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Research Article

School Violence and the Culture of Honor

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ABSTRACT—*We investigated the hypothesis that a sociocultural variable known as the* **culture of honor** *would be uniquely predictive of school-violence indicators. Controlling for demographic characteristics associated in previous studies with violent crime among adults, we found that high-school students in culture-of-honor states were significantly more likely than high-school students in non-culture-of-honor states to report having brought a weapon to school in the past month. Using data aggregated over a 20-year period, we also found that culture-of-honor states had more than twice as many school shootings per capita as non-culture-of-honor states. The data revealed important differences between school violence and general patterns of homicide and are consistent with the view that many acts of school violence reflect retaliatory aggression springing from intensely experienced social-identity threats.*

From the coordinated attack at Columbine High School in Colorado, to the one-man massacre at Virginia Tech, violence in schools has become a topic of increasing concern in recent years and has prompted a flurry of studies on possible precursors to gun-related aggression among youth. To date, most of these studies have utilized a focused, case-based approach, largely because of the low frequency of school shootings. This case-study approach has yielded valuable insights into certain commonalities among shooters (e.g., they tend to be interested in violent media, often have mood disorders or suicidal ideations, and are commonly the victims of taunting or rejection; Fein et al., 2002; Leary, Kowalski, Smith, & Phillips, 2003; Newman, Fox, Roth, Mehta, & Harding, 2005).

Although the focused case-study approach has illuminated important dispositional and situational variables that may contribute to school shootings, we suggest that an analysis of these incidents at a broader, cultural level might reveal additional insights into the etiology of school violence. In particular, we propose that a sociocultural variable known as the *culture of honor* might be a risk factor for school violence (the *culture-of-honor hypothesis*), just as it has been demonstrated to be for violent crimes among adults.

Societies exhibiting a culture of honor place a high premium on strength and social regard (especially among males) in connection with one's person, family, reputation, and property, presumably because economic and social factors made such priorities socially adaptive at some point in time (Nisbett, 1993). Early research on the culture of honor in the United States revealed that, compared with people living in non-culture-of-honor states, people living in culture-of-honor states were more favorable toward the death penalty and were more tolerant of, and more prone to exhibit, aggressive retaliation in response to insults and other honor threats. This tendency toward violent defense of one's honor has been demonstrated in controlled laboratory studies (Cohen, Nisbett, Bowdle, & Schwartz, 1996), as well as in archival studies on homicide and violent-crime rates in the United States (Cohen, 1998; Nisbett, Polly, & Lang, 1995). In addition to behaving aggressively, people living in culture-of-honor states endorse attitudes supportive of violence in the service of restoring or defending one's reputation, family, or property (Hayes & Lee, 2005), and they socially and legally sanction violence as sport or entertainment (Baron & Straus, 1989; Cohen, 1996). According to Nisbett and Cohen (1996), Southern and Western states in the United States are more likely to exhibit culture-of-honor qualities than are Northern and Eastern states.

In-depth case studies reported by other researchers (e.g., Leary et al., 2003; Newman et al., 2005) revealed that school violence is often preceded by social marginalization, bullying, romantic rejection, or taunting. Because such experiences represent serious threats to honor (particularly among males), we hypothesized that the culture of honor is a significant risk factor for school violence. Some researchers have argued that the apparent relationship between adult homicide rates and culture of honor in the United States is spurious, resulting from

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basic demographic differences between Southern and Western states, on the one hand, and Northern and Eastern states, on the other, rather than from cultural factors per se. Specifically, culture-of-honor states are typically hotter, poorer, and more socially unstable than non-culture-of-honor states, and any of these differences might explain the apparent association between culture of honor and violence. Indeed, some early analyses of homicide rates in the Southern United States supported this contention (e.g., Anderson & Anderson, 1996), so these same state-level confounds could also explain any association discovered between the culture of honor and school violence.

In the current investigation, we attempted to link the culture of honor to indices of school violence—specifically, the percentage of high school students who reported having brought a weapon to school in the past month, as well as actual rates of school shootings over a 20-year period. To account for the most prominent confounds examined in prior research, we compiled a database on school violence, culture of honor, and variables that have been shown to covary with the culture of honor and could thus account for its possible association with school violence. These variables included measures of social and economic insecurity (e.g., divorce rates, poverty), mean state temperature, and an index of rurality.

STUDY 1

Data

In Study 1, we first examined an index of *school-violence potential*: specifically, the percentage of high school students who reported having brought a weapon to school at least once in the past month. We used data collected in 2003 and 2005 by the U.S. Centers for Disease Control and Prevention as part of the Youth Risk Behavior Surveillance System (YRBSS) and tabulated by the National Center for Education Statistics (2007). The YRBSS is an ongoing, large-scale survey that provides a representative snapshot of students in participating states. Not all states were included in the survey each year, so to increase the stability of the state-level estimates, we aggregated data across 2003 and 2005 by computing the mean across years when data for both years were available and using 1 year's data otherwise. The correlation across years for the 28 states that had survey data for both years was quite high ($r = .74$, $p < .05$). Five culture-of-honor states and 3 non-culture-of-honor states did not have any data in either year of the survey, however, leaving only 42 states for our analyses.

We also collected state-level demographics that have been associated with regional differences in violent crime in prior studies. Specifically, we included the proportion of the state population living in rural areas (U.S. Census Bureau, 2000), mean annual state temperature (National Oceanic and Atmospheric Administration, 2000), and a set of six *environmental-insecurity* indices determined from 2004 data (except as indicated). These latter indices included poverty levels (U.S. Census Bureau, 2006), unemployment levels (U.S. Bureau of Labor Statistics, 2005), median income (U.S. Census Bureau, 2008a), the Gini index of income inequality (computed as a rolling average across years; U.S. Census Bureau, 2005–2007), divorce rates (Munson & Sutton, 2005), and the percentage of people who lived in the same house (i.e., did not move) between 1995 and 2000 (the most recent time period available at the time of the study; U.S. Census Bureau, 2000).[1] The latter variable was included because it provides an efficient indicator of social-network stability and change.

We performed a principal-components factor analysis on the six environmental-insecurity measures, and the analysis revealed that two latent variables accounted for 67.8% of the total variance among these indices (details are available from the authors). We labeled these factors "economic insecurity" (comprising the poverty, unemployment, median income, and Gini variables) and "social insecurity" (comprising the divorce and reverse-coded housing-stability variables) and used these factors as control variables in our analyses.

Finally, most studies on regional or national trends in violent crime include some index of minority populations, particularly the African American population. We did not have a solid theoretical reason for focusing on the African American population in our studies of school shootings: As Newman et al. (2005) have noted in their analysis of "rampage" shootings, the majority of school shooters are European American. However, the percentage of each state's population that is either Caucasian or Latino is theoretically related to the culture of honor because subgroups of the Caucasian population and many Latino cultures promote culture-of-honor values and norms in the United States (Nisbett & Cohen, 1996). We included the social demographic variable *social composition*—the percentage of state population that is Caucasian or Latino—as a covariate in our analysis along with the other state-level demographic control variables. We followed Cohen's (1998) classification of culture-of-honor states as those designated by the U.S. Census Bureau as being Southern or Western (Regions 5–9, excluding Hawaii and Alaska); the remaining states were designated as non-culture-of-honor states.

Results and Discussion

Three of the five state-level demographic control variables differed significantly between culture-of-honor and non-culture-of-honor states. Basic descriptive statistics and significance tests for these variables are displayed in Table 1.[2]

[1] For rurality and household moves, we used the *Census 2000 Summary File 3* (U.S. Census Bureau, 2000) to create tables (Tables P5 and P24) with state-level data. To obtain the Gini index of inequality, we used the *2005-2007 American Community Survey 3-Year Estimates* (U.S. Census Bureau, 2005–2007) to create Table B19083 for all states.

[2] An inverse transformation was applied to social composition prior to analysis because the distribution of this variable was strongly skewed.

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TABLE 1

Comparison of Demographic Control Variables Between Culture-of-Honor and Non-Culture-of-Honor States

	Study 1				Study 2			
	Mean				Mean			
Variable	CH	Non-CH	$t(40)$	p	CH	Non-CH	$t(48)$	p
Mean temperature[a]	55.79	47.49	3.27	.002	55.74	47.45	3.70	.001
Proportion rural	0.30	0.29	0.26	.795	0.28	0.28	0.08	.940
Economic insecurity	0.38	−0.45	2.87	.007	0.38	−0.45	3.16	.003
Social insecurity	0.58	−0.49	4.03	.001	0.54	−0.63	5.06	.001
Social composition[b]	0.87	0.90	1.05	.298	0.87	0.90	1.46	.150

Note. CH = culture of honor.

[a]For Study 1 and Study 2, we used the mean annual state temperatures over the same time period, but the sample sizes differed (N = 42 for Study 1, N = 50 for Study 2). [b]Social composition was calculated as the percentage of the state population that was Caucasian or Latino. An inverse transformation was applied to social composition prior to analysis because the distribution of this variable was strongly skewed.

As hypothesized, a higher percentage of high school students in culture-of-honor states (M = 7.08%, SD = 1.43%) than in non-culture-of-honor states (M = 5.56%, SD = 1.36%) reported having brought a weapon to school at least once in the past month, $F(1, 40) = 12.41$, $p < .01$, $d = 1.11$. When we included the state-level control variables along with culture of honor (coded as 0 for non-culture-of-honor states and 1 for culture-of-honor states) in a multiple regression analysis, the difference in weapon carrying between culture-of-honor (M = 7.07) and non-culture-of-honor (M = 5.58) states remained statistically significant, $\beta = .48$, $t(35) = 2.71$, $p < .01$, $d = 0.92$. Of the other state-level demographic variables included in the analysis, only proportion of the population living in rural areas was a statistically significant predictor of weapon carrying, $\beta = .39$, $t(35) = 2.84$, $p < .01$, $d = 0.96$ (Table 2).[3]

Thus, although more than 90% of high school students did not report bringing a weapon to school in the past month, students in culture-of-honor states were significantly more likely than students in non-culture-of-honor states to report having done so. Because the most deadly forms of school violence are perpetrated with weapons, this association between the culture of honor and the tendency to bring weapons to school supports the thesis that school violence might be greater in culture-of-honor states. Of course, students in culture-of-honor states might simply be more willing than students in non-culture-of-honor states to report having brought a weapon to school. Before we could infer a link between culture of honor and violence in school, we needed a violence indicator that does not rely on self-reported behaviors. The purpose of Study 2 was to obtain and assess such a violence indicator.

[3]Because of the small sample size in this state-level analysis, we were concerned about violations of certain statistical assumptions, particularly the normality of the residuals from the regression. Analysis of these residuals, as well as other problem indicators (e.g., studentized deleted residuals, Cook's distance), revealed that the normality assumption was met quite well, and no data points stood out as being problematic.

STUDY 2

Study 1 showed that the culture of honor is associated with an index of school-violence potential, but does the culture of honor predict actual levels of school violence? To answer this question, we compiled a database of school shootings over the past 20 years, from 1988 to 2008. We constrained our analysis to this time period for two reasons. First, a preliminary search revealed that the vast majority of school shootings on record occurred during this 20-year period. Second, the state-level demographic control variables we used were not expected to be reliable over a much longer time period, partly because some of these data were not consistently gathered and recorded by states in previous decades. We further constrained our database to include only prototypical school shootings: shootings that were not simply suicides; that did not involve a separate crime, such as a robbery; and that were perpetrated by either students or employees of the school at which the shooting occurred. Some shootings that we reviewed were actually secondary to robberies in which the attackers shot their victims because they resisted, and violence was not the central aim of the incident. Other shootings involved criminals who simply happened to be on school prop-

TABLE 2

Multiple Regression Analysis of the Percentage of High School Students Who Reported Having Brought a Weapon to School at Least Once During the Past Month (Study 1)

Predictor	β weight	$t(35)$	p
Culture of honor	.48	2.71	.01
Mean temperature	−.18	−1.04	.31
Proportion rural	.39	2.84	.01
Economic insecurity	−.01	−0.08	.94
Social insecurity	.16	1.05	.30
Social composition	.02	0.12	.91

Note. In the model, non-culture-of-honor states were coded as 0, and culture-of-honor states were coded as 1. R^2 for the model = 48%.

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erty when they fired their guns. We did not consider these secondary incidents as prototypical school shootings, nor did we count incidents that occurred off school property, such as gang-related drive-by shootings at a bus stop where schoolchildren were waiting, although such cases are sometimes logged by police as "school-related violence."

Data

To find cases for our analyses, we searched published case studies, government-sponsored Web sites (National School Safety Center, 2008), media reports, and other Internet databases of school violence (e.g., Know Gangs, 2008). Because our analysis was sociocultural rather than idiographic, we did not require the level of detail needed for in-depth case studies. We simply needed to know that an incident qualified as a prototypical shooting and to determine the date and location of its occurrence. We found a total of 108 incidents that qualified as prototypical school shootings. Because these incidents occurred over a 20-year period, we expanded our state-level demographic control variables to include data from both 1994 and 2004 (using the same data sources as in Study 1, except as noted). The means of 1994 and 2004 state-level poverty, median income, unemployment, divorce rate (Singh, Mathews, Clarke, Yannicos, & Smith, 1995), proportion rural, and social composition were computed. Because the Gini index of income inequality was not assessed by the U.S. Census Bureau consistently over the past 20 years, we computed the mean of 1989, 1999 (U.S. Census Bureau, 2008b), and composite 2005 to 2007 (U.S. Census Bureau, 2005–2007) levels, as these were the most relevant years for which the U.S. Census Bureau had available data. In addition, we used the same data for mean state temperature and housing stability as we used in Study 1. In Study 2, the same two factors emerged from a factor analysis using multiyear composite means as emerged using only the 2004 levels in Study 1.

Results and Discussion

As in Study 1, three of the five state-level demographic control variables differed significantly between culture-of-honor and non-culture-of-honor states (Table 1). Whereas the data from high school students used in Study 1 were anonymous, we were able to ascertain some descriptive information about most of the shooters in Study 2, although complete data were not available for the entire sample because of the brevity of reporting on many of the low-profile incidents. Among the 100 cases in which sex of perpetrator could be determined, 97% of the perpetrators were male. In the 94 cases in which age was reported, the mean perpetrator age was 18.3 years (although 50% were between 14 and 16 years old). Of the 60 cases in which race of the perpetrator could be determined from press reports or other sources, 37 perpetrators were Caucasian, 12 were Black, 5 were Asian, 2 were Native American or Alaskan, 3 were Latino, and 1 was Indian. Most (63%) of the shootings occurred at a high school, 23% occurred at an elementary or middle school, and 13% occurred on a college or university campus. The predominant motive for most of these shootings could not be reliably determined, although explicit references to bullying or teasing by peers, romantic rejection, or some form of reputation threat were made in about 28% of the cases.

Our first assessment of the relation between culture of honor and school shootings examined individual occurrences. Of the 108 prototypical shootings in our database, 75% occurred in culture-of-honor states. Thus, exactly 3 times as many school shootings occurred in culture-of-honor states as in non-culture-of-honor states. Even considering that 56.7% of the population lived in a culture-of-honor state during the period under examination, a binomial test of proportions revealed that 75% is a significantly greater proportion than expected by chance, $p < .001$. It is worth noting that when we examined the subset of school shootings in our database that were classified previously by Newman et al. (2005) as rampage shootings, we found that almost the same percentage (80%) occurred in culture-of-honor states.

To control for key demographic variables that might covary with the culture of honor, our next assessment of the culture-of-honor hypothesis involved a multiple regression analysis of the per capita number of shootings in each state. Specifically, we regressed shootings per capita on the dichotomous culture-of-honor variable, as well as on mean state temperature, social composition, proportion rural, and the economic- and social-insecurity factors described in Study 1. In this regression analysis ($R^2 = .38$), culture of honor remained a statistically significant predictor of shootings per capita, $\beta = .38$, $t(43) = 2.13$, $p < .05$, $d = 0.65$; culture-of-honor states had more school shootings ($M = 0.58$ per million residents) than did non-culture-of-honor states ($M = 0.24$ per million residents). As shown in Table 3, both temperature, $\beta = -.43$, $t(43) = 2.35$, $p < .05$, $d = 0.72$, and social composition, $\beta = -.51$, $t(43) = 3.25$, $p < .01$, $d = 0.99$, were also significant predictors. The strength and direction of the effects of temperature and social composition were surprising, although an inspection of the zero-order associations between these variables and shootings per capita suggested that the partial associations from the multiple regression

TABLE 3

Multiple Regression Analysis of School Shootings per Capita (Study 2)

Predictor	β weight	$t(43)$	p
Culture of honor	.38	2.13	.04
Mean temperature	−.43	−2.35	.02
Proportion rural	.21	1.61	.11
Economic insecurity	.17	1.08	.29
Social insecurity	.09	0.59	.56
Social composition	−.51	−3.25	.00

Note. R^2 **for the model = 38%.**

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were at least partly due to the covariances among the predictors (and to the outlier state of Alaska[4]).

The results of the multiple regression analysis increased our confidence that the raw frequency of shootings in culture-of-honor states was not simply the result of an obvious demographic difference among the states. However, this regression analysis is actually more subject to another weakness than was our analysis in Study 1. In studies that examine rare events, such as homicides, a common data-analytic problem concerns the influence of a few outliers (i.e., high frequencies) for a variable that also has a high number of zero values (for a relevant criticism of previous culture-of-honor studies, see Loftin & McDowall, 2003). The fact that 16 states in our study had zero values for shootings per capita is potentially problematic, even though the validity of the multiple regression analysis depends not on the normality of the dependent measure itself, but on the normality of the residuals from the analysis.[5] To deal with this shortcoming inherent in our rare-event data, we recoded shootings per capita into a dichotomous variable (i.e., 0 = *shootings absent*, 1 = *shootings present*) and conducted a logistic regression using all of the same predictors we used in the multiple regression model. This analysis revealed, once again, that culture of honor was a significant predictor of the likelihood of school shootings, $b = 2.46$, $SE = 1.15$, Wald statistic = 4.55, $p = .033$. The only other significant predictor of this dichotomous outcome variable was economic insecurity, $b = 1.38$, $SE = 0.64$, Wald statistic = 4.57, $p = .033$.

The results of Study 2 complement the results of Study 1 by showing that culture-of-honor predicted another measure of school violence. Study 2 built on Study 1 by using an index of school violence that did not depend on self-report and that thus could not be influenced by differences across states in the willingness to report having brought a weapon to school. Together, the data from these two studies paint a picture of a substantially increased risk of school violence in states classified as exhibiting a culture of honor.

GENERAL DISCUSSION

As we hypothesized, culture of honor was significantly associated with two indices of school violence: the percentage of high school students who reported having brought a weapon to school during the past month and the prevalence of actual school shootings over a 20-year period. States classified as culture-of-honor states had higher percentages of weapon-carrying high school students and more school shootings per capita than non-culture-of-honor states did. Some researchers have suggested that the apparent relationship between general acts of violence and the culture of honor in the United States might be at least partially explained by demographic differences between Southern and Western states, on the one hand, and Northern and Eastern states, on the other, rather than being a product of cultural differences (Anderson & Anderson, 1996). Indeed, culture-of-honor states are typically hotter, more rural, and poorer than non-culture-of-honor states, and any of these differences might explain the link between culture of honor and violence.

However, the state-level demographic variables that we examined—which included temperature, rurality, social composition, and indices of economic and social insecurity—were unable to account for the association between culture of honor and our school-violence indicators, and also were inconsistent predictors of the school-violence variables across the two studies. This marks an important difference between these indicators of school violence and more general indicators of violent crime among adults, which typically show stronger and more consistent associations with temperature, rurality, and environmental-insecurity measures similar to the ones we used (Anderson, 1989; Baron & Straus, 1988; Cohen, 1996; Lee, Bankston, Hayes, & Thomas, 2007). This difference suggests that school violence is a somewhat distinct form of aggression that should not be viewed through standard lenses. That the culture of honor appears to be such a robust predictor of school violence supports the hypothesis that school violence might be partially a product of long-term or recent experiences of social marginalization, humiliation, rejection, or bullying (Leary et al., 2003; Newman et al., 2005), all of which represent honor threats with special significance to people (particularly males) living in culture-of-honor states.

We should note, of course, that even though none of the demographic variables we examined were significantly related to school violence across both of these studies, it is quite possible that our state-level analyses underestimated the potential influence of these variables. For example, as Newman et al. (2005) have shown in their examination of rampage shootings, the majority of such shootings (60%) have occurred in schools located in rural settings. Only 8% have occurred in urban settings, and the other 32% have been suburban. Therefore, the failure of our proportion-rural variable to be a statistically significant predictor of school shootings in Study 2 (despite significantly predicting weapon carrying in Study 1) should not be taken to mean that this variable does not play any role in school violence. Further studies might uncover important associations between rurality and other demographic variables in predicting similar violent occurrences, from forms of aggression that are more common than school shootings to even rarer ones, such as bombings.

These studies are the first to demonstrate an empirical association between a sociocultural variable and school violence. Additional research seems warranted, both to complement and to extend our studies. Further refinement of the culture-of-honor

[4]Alaska stood out as a potentially problematic data point (e.g., Cook's distance > 0.80). When we omitted Alaska's data, the culture-of-honor effect increased in strength, $\beta = .48$, $p < .02$, but no other predictor remained significant.

[5]As in Study 1, we examined the normality of the residuals from the regression analysis. This analysis, as well as other problem indicators (e.g., studentized deleted residuals, Cook's distance), revealed that the normality assumption was once again met quite well.

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classification system seems particularly important, given the simple dichotomization of states we used. Surely the culture of honor is more of a continuous than a dichotomous variable, and research leading to a more nuanced classification of states might yield valuable insights into important outcomes like the ones we examined. Knowledge of how the culture of honor plays a role in school violence could also reveal ways in which educators and policymakers might identify at-risk students and understand how to address the unique psychosocial issues influencing them. Armed with such knowledge, society might keep the list of school shootings from growing at its present rate.[6]

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[6]We found no evidence that incidents of school violence were becoming less frequent, contrary to what some people have claimed. Indeed, more prototypical shootings occurred in the second chronological half of our database ($n = 58$) than in the first half ($n = 50$).

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