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Nature, Nurture, and Ethnocentrism in the Minnesota Twin Study

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The preponderance of research on the study of ethnocentrism has primarily attributed such attitudes to learned behavior. The research here advances the argument that both socialization and genetic inheritance contribute to the development of ethnocentric attitudes and behavior. This analysis employs the Minnesota Twins Political Survey data consisting of 596 complete twin pairs. Using the classical twin design, we employed structural equation modeling to model the covariance of twins in regards to additive genetic effects, shared environmental effects, and unique environmental effects (i.e., the classic ACE model). The findings reveal that genetic inheritance is significant in explaining the variance in genetic attitudes. Specifically, genetic inheritance explains 18% of the variance, with the overwhelming 82% being explained by the unique environment.

■ **Keywords:** ethnocentrism, genetics, attitudes, environmental effects, twin data

In *Us Against Them*, Kinder and Kam (2009) propose a model to investigate the possibility of ethnocentrism as an outcome of natural selection. Using the latest developments in the study of genetics and political attitudes, the goal of the current research is to empirically test Kinder and Kam's (2009) claim that 'individual differences in ethnocentrism have a genetic source' (p. 27). In the current research, ethnocentrism is defined as a schismatic in-group–out-group set of biases associated with the belief that an individual's racial or ethnic group is superior, and that all other racial or ethnic groups are judged relative to one's own group. It should be heavily noted at the outset that this research is not about groups, but is about individuals. To be sure, individuals from different races share different attitudes. The extant literature provides mounds of evidence explaining the role that the environment plays in the acquisition of various attitudes associated with race. The genetic basis of attitudes, however, is argued to vary by individuals within the group.

The primacy of research on racial attitudes has focused on two phenomena: (1) White racial prejudice, often ignoring in-group favoritism, and (2) African-American identity, often ignoring out-group hostility. For example, African Americans who subscribe to some versions of Black Nationalism not only possess strong in-group favoritism, but also have been found to possess antipathy toward Whites (Davis & Brown, 2002). Further, research by Craemer (2008) reveals that Whites who possess strong out-group affinity toward Blacks are more likely to support progressive racial policies. Orey, Craemer, and Davis (2011) found that African Americans who possess strong out-group favoritism toward Whites, relative to Blacks, are more likely to reject such racial policies as affirmative action and reparations. In sum, it is clear that Blacks and Whites are not homogenous in their thinking. To be sure, members of each group have been socialized to possess in-group favoritism. The research here, however, is focused on individuals and the possibility of differences in ethnocentric attitudes being driven by genetic differences. Before proceeding, a very important point needs to be made. Despite the traditional focus on Black–White race relations in the United States (and more recently, the hostility toward Hispanics), ethnocentrism differs from traditional racial

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prejudice because the in-group hostility is generalized to all out-group members.

Kinder and Kam (2009) revisit the work of Jennings and Niemi (1974) in an effort to investigate whether ethnocentrism is a function of social learning or genetic inheritance, or both. In 1965, Jennings, known for his research on socialization, orchestrated a survey that encompassed high school seniors and their parents. Unlike contemporary surveys, the survey only included thermometer scores for Blacks and Whites. Dissatisfied with these limited items, Kinder and Kam (2009) also included Catholics, Jews, and Protestants in their measurement of ethnocentrism. The authors used these items to examine levels of ethnocentrism among both the parents and the children. The findings revealed a correlation between parent's ethnocentrism and children's ethnocentrism. Ultimately, Kinder and Kam concluded that ethnocentrism 'seem[s] to have more to do with genetic inheritance than with social learning' (2009, p. 64).

One framework that has successfully linked social attitudes and behavior with genetics is the genetic similarity theory. The genetic similarity theory posits that genetically similar people gravitate toward one another and work to maintain supportive environments through various institutions and networks, including marriage, friendships, and social groups (Rushton, 1989). Feinman's (1980) research on xenophobia in infants reveals that a fear of strangers is found to be greater for those individuals who are dissimilar to the infant's parents. Lewis and Bates (2010), using a classical twin design, reported heritable effects associated with in-group favoritism for religious, racial, and ethnic domains. Loehlin (1993), in analyzing the determinants of conservatism, traditional values, education, church attendance, and racial prejudice, found that heritability explained 79% of the variance in racial prejudice, by far the largest amount of variance attributed to genes, when compared to the other measures.

Study Population, Measures, and Methods

The data are derived from the Minnesota Twins Political Survey, the first twin survey solely devoted to political attitudes and behaviors. The data consist of phenotypic data for 596 complete twin pairs, 356 pairs of monozygotic (identical; MZ) twins and 240 pairs consist of dizygotic (fraternal; DZ) twins.

The goal of the current analysis is to examine in-group versus out-group attitudes. Due to data limitations (i.e., the dearth of nonwhite respondents), only White respondents are examined (98.6% of the respondents were White). As a result, our total number of observations is reduced to 565.

For ease of interpretation, all of the variables in this analysis have been recoded between zero and one. The main variable of focus in this analysis is ethnocentrism. It is constructed based on thermometer ratings of the in-group (Whites) and the out-groups (Blacks, Hispanics and Asians) (Kinder & Kam, 2009). Using a scale of 0 to 1, with 0 representing *very cool* and 1 representing *very warm*, respondents were asked to provide a score for each group. Descriptive statistics are provided in Table 1. The findings reveal that White respondents rank members of their in-group much higher than members of out-groups. Whereas members of the out-groups are ranked within 2–3 points of each other, ranging from the lowest ranked out-group, Asians (.68), to the highest ranked out-group, Blacks (.71), the in-group (Whites) ranking far exceeds any of the out-groups (.85).

The key variable in this analysis is ethnocentrism. Borrowing from Kinder and Kam (2009), this variable is operationalized based on the in-group (White thermometer score) minus the average of the out-groups' scores (Kinder & Kam, 2009). Formally, it is represented in the following equation:

> Ethnocentrism = {feeling thermometer score for in-group – average feeling thermometer score for out-groups}

Based on Table 1, the ethnocentrism variable achieves a mean of 0.15, ranging from –0.67 to 1.00.

The current research employs descriptive statistics, correlations, and structural equation modeling to examine the genetic and environmental influences of ethnocentrism.

Results

The first step in detecting heritability is to run simple correlations between MZ twins and DZ twins. The relationship between MZ twins yields a highly statistically significant correlation of .20. The correlation among DZ twins, on the other hand, is 0.00.

Next, an exploratory analysis using structural equation modeling is conducted to detect the best-fitting model. The current analysis chose to use an ACE model as the baseline. According to the results in Table 2, Model 1, the AE model, appears to be the best-fit model, when compared to the other models. This model fits the data without a significant decrement from the fit of the baseline model ($\Delta\chi^2 = 0$, $p = .99$). The next step was to examine Model 2, estimating the significance of the

TABLE 1

Descriptive Statistics

Variables	Minimum	Maximum	Mean	SD
White Thermometer	0.00	1.00	0.85	0.19
Black Thermometer	0.00	1.00	0.71	0.23
Asian Thermometer	0.00	1.00	0.70	0.23
Hispanic Thermometer	0.00	1.00	0.68	0.24
Ethnocentrism	–0.67	1.00	0.15	0.22

TABLE 2

Fit Statistics, Parameter Estimates, and Comparison Statistics for All Models

	Parameter estimates										
Model	a^2	c^2	e^2	–2LL	$\Delta\chi^2$	Δdf	AIC	*p*-value	Δdf	^{2} *p*-value	*df*
ACE (baseline)	.18 [.03, .28]	0 [.00, .11]	.82 [.72, .92]	–606.84			–2842.842				1118
AE (1)	.18 [.08, .28]	-	.82 [.72, .92]	–606.84	0	1	–2844.842	.99	1	.99	1119
CE (2)		.12 [.03, .20]	.88 [.80, .97]	–602.14	4.70	1	–2840.138	< .05	1	.03	
E (3)				–594.57	12.28	2	–2834.567	< .01	2	.002	

Note: A = additive genetics, C = common environment, E = unique environment, –2LL = Akaike information criterion.

unique environment on ethnocentrism. Model 2 ($\Delta\chi^2$ = 4.70, $p < .05$) results in a significant loss of fit when compared to Model 1. Additionally, Table 2 also provides the parameter estimates based on the square of each of the factor loadings produced using structural equations. Thus, based on the adopted AE model, the squaring of the factor loadings demonstrates that A and E account for 18% and 82%, respectively.

Discussion

The findings reported here are the first, to our knowledge, to provide evidence that a significant relationship exists between genetic inheritance and ethnocentrism. A prior analysis by Lewis and Bates (2010) produced results yielding a relationship between genetic inheritance and in-group favoritism, along the lines of both race and ethnicity. Their research, however, failed to capture the out-group disaffection rooted in ethnocentrism. Using Kinder and Kam's (2009) measurement of ethnocentrism, the research here was able to capture in-group favoritism relative to out-group derogation. Using a classic twin design, the results revealed that genetic inheritance explained 18% of the variance, compared to 82% being captured by the unique environment.

These results suggest that an overwhelming amount of variance is explained by environmental factors. That is, ethnocentrism is dominated by learned behavior. Individual experience primarily accounts for attitudes and behavior related to ethnocentrism. However, despite the small variance explained by genetic inheritance, the mere significance of this variable is important. Prior research has focused on ethnocentrism strictly through the lens of social determinants. The findings here challenge and support this body of literature, suggesting that unique experiences account for a majority of the variance, not familial forces, and genetic inheritance should also be considered when examining ethnocentrism. Indeed, in studies of out-group attitudes and bias in general, individual differences have been best accounted for by a large genetic component. In this way, ethnocentrism is quite unique, and while it most likely shares certain aspects of out-group bias, this particular trait appears to reflect more of what one experiences, not how one was raised or the genetic disposition.

References

Craemer, T. (2008). Nonconscious feelings of closeness toward African Americans and support for pro-Black policies. *Political Psychology, 29,* 407–436.

Davis, D. W., &. Brown, R. E. (2002). The antipathy of Black Nationalism: Behavioral and attitudinal implications of an African American ideology. *American Journal of Political Science, 46,* 239–253.

Feinman, S. (1980). Infant response to race, size, proximity, and movement of strangers. *Infant Behavior and Development, 3,* 187–204.

Jennings, M. K., & Niemi, R. G. (1974). *The political character of adolescence.* Princeton, NJ: Princeton University Press.

Kinder, D. R., & Kam, C. D. (2009). *Us against them.* Chicago, IL: The University of Chicago Press.

Lewis, G. J., & Bates, T. C. (2010). Genetic evidence for multiple biological mechanisms underlying in-group favoritism. *Psychological Science, 21,* 1623–1628.

Loehlin, J. C. (1993). Nature, nurture, and conservatism in the Australian Twin Study. *Behavior Genetics, 23,* 287–290.

Orey, B. D., Craemer, T., & Davis, L. (2011, January). *Black support for racial policies and the double (non)consciousness thesis.* Paper presented at the Annual Meeting of the Southern Political Science Association, New Orleans, LA. January 6–8, 2011.

Rushton, J. P. (1989). Genetic similarity, human altruism, and group selection. *Behavioral and Brain Sciences, 12,* 503–559.