

BELIEF IN PARANORMAL DETERMINISM AS A SOURCE OF PREJUDICE TOWARD DISADVANTAGED GROUPS: "THE DARK SIDE OF STARS"

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In previous research and theory dealing with prejudice, the role of belief in a paranormal determinism of human personality and behavior has been relatively overlooked. Two studies ($N = 371$) tested the impact of belief in astrology on prejudice toward significant stigmatized groups in France (i.e., Arabs, women, and overweight people). Results of the first study reveal that belief in astrology is a significant predictor of prejudice toward stigmatized groups. In addition, results of the second study suggest that attribution of ethnic outgroups' disadvantages to internal causes mediates the effect of belief in astrology on ethnic prejudice. Implications of these results are discussed.

Several studies have explored the links between religiosity and prejudice (Allport, 1958; Batson, Flink, Schroenrade, Fultz, & Pych, 1986; Batson, Schroenrade, & Pych, 1985; Batson & Ventis, 1982; Gorsuch, 1988) and the links between religiosity and belief in the paranormal (Beck & Miller, 2001; Donahue, 1993; Hillstrom & Strachan, 2000; Thalbourne & O'Brien, 1999). But the impact of belief in paranormal determinism on prejudice has been relatively overlooked. The present research partially fills this void. The main goals were: (1) to provide new insights about the relationship between belief in the paranormal and prejudice toward societally disadvantaged groups; and, (2) to examine the psychological mechanisms by which belief in a paranormal determinism might affect prejudice. In the present document, we use the term *paranormal determinism* to refer to the belief that human personality and behaviors are directly determined by the influence of paranormal factors.

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It is relatively well-known that people seek to make sense of the world by making judgments about the cause(s) of human behavior(s) and personality. Attribution theory (Heider, 1958; Kelley, 1973) suggests that behaviors (e.g., poverty) can be attributed to internal causes (e.g., lack of ability, lack of intelligence) or external causes (e.g., institutional discrimination). According to Crandall (1994), the tendency to hold individuals responsible for their situations and to attribute their situations to internal factors is an important source of prejudice. Similarly, Guimond, Begin, and Palmer (1989) showed that students who believed that the poor and the unemployed were responsible for their own fate (e.g., lack of effort) were less tolerant than were those who believed that the unequal distribution of resources by society was responsible for their poverty (external attribution).

Regarding the link between belief in a paranormal determinism and prejudice, attribution theory seems particularly relevant. Specifically, we suggest that belief in paranormal determinism implies two distinct sets of beliefs. The first is a belief that both behaviors and personality are affected by uncontrollable external influences (see Lester, 1994; Sosis, Strickland, & Haley, 1980). Second, it is assumed that these forms of external causes (e.g. the stars in the case of astrology) have a powerful influence on individuals' behaviors and personality. Because paranormal influence is presumed to determine individuals' characteristics, behavior and personality would be seen as relatively nonmalleable and unchangeable. In other words, this attitude favors the belief that individuals' internal characteristics are relatively fixed. In the context of prejudice against disadvantaged groups, this can have important implications. Do people believing in the paranormal focus on external dimensions and attribute causes of groups' disadvantage to external causes (e.g., lack of chance) favoring tolerant attitudes toward these groups? Or, by contrast, do people focus on internal dimensions and attribute the causes of group disadvantage to internal and negative characteristics (lazy, unintelligent...), leading by extension to prejudicial attitudes against these groups? Study 1 tests these hypotheses concurrently.

STUDY 1

In order to examine the links between belief in paranormal determinism and prejudice toward disadvantaged groups, belief in astrology and attitudes toward two very different stigmatized groups (i.e., Arabs and women) were assessed.

METHOD

Participants One hundred and twelve students in psychology at Blaise Pascal University (France) were recruited for the study. Their average age was 19.5. One hundred participants were female and 12 were male.

Procedure Participants were invited to take part in a study on "social perceptions." Upon their arrival at the laboratory, students were asked to complete a questionnaire that included a variety of measures. These are described below. During the study, participants were alone in a room. At the conclusion of the session, participants were fully debriefed.

Questionnaire All measures used 7-point rating scales. A measure of belief in astrology, a measure of ethnic prejudice, and a measure of sexism were included in the questionnaire. Descriptive statistics of these scales (i.e., means and standard deviations) are presented in Table 1.

TABLE 1
DESCRIPTIVE STATISTICS AND CORRELATIONS BETWEEN BELIEF IN ASTROLOGY, ETHNIC
PREJUDICE AND SEXISM (STUDY 1)

	α	M	SD	1	2	3
1 Belief in Astrology	.74	2.2	1.34	-		
2 Ethnic prejudice	.81	2.4	.72	.230**	-	
3 Sexism	.69	3.1	.89	.281***	.331***	-

Note: *** $p < .001$; ** $p < .01$; $N = 112$

Two items were used to assess belief in astrology. Participants were asked to rate on a 7-point scale the extent to which they *disagreed* (1) or *agreed* (7) with the following items: (1) "The date and hour of birth are important criteria which allow us to understand the behaviors and personality of people"; and, (2) "Astrology permits us to explain partly the behaviors and the personality of people". The internal consistency of this scale was found to be satisfactory (see Table 1).

The measure of ethnic prejudice used was a 16-item scale developed in previous research (Dambrun, 2001; Dambrun, Maisonneuve, Duarte, & Guimond, 2002). This scale includes eight positive statements (e.g., "Arabs and French people have similar intellectual ability"; reverse coded) and eight negative statements (e.g., "The rate of criminality would be lower if Arabs were sent back to their countries of origin"). The content of the items is similar to that of other measures of prejudice such as the prejudice scale of Pettigrew and Meertens (1995) although it is adapted to the intergroup context in France where the prime targets of prejudice and discrimination are "Arabs" (see Pettigrew & Meertens). The internal consistency of this scale was found to be satisfactory (see Table 1). Higher scores on this scale indicate greater ethnic prejudice.

In order to measure sexism, nine items from the hostile component of the sexism inventory scale (Glick & Fiske, 1996) were used. The Cronbach alpha was found to be satisfactory (see Table 1).

RESULTS

In order to examine the links between belief in astrology and various measures of prejudice, a series of regression analyses was performed. As Table 1 shows, belief in astrology is positively and significantly related to both the measures of ethnic prejudice and sexism. The more strongly the participants believed in astrology, the more they expressed negative attitudes towards Arabs. Similarly, the greater their belief in astrology, the more they were prejudiced against women (i.e. sexism). Ethnic prejudice and sexism were also positively and significantly related. The more the participants expressed negative attitudes toward Arabs, the greater was their prejudice against women.

DISCUSSION

This first study reveals that in France belief in astrology is positively related to prejudice towards societally disadvantaged groups, such as Arabs and women. It appears that belief in paranormal determinism favors prejudicial attitudes rather than tolerant ones. Because the majority of our participants were female French students, it is important to note that the group of Arabs can be conceptualized as an outgroup, but not the group of women. This leads to the conclusion that belief in astrology can produce hostility against both outgroups (e.g., Arabs) and ingroups (e.g., women). A regression analysis, which excluded male participants, revealed the same basic finding: the more the women students believed in astrology, the more they expressed negative attitudes toward their own group (i.e., women; $r = .38$, $p < .001$). Regarding the disadvantages of stigmatized groups, these results suggest that belief in a paranormal determinism favors internal rather than external attributions. Using this perspective, Study 2 tested the hypothesis that attribution of group disadvantage to internal causes should mediate the effect of belief in paranormal determinism on prejudice towards these groups. A mediator is the generative mechanism by which an independent variable (e.g., astrological beliefs) affects a dependent variable (e.g., prejudice; see Baron & Kenny, 1986).

STUDY 2

In order to test our mediational hypothesis, a measure of internal/external attributions was included in our procedure. To improve the reliability of our measure of belief in astrology, five items were added to the two items used in Study 1. A scale of prejudice towards overweight people was also included in order to test the generality of our hypothesis that belief in a paranormal

determinism is positively related to prejudice against groups that are disadvantaged or stigmatized.

METHOD

Participants Two hundred and fifty-nine psychology students at the Blaise Pascal University (France) were recruited for the study. Their average age was 21. The sample was composed of 245 females and 14 males.

Procedure The same procedure was followed as in Study 1, except that students were asked to fill out the questionnaire at the beginning of a lecture.

Questionnaire All measures used 7-point rating scales. Measures of belief in astrology, ethnic prejudice, prejudice toward overweight people, and internal/external attribution were included in the questionnaire.

Unlike Study 1, this time belief in astrology was assessed using seven items. Participants were asked to rate on a 7-point scale the extent to which they *disagreed* (1) or *agreed* (7) with the following items: (1) "The date and hour of birth are important criteria which allow us to understand the behaviors of people"; (2) "Astrology permits us to explain partly the behaviors of people"; (3) "We need to be interested in the field of astrology if we want to understand the behaviors of people"; (4) "Astrology permits us to explain partly the personality of people"; (5) "The date and hour of birth are important criteria which allow us to understand the personality of people"; (6) "We need to be interested in the field of astrology if we want to understand the personality of people"; and, (7) "I believe in astrology". The internal consistency of this scale was found to be satisfactory (see Table 2).

TABLE 2
DESCRIPTIVE STATISTICS AND CORRELATIONS BETWEEN BELIEF IN ASTROLOGY AND VARIOUS
DEPENDENT MEASURES (STUDY 2)

	α	M	SD	1	2	3	4
1 Belief in astrology	.95	2.04	1.27	-			
2 Ethnic prejudice	.87	2.2	.78	.192***	-		
3 Prejudice toward overweight people	.67	1.57	.80	.173**	.267***	-	
4 Internal attributions	.71	2.7	1.04	.195***	.645***	.261***	-

Note: *** $p < .001$; ** $p < .01$; $N = 259$

The measure of ethnic prejudice comprised 8 items used in Study 1 (4 positive and 4 negative statements) and 9 items from a scale that measured generalized prejudice toward North Africans (Dambrun & Guimond, 2001; Guimond & Dambrun, 2002). This last scale includes five positive statements (e.g., "I

consider our society to be unfair to North Africans"; reverse coded) and four negative statements (e.g., "Those immigrants who do not have immigration documents should be sent back to their countries of origin"). The content of these items is similar to that of other measures of prejudice such as that used by Lepore and Brown (1997). Since the two scales were highly correlated ($r = .64, p < .001$), they were combined and averaged. Internal consistency of this aggregate measure of ethnic prejudice was found to be satisfactory (see Table 2). Higher scores on this scale indicate greater ethnic prejudice.

To assess prejudice toward overweight people, 4 items from Crandall's scale (1994) were used. This scale has adequate reliability (see Table 2). Higher scores on this scale indicate stronger negative attitudes towards overweight people.

Finally, 4 items were used to assess internal/external attribution (e.g. (1) "Poor people do not make enough effort to improve their situation" (internal attribution); (2) "Poverty is the result of laziness" (internal attribution); (3) "The Arabs who live in France do not make enough effort to improve their situation" (internal attribution); and, (4) "Society is responsible for the Arabs' situation in France" (external attribution; reverse coded)). The content of these items is similar to that used by Guimond, Begin and Palmer (1989) and has adequate internal consistency (see Table 2). Higher scores on this scale indicate greater internal attributions.

RESULTS

As predicted, belief in astrology is positively and significantly related to both ethnic prejudice and prejudice towards overweight people (see Table 2). The more the participants believe in astrology, the more they express ethnic prejudice. Similarly, the more they believe in astrology, the more they express negative attitudes towards overweight people.

Consistent with our central hypothesis, belief in astrology is also significantly and positively correlated with our measure of internal attribution. The more the participants believe in astrology, the more they attribute poverty and the disadvantaged position of Arabs in France to internal causes. Confirming previous findings, the more the participants make internal attributions, the more they express prejudice (see Table 2).

In order to test the mediating role of internal attributions in the relationship between belief in astrology and ethnic prejudice, the regression procedure advocated by Baron and Kenny (1986) was followed. It is first required that the mediating variable (i.e., internal attributions) be related to the independent variable (i.e., belief in astrology) and the dependent variable (i.e., ethnic prejudice). As Table 1 and Figure 1 show, these two requirements are satisfied. The final and most basic requirement specified by Baron and Kenny is that a

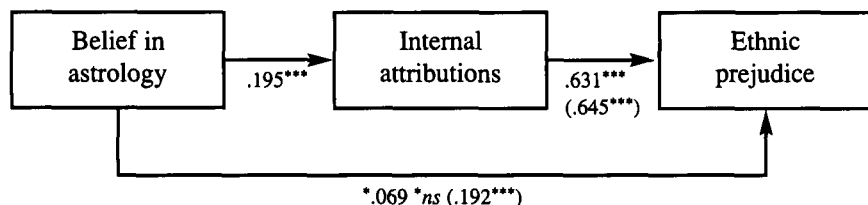


Figure 1. Attribution to internal causes as a mediator of the effect of belief in astrology on ethnic prejudice.

mediating variable should predict the dependent variable (i.e., ethnic prejudice) even when the independent variable (i.e., belief in astrology) is statistically controlled, while the effect of the independent variable on the dependent measure (i.e., ethnic prejudice) should be substantially reduced when the mediating variable is statistically controlled. As expected, the effect of belief in astrology on prejudice ($\beta = .192$, $p < .001$) becomes nonsignificant when the measure of internal attributions is statistically controlled ($\beta = .069$, ns). But the effect of internal attributions on ethnic prejudice remains significant even when belief in astrology is statistically controlled ($\beta = .63$, $p < .001$). The z test performed to test the significance of the mediation (see Kenny, 1998) was reliable ($z = 3.1$, $p < .01$). Confirming the validity of our model, we found no support for the reverse model. More specifically, when the measure of internal attributions is statistically controlled, the effect of prejudice on the belief in paranormal disappears ($\beta = .12$, ns). But, controlling for prejudice, the effect of internal attributions on prejudice also disappears ($\beta = .11$, ns).

DISCUSSION

Confirming the results from Study 1, the results of this second study reveal that belief in astrology is significantly and positively related to prejudice against stigmatized and disadvantaged groups. Moreover, the results are consistent with our predicted mediational hypothesis. More specifically, support was found for the model suggesting that internal attributions mediate the effect of astrological beliefs on prejudice. In other words, their belief in a paranormal determinism leads participants to think that the fate of Arabs in France reflects their negative and fixed internal characteristics (e.g., lack of effort), favoring prejudicial attitudes towards them.

GENERAL DISCUSSION AND CONCLUSION

Through these two studies, we found relatively strong support for the hypothesis that belief in astrology is positively related to prejudice against disadvantaged groups. Confirming previous findings, our measure of internal attribution was found to be strongly correlated with measures of prejudice (see also, Chatman & Von Hippel, 2001; Crandall, 1994; Guimond et al., 1989; Jackson, Sullivan, & Hodge, 1993). Moreover, results from the second study confirm the validity of our mediational model suggesting that internal attribution is a mediator of the effect of belief in astrology on prejudice. Because this model is valid and the reverse is not, we can be relatively confident about the causal direction of the effect. However, our model needs to be confirmed by an experimental design in which belief in astrology would be experimentally manipulated. In addition, the present samples of college students clearly limits the generalizability of the results. Future investigators may want to examine the validity of our findings using a more representative sample. The specificity of the present samples permits us to eliminate the possibility that a third variable such as education explains the relationship between astrological beliefs and prejudice. It could be argued that those who are most prejudiced and who believe the most in astrology are those who are less well educated. This would make the relationship between prejudice and the belief in astrology spurious. Because in the present studies all participants were at the same educational level, this premise does not seem likely.

It is relatively well-known that the human mind needs to make sense of its world. In this respect, people develop different sets of beliefs or ideologies (Beck & Miller, 2001; Hayek, 1952; Mahoney, 1991). Of course these ideologies seem to be relatively adaptive considering the fact that they help people to live in a comprehensible environment. The field of astrology is not new and it seems able to help some people to make sense of their environment, of their behaviors and of the behaviors of others. However, our results suggest that beliefs in astrology bias our perceptions and have some damaging consequences with regard to intergroup relations. While more research is needed, it seems that this kind of belief can favor the expression of negative attitudes towards disadvantaged and stigmatized groups. In this respect, our results reveal the "dark side of stars" and, more generally, the dark side of ideologies that promote the belief that personality and behaviors are relatively fixed and reflect internal dispositions.

REFERENCES

- Allport, G. W. (1958). *The nature of prejudice*. Garden City, NY: Anchor Books.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, **51**, 1173-1182.
- Batson, C. D., Flink, C. H., Schroenrade, P. A., Fultz, J., & Pych, V. (1986). Religious orientation and overt versus covert racial prejudice. *Journal of Personality and Social Psychology*, **50**, 175-181.
- Batson, C. D., Schroenrade, P. A., & Pych, V. (1985). Brotherly love or self-concern? Behavioural consequences of religion. In L. B. Brown (Ed.), *Advances in the psychology of religion*. Oxford: Pergamon Press.
- Batson, C. D., & Ventis, W. L. (1982). *The religious experience: A social psychological perspective*. New York: Oxford University Press.
- Beck, R., & Miller, J. P. (2001). Erosion of belief and disbelief: Effects of religiosity and negative affect on beliefs in the paranormal and supernatural. *The Journal of Social Psychology*, **141**, 277-287.
- Chatman, C. M., & von Hippel, W. (2001). Attributional mediation of ingroup bias. *Journal of Experimental Social Psychology*, **37**, 267-272.
- Crandall, C. S. (1994). Prejudice against fat people: Ideology and self-interest. *Journal of Personality and Social Psychology*, **66**, 882-894.
- Dambrun, M. (2001). *Dominance sociale et préjugés: La régulation sociale des cognitions intergroupes*. [Social dominance and prejudice: The social regulation of intergroup cognitions] Doctoral Dissertation, Laboratoire de psychologie sociale de la cognition, Université Blaise Pascal, Clermont-Ferrand, France.
- Dambrun, M., & Guimond, S. (2001). La théorie de la privation relative et l'hostilité envers les Nord-Africains. [Relative deprivation theory and hostility toward North Africans] *International Review of Social Psychology*, **14**, 57-89.
- Dambrun, M., Maisonneuve, C., Duarte, S., & Guimond, S. (2002). Modélisation de quelques déterminants psychosociaux de l'attitude envers l'extrême droite. (Modeling the social-psychological determinants of support for extreme right-wing movements). *Les Cahiers Internationaux de Psychologie Sociale*, **55**, 49-63.
- Donahue, M. J. (1993). Prevalence and correlates of New Age beliefs in six Protestant denominations. *Journal for the Scientific Study of Religion*, **32**, 177-184.
- Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology*, **70**, 491-512.
- Gorsuch, R. L. (1988). Psychology of religion. *Annual Review of Psychology*, **39**, 201-222.
- Guimond, S., Begin, G., Palmer, D. L. (1989). Educational and causal attributions: The development of "person blame" and "system blame" ideology. *Social Psychology Quarterly*, **52**, 126-140.
- Guimond, S., & Dambrun, M. (2002). When prosperity breeds intergroup hostility: The effects of relative deprivation and relative gratification on prejudice. *Personality and Social Psychology Bulletin*, **28**, 900-912.
- Hayek, F. A. (1952). *The sensory order*. Chicago: The University of Chicago Press.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: John Wiley.
- Hillstrom, E. L., & Strachan, M. (2000). Strong commitment of traditional protestant religious beliefs is negatively related to beliefs in paranormal phenomena. *Psychological Reports*, **86**, 183-189.
- Jackson, L. A., Sullivan, L. A., & Hodge, C. N. (1993). Stereotypes effects on attributions, predictions, and evaluations: No two social judgments are quite alike. *Journal of Personality and Social Psychology*, **65**, 69-84.
- Kelley, H. H. (1973). The processes of causal attribution. *American Psychologist*, **28**, 107-128.

- Kenny, D. A. (1998). Mediation analysis. Accessible on-line at:
<http://w3.nai.net/~dakenny/mediate.htm>.
- Lepore, L., & Brown, R. (1997). Category and stereotype activation: Is prejudice inevitable? *Journal of Personality and Social Psychology*, **72**, 275-287.
- Lester, A. J. (1994). Belief in paranormal phenomena and an external locus of control. *Perceptual & Motor Skills*, **79**, 226.
- Mahoney, M. (1991). *Human change processes*. New York: Basic Books.
- Pettigrew, T. F., & Meertens, R. W. (1995). Subtle and blatant prejudice in western Europe. *European Journal of Social Psychology*, **25**, 57-75.
- Sosis, R. H., Strickland, B. R., & Haley, W. E. (1980). Perceived locus of control and beliefs about astrology. *The Journal of Social Psychology*, **110**, 65-71.
- Thalbourne, M. A., & O'Brien, R. (1999). Belief in the paranormal and religious variables. *Journal for the Society for Psychical Research*, **63**, 110-122.

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