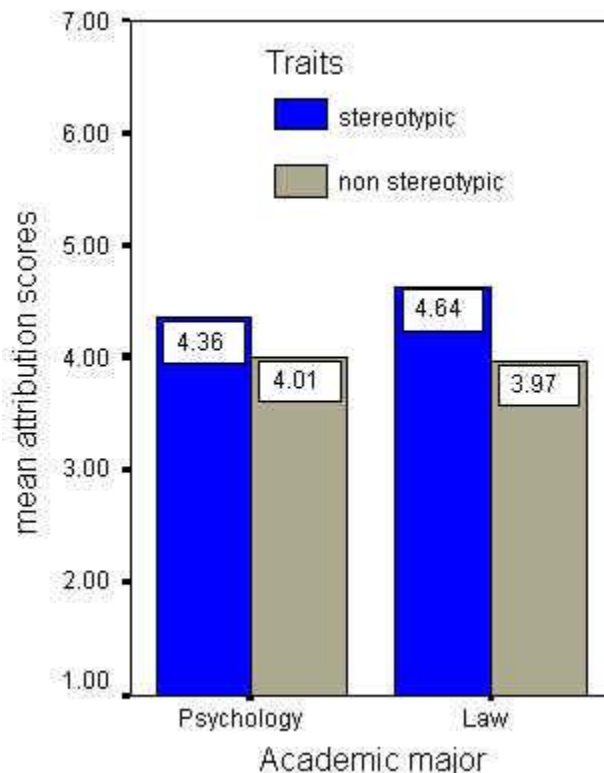
To measure the perception of the social norm, a procedure based on research by Prentice and Miller (1993) was followed. Students were asked to indicate the position of most other students (or faculty) in their area of study on three items. The first item was taken from the SDO and stated: "Most students in [law] believe that it's OK if some groups have more of a chance in life than others." The second item read: "Most students in [law] believe that immigrants should have more rights" (reverse coded). The final item referred to the position of faculty: "Most professors in [law] believe that French people should have priority in terms of jobs." The field of law was replaced by psychology for respondents of that academic area. As for previous measures, participants indicated their responses for this measure on a 7-point scale ranging from 1 (totally disagree) to 7 (totally agree). A scale constructed from these three items has adequate reliability ($\alpha = .73$) and constitute our measure of the social norm with higher scores indicating the perception of a norm of intolerance. The 3 items were average to form a perceived social norm scale (see Table 2).

RESULTS

Stereotyping

To examine if stereotyping vary as a function of academic major, ratings of the target group (i.e. "Arab") were examined using a 2 X 2 X 2 mixed-model ANOVA procedure with a two-level between-subjects factor of academic major (law vs. psychology), and two within-subjects factors of two levels each, that is traits stereotypicality (stereotypic vs. non stereotypic), and valence of traits (positive vs. negative). This analysis not only contrasts the ratings given by law students to those given by psychology students, but also examines if these ratings differ depending on whether the traits involved are stereotypical or not, and whether the traits are positive or not. This analysis reveals first, a main effect of traits stereotypicality, $F(1, 73) = 56.03, p < .001, \eta^2 = .43$. Stereotypic traits ($M = 4.47$) are associated more with the group label, "Arab" than non-stereotypic traits ($M = 3.99$). This effect essentially confirmed that some traits are stereotypical: they are perceived as describing the group much more than others. More importantly, the stereotypicality x academic major interaction is also significant, $F = 5.51, p < .02, \eta^2 = .07$. As Figure 1 shows, the decomposition of this interaction effect reveals that law students associated marginally more stereotypic items with the group label Arab ($M = 4.64$) than psychology student ($M = 4.36; F = 3.5, p < .06$).

Figure 1. Significant Interaction Effect of Stereotypicality by Academic Major on Mean Attribution Scores

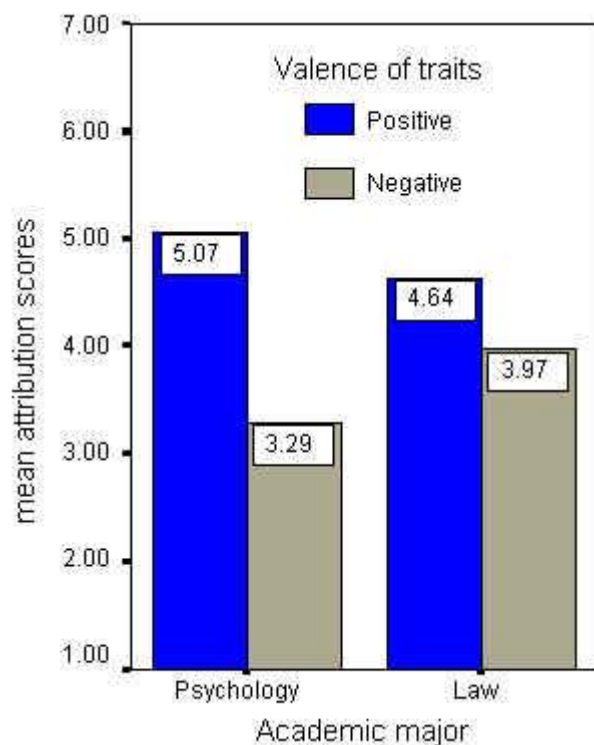


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Third, this analysis reveals a main effect of valence, $F = 40.2, p < .001, \eta^2 = .35$. Negative traits ($M = 3.56$) are less attributed than positive traits ($M = 4.89$). Fourth, the valence x academic major interaction is also significant, $F = 8.38, p < .001, \eta^2 = .10$. As Figure 2 indicates, the decomposition of this effect shows that psychology students attribute more positive ($M = 5.07$) and less negative ($M = 3.29$) traits to the label "Arab" than law students ($M = 4.63; M = 3.97$; respectively, $F = 6, p < .017$ and $F = 7.21, p < .009$). The three way interaction is not statistically significant, $F = 2, p > .16$.

Figure 2. Significant Interaction Effect of Valence of Traits by Academic Major on Mean Attribution Scores



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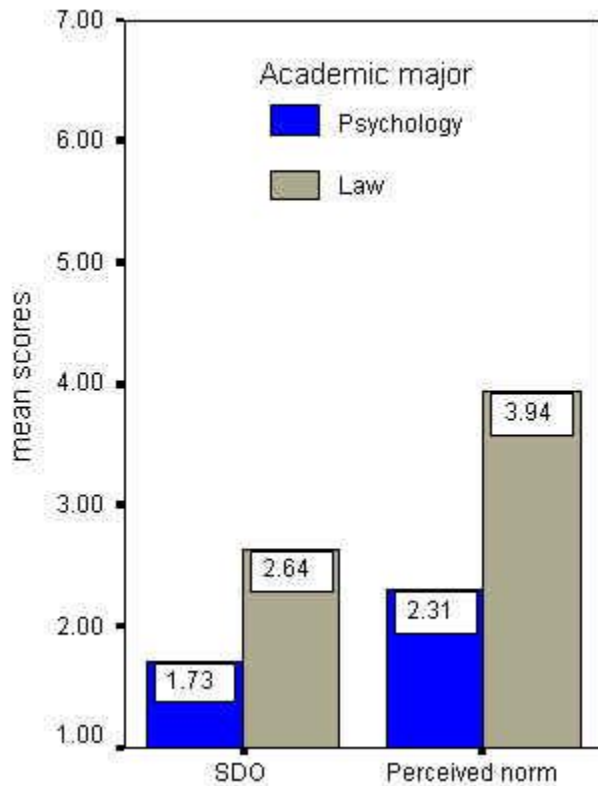
Social Dominance Orientation

As Figure 3 shows, third-year students in law are significantly more social dominance-oriented than third-year students in psychology, $F(1, 74) = 22.15, p < .001, \eta^2 = .23$.

Perceived Social Norm

As shown by Figure 3, the normative position of other students and faculty is perceived to be significantly more prejudice-oriented in law than in psychology, $F(1, 74) = 36.4, p < .001, \eta^2 = .33$.

Figure 3. Means Scores of Law and Psychology Students on SDO and Perceived Social Norm



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Ancillaries Analyses

In order to examine if stereotyping is related to SDO and perceived social norm, we created a stereotyping contrast. To compute this contrast, the mean attribution scores of non-stereotypical traits with the label "Arab" were subtracted to the mean attribution scores of stereotypical traits with the same group label (see Dambrun & Guimond, 2001; Wittenbrink, Judd & Park, 1997). Unexpectedly, as Table 3 shows, our measure of Arab stereotyping is not related to SDO. In other words, the hypothesis suggesting that the effect of academic major on stereotyping is partly mediated by SDO is not confirmed. However, as predicted, our measure of perceived social norm correlates significantly with stereotyping. In order to test the mediating role of social norm in the relation between academic major and stereotyping, the regression procedure advocated by Baron and Kenny (1986) was followed. It is first required that the mediating variable (e.g. perceived social norm) be related to the independent variable (e.g. academic major) and the dependent variable (e.g. stereotyping).

Table 3. Correlations Between Stereotyping, SDO and Perceived Social Norm

	1	2	3
1- Arab stereotyping (contrast)	-		
2- SDO	.11	-	
3- Perceived social norm	.33**	.48***	-

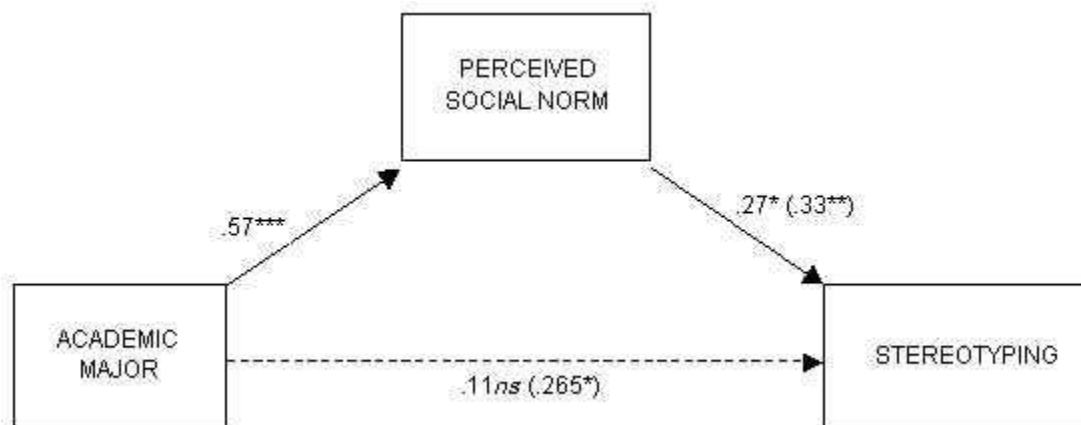
Note. *** $p < .001$; ** $p < .01$; * $p < .05$; + $p < .10$

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As figure 4 shows, the academic major (psychology vs. law) has a significant effect on the perception of the social norm regarding intolerance ($\beta = .57, p < .001$) and the social norm, in turn, is predictive of stereotyping ($\beta = .33, p < .01$). The more participants perceive that other students and faculty in their areas of study are relatively intolerant, the higher their own level of stereotyping is. This result means that the perceived social norm fulfills two initial requirements of a mediating variable. The final and most basic requirement specified by Baron and Kenny (1986) is that a mediating variable should predict the dependent variable (i.e. stereotyping) even when the independent variable (i.e. academic major) is statistically controlled, while the effect of the independent variable on the dependent measure should be substantially reduced when the mediating variable is statistically controlled. As expected, the effect of academic major on stereotyping ($\beta = .265, p < .02$) becomes non-significant when social norm is statistically controlled ($\beta = .11, ns$), but the effect of social norm on stereotyping remains significant even when academic major is statistically controlled ($\beta = .27, p < .05$).

Figure 4. Perceived Social Norm as a Mediator of the Effect of Academic Major on Stereotyping



Note. *** $p < .001$; ** $p < .01$; * $p < .05$

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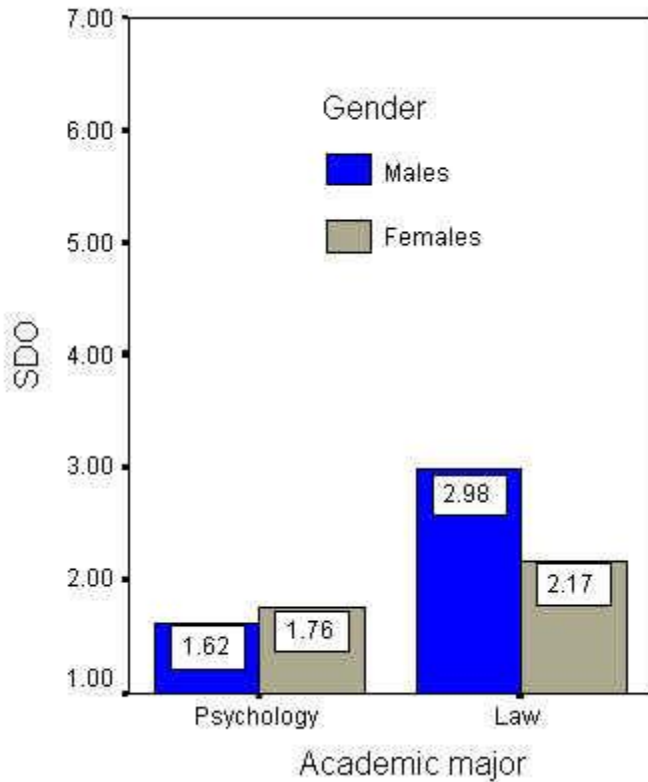
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As table 3 shows, although SDO is not related to stereotyping, SDO is strongly and positively correlated with perceived social norm and this effect remains significant even when academic major is statistically controlled ($r = .28, p < .015$). Further analyses revealed that the mediating role of perceived social norm is independent of the effect of SDO. Controlling for perceived social norm, the effect of academic major on SDO remains significant ($r = .29, p < .013$), but controlling for SDO, the effect of academic major on perceived social norms remains also significant ($r = .45, p < .001$). Consequently, these results suggest that the effects of academic major on SDO and on perceived social norm are two independent effects.

Academic Major, Gender and SDO

Our last hypothesis proposed that males should be more dominance-oriented than females and that this difference should be the same regardless of academic major. A 2 (gender) x 2 (academic major) ANOVA on SDO revealed a marginally significant main effect of gender, $F(1,72) = 2.82, p < .097, \eta^2 = .04$. Males ($M = 2.4$) score higher than females on the SDO ($M = 1.88$). However, a significant interaction of gender by academic major was also observed, $F(1,74) = 5.79, p < .019, \eta^2 = .08$. As Figure 5 shows, there is little gender difference in psychology ($F < 1$) while in law, males score significantly higher than females on the SDO, $F(1, 74) = 5.36, p < .028$. Furthermore, male students in law score significantly higher than male students in psychology, $F(1, 26) = 13.17, p < .001$, while female students in law also tend to score higher than female students in psychology, $F(1, 48) = 3.65, p < .06$.

Figure 5. Significant Interaction Effect of Academic Major by Gender on Social Dominance Orientation



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DISCUSSION

The results of this study indicate that as expected, university students differ significantly in their level of stereotyping as a function of their academic area. Upper-level students in law, a hierarchy-enhancing academic major, display a higher level of "Arab" stereotyping than upper-level students in psychology, a hierarchy-attenuating academic major. Moreover, as predicted on the basis of a socialization explanation, the norm regarding intolerance is perceived as being strikingly different in the two areas. Students in law report that people in their academic major are generally more intolerant than is the case in psychology. Finally, mediational analysis confirms that the relation between academic major and stereotyping can be explained by this different normative orientation. In other words, the fact that students in law display a higher level of stereotyping is accounted for by the fact that they perceive other students and faculty to be less tolerant than do students in psychology. These results are clearly consistent with Pettigrew's (1958) classic analysis suggesting that when the social norm reflects intolerance, individuals tend to conform to such norms. The results confirm previous research demonstrating that student's attitudes and beliefs change as a function of the group they join thus providing important evidence on the role of group socialization in the explanation of intergroup attitudes (see Guimond 2000, Newcomb, 1943). They are also in line with previous longitudinal studies showing, for instance, that students in commerce, another hierarchy-enhancing academic major, are not more hostile toward immigrants than students in the social sciences at the beginning of their academic training, but become so after three years of study (see Guimond, 1998; Guimond

& Palmer, 1996). Over time, these commerce students presumably learned the norms of their academic discipline, applied it to themselves and so, became significantly more negative toward immigrants (see Guimond, 2000).

Replicating the results of Sidanius, Liu, Pratto and Shaw (1994), we show that students in law score significantly higher on the SDO compared to students in psychology. However, we do not find a significant positive relation between scores on the SDO and stereotyping. As argued by Crocker et al. (1998): "Stereotypes about social groups are another type of legitimizing myth and can help to preserve and maintain existing inequalities between groups" (p. 7). The absence of a relation between stereotyping and SDO seems to indicate that they are two independent factors that maintain the social hierarchy and that they refer to different cognitive and motivational processes (Fiske, 2000).

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These results then are more consistent with Pettigrew's perspective than with the SDT framework. But other processes can also occur and partly explain the effect of academic major on stereotyping. According to Crandall (1994), another system-justification ideology is the tendency to hold individuals responsible for their situation, and to attribute their situation to internal or controllable factors. Under this view, Guimond (1995, 1999, e.g. Guimond et al., 1989) found, depending on their academic major, that university students can be socialized to believe that the poor and the employed are responsible for their fate, just as they can be socialized to believe, or to maintain the belief, that systematic factors account for employment and poverty. In other words, if students are exposed to internal explanations of behaviors (e.g. lack of effort by poor people explains poverty) they could become less tolerant. Under this view, internal-external attribution of behaviors could mediate the effect of academic major on stereotyping. This effect could also be partly explained by a social informational influence process. One of the main lesson of recent research in social psychology is that human are cognitively limited and use simplistic heuristics, like stereotypes. The knowledge that stereotypes are simplistic can, perhaps, motivate psychology students to build more complex knowledge or to limit or inhibit the use of a simplistic construct. It means that, consciously, students could modify their own stereotyping processes. Future research could examine these alternative and complementary hypotheses.

Finally, in terms of differences between males and females on SDO, our results unexpectedly failed to support the invariance hypothesis. Contrary to Sidanius et al. (1994), we found support for an interactive model. The difference between males and females varies as a function of their academic area. In psychology, male and female upper-level students do not differ on the SDO. In law, males are more dominance-oriented than females, but notice that women in law tend to be more dominance-oriented than women in psychology (see Figure 5). One interpretation of these results is that scores on the SDO of males in psychology were reduced by their university experience, while the reverse occurred for female students in law. In other words, these results can be taken to suggest that social-cultural variables may affect scores on SDO and modify gender differences on SDO. Longitudinal research by Sinclair, Sidanius and Levin (1998) showing a significant decrease in SDO after nine months of exposure to the university environment supports such a socialization interpretation. However, an alternative self-selection

interpretation is also possible. Perhaps the field of psychology selectively recruits males who score particularly low on SDO, thus accounting for the lack of a gender difference in that academic area. Given the cross-sectional nature of the present study, it is not possible to decide whether one interpretation is more valid than the other. However, these results raise doubts about the robustness of the invariance hypothesis.

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