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REGION, RACE, AND WEAPON CARRYING

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Review

REGION, RACE, AND WEAPON CARRYING

Abstract

We attempt to determine to what extent region and race differences in weapon carrying reflect an honor culture, a gun culture, or an adaptive response to dangerous circumstances. Analyses of the National Violence against Women (and Men) Survey show that southern and western whites are much more likely than northern whites to carry guns for self-protection, but not knives or mace. In support of a gun culture explanation, the effects remain when one controls for risk of victimization. Black women are much more likely than white women to carry guns and knives, controlling for risk of victimization. Black men are more likely than white men to carry guns, but the effect disappears when one controls for risk of victimization.

Key Words: Weapons, Firearms, Race, Region, Violence, Honor Cultures

Research shows that whites from southern and western states have higher homicide rates than whites from the northern states (e.g., Parker and Pruitt, 2000; Nelsen, Corzine, and Huff-Corzine, 1994; O'Carroll and Mercy, 1989). Researchers have assumed that this pattern reflects a regional difference in violence. The most well-known explanation of the assumed regional pattern is that the South has a subculture of violence or honor culture (e.g., Gastil, 1971; Hackney, 1969; Nisbett and Cohen, 1996; Reed, 1971).¹ Research also shows that that African-Americans, regardless of region, have higher rates of homicide and other violent crime than White Americans (e.g., Bureau of Justice Statistics, 2005; Hawkins et al., 2000; see also Sampson and Lauritsen, 1994). This pattern is also sometimes attributed to a subculture of violence (Wolfgang and Feracuti, 1967). In this research we examine the cultural argument by analyzing regional and race differences in carrying weapons for protection. We attempt to determine whether these differences reflect an honor culture, a gun culture, or an adaptation to current threat.

Region and honor cultures

According to the southern subculture of violence thesis, southern whites have an honor culture where violent retaliation is normative behavior when there is adequate provocation.² In honor cultures, men are expected to defend themselves when threatened and to respond to insults with aggression. Nisbett and Cohen (1996) attribute the development of an honor culture in the South to its settlement by Scotch and Irish immigrants whose economy was based on herding (see also, Nisbett, 1993; Nisbett et al., 1995). They claim that herding cultures around the world tend to be more approving of defensive forms of violence because of the vulnerability of herds to theft (see also Campbell, 1965). Other scholars have attributed high white southern homicide rates to the history of slavery and racial domination in the South (Cash, 1941; Vandal, 2000). According to this perspective, toleration of the use of violence to control African-Americans may have led to its use in other circumstances.

The evidence is clear that southerners have more favorable attitudes toward defensive or retaliatory forms of violence than northerners (Cohen and Nisbett, 1994; Dixon and Lizotte,

1987; Ellison, 1991; Hayes and Lee, 2005). Experimental research on college students has shown that southern men react more strongly to insults than northern men on behavioral, attitudinal, and even biological measures (Cohen, Nisbett, Bowdle, and Schwarz, 1996). For example, southerners are more likely to behave aggressively in a game of “chicken,” and when provoked, they are more upset (as indicated by a rise in cortisol levels), more prepared for aggression (as indicated by a rise in testosterone levels), and display more dominance behavior (they give firmer handshakes).³ Cohen (1996) has shown that southern laws are more permissive toward the use of violence for self-defense and defense of home and property. Finally, Rice and Goldman (1994) found that homicides in the South are more likely to result from arguments than homicides in the North.

A slightly different conceptualization of the honor subculture emphasizes the tendency for southerners to use “self-help” to redress their grievances (Black, 1983; Chilton, 2004). A southern tradition developed in which disputes were handled privately, without the involvement of formal authorities (Reed, 1971). Private retribution was prominent in the South because law enforcement was either inadequate or corrupt (Cohen et al. 1996, Cusson, 1999; Courtwright, 1996; Vandal, 2000). The argument that a self-help tradition developed on the frontier could explain the higher rates of homicide in the West as well (Courtwright, 1996). High western rates have not received as much scholarly attention (Kowalski and Petee, 1991).

Race and Honor Cultures

Some discussions of violence in African American communities also imply an honor subculture. For example, Wolfgang and Feracuti (1967) argue that members of some disadvantaged groups are more likely to value a “quick resort to physical combat as a measure of daring, courage, or defense of status” (p. 153). A slight derogatory remark is likely to be seen as an occasion for violent retaliation. While race differences in violence can ultimately be attributed to racism and the historic oppression of African-Americans (e.g., Hawkins, 1995; McCord, 1997; Sampson and Wilson, 1995), honor cultures may be a more proximate causal factor.⁴ High rates

of violence in the African-American community have also been attributed to a self-help tradition that developed due to lack of access to the legal system (Black, 1983). For example, Messner et al. (2005) argue that the code of honor among southern whites diffused to southern blacks and that the black experience with lynching led them to distrust the legal system and rely more upon self-help (see also Butterfield, 1995).⁵

The evidence is unclear as to whether blacks and whites differ in their attitudes toward violence (e.g., Blumenthal, 1972; Cao et al., 1997; Erlanger, 1974; Markowitz and Felson, 1998; Rossi et al., 1974). On the other hand, race differences in violence have been observed at colleges and prisons where blacks and whites are living in similar circumstances (e.g. Harer and Steffensmeier, 1996; Volkwein et al., 1995). These results suggest that there may be cultural differences.

The Role of Guns

There is a fundamental problem with the honor culture thesis as applied to regional differences: *southerners do not have higher rates of violence than northerners*. While southerners have higher rates of homicide and aggravated assault, they do not have higher rates of simple assault (McCall, et al., 1992).⁶ Simple assaults are much more frequent than aggravated assault and homicide so the overall rates of violence are not higher in the South. Erlanger (1974) reported national data showing that Southerners have *lower* rates of fist fighting in conflict situations than northerners. Finally, recent analyses of the National Crime Victimization Survey (___ and ___, unpublished) show that southern and western whites are much more likely than northern whites to be victims of gun assaults but they do not have higher rates of knife and unarmed assault victimization (see also Bureau of Justice Statistics, 2005; Baumer, Horney, Felson, and Lauritsen, 2003). Only ten percent of these assaults involved guns.

An honor culture should lead to all types of assault not just the atypical gun fight. It appears that research in this area is attempting to explain a non-existent pattern. This evidence therefore is a serious challenge to the honor culture explanation of the regional differences that do

exist. It suggests that regional differences among whites may be due to *gun cultures* rather than honor cultures.

Research generally supports the idea that the carrying of guns for protection varies across region. For example, Kleck and Gertz (1995) found that southerners and westerners were much more likely than northerners to carry guns for protection (see also McAnney, 1993; Bankston, Thompson, Jenkins, and Forsyth, 1990).⁷ They did not examine whether regional effects differed by race; the theoretical argument for a regional honor culture applies mainly to whites. Nor did they examine regional differences in carrying other weapons.

Research has also examined the relationship between region and *owning* weapons for protection. Ownership is a much more limited response than carrying a gun for protection. Most of these guns are kept at home and reflect the desire to protect self and family from an intruder. At any rate, these studies generally show regional differences consistent with the gun hypothesis. For example, Cohen and Nisbett (1994) found that rural white southern men were twice as likely to report having guns for purpose of protection as rural midwestern white men (see also Weil and Hemenway, 1992; McAnney, 1993; Smith and Uchida, 1988). On the other hand, Young (1986) found no effects of current region of residence on whether respondents on the General Social Survey owned guns for protection.⁸

Comparisons of violent crime rates for blacks and whites also suggest that firearms play an important role in understanding race differences. Blacks have much higher homicide and aggravated assault rates than whites but only somewhat higher rates of simple assault (Bureau of Justice Statistics, 2005). Black offenders are also more likely than white offenders to use guns during violent offenses (Harlow, 2001). In addition, studies of the general population show that blacks are also more likely to carry guns than whites (Kleck and Gertz, 1995). Finally, results from studies of race differences in *victimization* rates show the importance of weapons. While blacks have higher homicide and aggravated assault victimization rates, they have slightly *lower* rates of simple assault victimization (e.g., Rennison, 2001). Recent analyses of the NCVS show

that blacks have much higher rates of gun assault victimization, similar rates of assaults with knives and other weapons, and *lower* risks of assault victimization by unarmed offenders (____ and ____, unpublished). These results are surprising, given the relatively high rates of criminal victimization among blacks.

Culture vs. Adversary Effects

An important issue in the literature is whether a particular attitude or behavior reflects a cultural tradition or is an adaptive response to current circumstances (e.g. Ellison, 1991). The concern with honor or the practice of carrying guns for protection may be a cultural tradition passed down across generations. Honor or gun cultures might persist in the South and West even after the disappearance of frontiers, herding economies, or whatever circumstances led to their development. In other words, they could involve a “cultural lag,” that is, a behavior that continues when circumstances have changed and the behavior is no longer adaptive (Ogburn, 1957). It may be that gun cultures among southern and western whites developed out of honor cultures and took on lives of their own. Perhaps gun carrying was more prevalent in these regions to begin with because they were less densely settled, the law was less effective, or they were important for hunting and defense against animals. A cultural tradition of using and carrying guns for protection might continue today, long after the disappearance of the frontier and the honor code.⁹

Alternatively, people may carry weapons because they believe the environment is dangerous and they are concerned for their safety. Prior research has shown that weapon carrying is associated with fear of crime, prior violent victimization, and county robbery rates (Ziegenhagen and Brosnan, 1990; McAnney, 1993; Williams, Singh, and Singh, 1994; Cook and Ludwig, 2004; but see Bankston, et al., 1990). This threat might be described as an *adversary effect*. The social influence of adversaries is distinct from the social influence of third parties implied by cultural arguments. The influence occurs because of spatial proximity to potentially

dangerous adversaries; membership in a subculture is unnecessary. As a result of adversary effects, violence and the tendency to carry weapons may be more contagious than other crime. When weapons are involved, this contagion process is described as an “arms race.”

Anderson’s (1999) description of the “code of the streets” in African-American neighborhoods implies an adversary effect. He argues that blacks in inner city communities often adopt an aggressive posture to avoid victimization. Even youth who are not otherwise prone to use violence -- the “decent kids” -- follow the code of the streets. Youth living in these communities are more likely to carry firearms or other weapons for protection (Nielsen, Martinez, and Rosenfeld, 2005). From this perspective, their behavior is primarily adaptive and tactical although it may reflect the indirect effects of culture.

The Current Study

In this research we examine cultural effects by analyzing regional and race differences in carrying weapons for protection. We use data on carrying of firearms, knives, and mace from the National Violence Against Women (and Men) Survey (NVAW). Our assumption is that those who carry weapons for protection--whether on their person or in their automobile--reveal a willingness to use self-help and to respond to provocations with violence. They are prepared to handle the situation themselves rather than rely upon the police. In fact, Gastil (1971) identifies the carrying of weapons as one manifestation of the southern subculture of violence.

Our measure of cultural differences is based on reports of a behavior with a specific motivation, as opposed to the more typical method of relying on attitude measures. We ask whether some groups are more likely than other groups to carry particular tools for a particular purpose. We think that a behavioral measure is a better measure of the propensity to defend oneself if attacked than an attitude measure. The measurement follows Swidler’s (1986) well-known conceptualization of culture as a “tool kit.” In our case, we consider tools in a literal sense: weapons are the tools of violence.

To isolate cultural effects, we include extensive controls for the current threat of violence to the respondent. If regional differences in weapon carrying disappear when the threat of violence is controlled, it will suggest that regional effects reflect current circumstances -- an adversary effect -- rather than a cultural tradition. If they remain with these controls, it suggests a cultural effect.

Based on the honor culture thesis we hypothesize that southern and western whites will be more likely to carry guns, knives, and mace than northern whites. In other words we predict a statistical interaction between region and race for all three types of weapons. If we only find regional differences in gun carrying among whites, it will imply a gun culture explanation.

Similarly, the honor culture thesis implies that blacks are more likely than whites to carry weapons for protection, controlling for threat. If race effects are only observed for gun carrying, then a gun culture is implicated. If the effects disappear when threat is controlled, it suggests that race differences in weapon carrying are an adaptation to current circumstances, i.e., an adversary effect.

Our examination of different dependent variables involves a form of theory testing that has been called “discriminant prediction” (Felson, 2002). This method tests theories by determining whether variables “predict everything they should and not what they shouldn’t.” Experimental psychologists use the same method -- “control construct design” -- when they compare the effect of a treatment on the predicted outcome to its effect on a related outcomes that should not be affected (McKillip and Baldwin 1990; Shadish, Cook, and Campbell, 2002). Zimring and Hawkins (1997) apply the method in Criminology in their study of international variation in crime rates. They show that crime theories cannot explain why the U.S. has a higher homicide rate than other developed countries because the U.S. does not have higher crime rates generally.¹⁰ Relevant to our research, honor cultures cannot explain regional differences in violence if effects are only observed for the relatively rare homicides and gun assaults. Similarly, honor cultures cannot explain regional and race differences in weapon carrying, if effects are only

observed for carrying firearms. Either one should abandon the theory, or posit some type of suppressor effect.

METHODS

The NVAW survey includes data collected in 1995-1996 from a nationally representative sample of 8,000 women and 8,000 men, age 18 and over (see Tjaden and Thoennes, 2000). A computer-assisted telephone interview was conducted with the respondents, asking about their experiences with violence. Our dependent variable is based on questions about whether the respondent carried weapons for protection and what type of weapon. We omitted cases with missing data on these variables. We handle missing data on explanatory variables by including a missing data dummy variable. For example, if a respondent did not reveal his or her annual income, this information is coded 1 on the “unknown income” dummy variable instead of the other income groups. Our final sample includes 7,511 men in 1,762 counties and 7,587 women in 1,734 counties.

Measurement of Weapon Carrying

Our measure of weapon carrying was based on two questions. Respondents were asked: “Do you ever carry something with you to defend yourself or to alert other people?” Those who gave an affirmative answer were asked: “What do you carry?” We use the responses to these questions to construct a five-category variable: (1) firearm; (2) knife or sharp object; (3) mace or other spray; (4) any other weapon; (5) no weapon (the reference category). The category of other weapons includes a variety of weapons and devices that were rarely used for protection (e.g. bats, keys, cellular phones). Since the meaning of this category is ambiguous, we do not present these coefficients. Note that the survey allowed respondents to report carrying more than one type of weapon. When respondents carried more than one weapon, they were coded as carrying the more lethal weapon. However, those respondents who carried mace and a weapon other than a firearm or a knife ($n = 39$) were coded as carrying mace. We did not analyze each weapon

independently, because we wanted our comparison category to be people who did not carry any weapon.

Note that the prevalence of firearms does not necessarily indicate that guns are used for protection. The prevalence of guns in Israel and Switzerland, for example, is attributable to army service among citizens, and is not related to honor cultures or the use of guns for individual protection. In addition, the use of guns for protection is different from the use of guns for sport (Wright, Rossi, and Daly, 1983). The tendency for individuals to own guns for protection and sport are correlated to some extent, but at least some of the causes tend to be different. For example, Lizotte and Bordua (1980) found that the use of guns for protection was associated with the use of guns by friends for this purpose while owning a gun for sport was related to gun ownership by parents.

Note also that some citizens who carry guns or other weapons for protection are criminal offenders. Most people who carry guns do so illegally, according to data comparing the number of people who carry guns to the number of people who have permits (Kleck, 1997). However, most are probably not committing other offenses (Kleck, 1997).¹¹ Less is known about the characteristics of people who carry knives and mace for protection. We suspect that those who carry mace -- a defensive weapon that does not produce injury -- are unlikely to be offenders.

Measurement of Independent Variables

The main independent variables are the respondent's region of residence and race/ethnicity. Region is coded as South, West, or North (the reference category). A list of the states included in each region is presented in the Appendix. Note that we do not have information about how long the respondents have lived in the region. Because some people may have moved across regions, the regional effects we observe may be conservative estimates. To the extent that these relationships reflect adversary effects, however, they should not depend on length of

residence. Race/ethnicity is coded as either White, Hispanic, Other race (e.g. mixed race, Asian, Native American, Pacific Islander, or unknown), or Black (the reference category).

Current threat is measured by the respondents' concern for their personal safety, their history of personal victimization, and characteristics of the county in which they reside, including the violent crime rate, the percent black, percent in poverty, and whether the county is in an urban area. We use multiple measures, and subjective as well as objective measures, so as to capture as completely as possible the threat experienced by the respondent. Respondents may feel more threatened if they live in urban areas with high percentages of African-Americans and poor people (Liska et al., 1982).

Concern for safety is based on the question "How concerned are you about your own personal safety?" Respondents are coded 1 for "not really concerned;" 2 for "just a little concerned;" 3 for "somewhat concerned;" and 4 for "very concerned." Note that carrying a weapon may make a person feel safer. If this negative effect is operating it would offset the positive effect of perceived safety on weapon carrying. However, we are interested in controlling for threat, not the size of the safety effect. A reciprocal effect would not affect the coefficients reflecting regional and race effects with safety controlled.

The number of prior violent victimizations is based on the total number of physical assaults, sexual assaults, threats, and stalking incidents reported by the respondent during adulthood. Respondents were asked, for example, whether anyone had pushed, slapped, or hit them, threatened or attacked them with a weapon, forced them to have sex, or followed or spied on them (see Tjaden and Thoennes, 2000). Multiple victimizations by the same offender were counted as a single victimization.

To measure the county-level control variables, we linked respondents to their county of residence based on the FIPS code. We used data from the 1990 Census to determine the percentage of residents who are Black, the percentage of households living in poverty, and the percentage of respondents who live in rural or urban areas. The percent households living in

poverty is based on the proportion of families with less than \$20,000 annual income. Counties were coded as “rural” when 80% or more of their population live in rural areas based on the 1990 census coding, as “urban” when 80% or more of their population live in urban areas (the reference category), and as “mixed” in the remaining cases.

We used the Uniform Crime Reports for the years 1990-1995 to construct an index of criminal violence in their county. The index is based on the log of the total annual rate of homicide, rape, robbery, and aggravated assault. Note that some scholars have questioned the validity of county-level UCR data (see Maltz and Targonski, 2002, 2003; Lott and Whitley, 2003, for discussions). For example, some police departments, especially in smaller counties, do not report their crime statistics every year. We address this problem by ignoring data from years in which counties report no incidents of simple assault, based on the assumption that a county must have had at least one simple assault. We then computed an average based on the number of years reported. Also, some States, such as Mississippi and Vermont, have especially large gaps of UCR coverage. We replicated our analyses omitting the 9 States with the greatest gaps in UCR coverage (see Lott and Whitley, 2003). The results were similar to those we present. Finally, note that in the examination of the effects of county crime rate we control for individual differences in personal victimization and concern for safety. These variables may mediate the effect of the aggregate crime rate.

Control variables at the individual level include the respondent’s age, annual income, and level of education. The respondents’ annual income is in 1995 dollars, from all sources, before taxes. It is coded as either low income (less than \$20,000, the reference category), medium income (\$20,000 to \$49,999), high income (\$50,000 or more), or unknown income. The level of education is treated as continuous, coded from 1 to 7, where 1 is “no schooling,” 2 is “1st-8th grade,” 3 is “some high school,” 4 is “high school graduate,” 5 is “some college,” 6 is “4 years college degree, and 7 is “postgraduate.”

Analytic Strategy

Because of the clustered nature of the data, we use a multilevel modeling strategy (see Raudenbush and Bryk, 2002). The multilevel multinomial logistic regression models are estimated with HLM software. The multinomial logistic approach is useful to assess the likelihood of carrying of a specific weapon vs. no weapon, while taking into account the likelihood of carrying a different weapon. The individual level variables are entered at level 1 and the county level variables are entered at level 2. Because an honor culture implies stronger effects for men, we present the data for men and women separately.

We add two multiplicative terms to test our predicted interaction effects: white x south and white x west. Regional honor codes should be stronger among whites than nonwhites. Nonwhites in this comparison include blacks, Hispanics, and people of other or unknown race.

RESULTS

Descriptive statistics for weapon carrying and the explanatory variables are presented separately for men and women in Table 1. The table shows that the favorite weapon for men is a firearm (12.4%) while the favorite weapon of women is mace (16.4%). Women are more likely than men to carry some weapon for protection (30.1% vs. 23.6%; $p < .001$) and to be concerned about their safety (2.7 vs. 2.4; $p < .001$).

Insert Tables 1, 2, and 3

The results from the multinomial logistic regressions for weapon carrying for males are presented in Table 2 while the results for females are presented in Table 3. Equation I excludes the threat variables while equation II includes them. The results reveal strong region x race interactions for gun carrying, which can be seen in the table. Analyses not presented in the table show that none of the interactions for knife or mace carrying were significant. For men, interaction coefficients for knife carrying were $b = .05$ ($p = .87$) for white southerners and $b = .56$

($p = .11$) for white westerners. For women, the interaction coefficients were $b = .25$ ($p = .46$) for white southerners and $b = .16$ ($p = .71$) for white westerners. For mace carrying, the corresponding numbers were $b = .12$ ($p = .80$); $b = .37$ ($p = .49$); $b = .08$ ($p = .68$); and $b = .44$ ($p = .08$). In Table 3, we present the results for gun carrying based on interactive equations and the results for mace carrying based on additive equations, since only the former were significant. Thus the estimates in Table 3 are actually based on two separate runs. Otherwise it would have been necessary to double the size of both tables.

The interactive effects of region \times race on gun carrying do not change much when we control for the threat variables. The coefficients are very similar for equations I and II. The results support the idea of gun cultures. We graph the means in Figure 1. They reveal that white southerners and westerners are much more likely to carry guns for protection than white northerners. This pattern is observed for both women and men, although the pattern is much stronger for women. The regional differences among blacks are smaller. The results suggest that the odds of southern or western white men carrying guns for protection are about twice as high as that of northern white men. The odds of a southern white woman carrying a gun are about *six* times higher than the odds of a northern white woman carrying a gun. For western white women the odds are nearly five times higher.¹²

Insert Figure 1

Although we do not observe significant region \times race interactions for carrying knives or mace, we do observe two main effects of region. Southern men are more likely than northern men to carry knives while southern women are more likely than northern women to carry mace. These effects are not as strong as the regional differences in carrying guns and they do not change much when we control for threat.

We also observe main effects for race. Black men are more likely than white men to carry guns. The effect becomes much smaller and statistically nonsignificant, however, when we

control for threat in equation II. Black men are no more likely to carry knives and mace. In fact, when we control for threat, Black men are much less likely to carry mace than white men.

The race effects for women are much stronger and do not change much when we control for threat. Black women are much more likely to carry guns and knives than white women. For example, the results from equation II show that the odds of a northern black woman carrying a gun is nearly five times higher than the odds of a northern white woman carrying a gun. The odds are three times greater for knives.

We also observe effects for most of the threat variables. Prior victimization and concerns for safety have strong positive effects on the carrying of any weapon, for both men and women. Respondents are no more likely to carry guns or other weapons if they live in counties with high violent crime rates, however.¹³ On the other hand, both men and women are more likely to carry guns if they live in counties where a high percentage of residents have low income. In addition, men are more likely to carry a gun in counties with a higher proportion of black residents. This evidence is consistent with the idea of adversary effects. Analyses not presented show that these relationships do not depend on the race or socioeconomic status of respondents. In other words, we find no evidence of a statistical interaction between race of respondent and percent black in the county or socioeconomic status of respondent and percent poor in the county. Finally, men who live in urban counties are less likely to carry firearms for protection than men who live in counties that have an urban-rural mix.

We also observe some interesting effects on carrying mace among women. Women who are young, educated, and have higher income are more likely to carry mace. These demographic effects are just as strong when we control for threat, suggesting cultural effects.

Finally, we mention few other significant effects in passing (1) young respondents are generally more likely than older respondents to carry weapons; (2) respondents with higher income are more likely to carry guns; (3) educated men are less likely to carry guns and knives, while educated women are more likely to carry guns.

DISCUSSION

By far, the strongest regional pattern we observe involves firearms. White southerners and westerners are much more likely to carry guns for protection than white northerners. These regional differences are particularly strong for women. We do not observe these statistical interactions when we examine the carrying of other weapons. In addition, the effects do not change much when we introduce controls for the threat of victimization, suggesting that the effects are due to cultural differences.

Our evidence suggests that there is a culture among southern and western whites that favors carrying guns for protection. By carrying guns, southern and western whites show a propensity to respond to provocations and handle adversaries themselves. The regional patterns may explain why southern and western whites have high rates of homicide and gun assaults but not high rates of unarmed assault. Recall that the same region-race interaction was observed for gun assault victimization with the National Crime Victimization Survey (___ and ___, unpublished). The strength of the statistical interactions and the consistency of the pattern in different data sets with different dependent variables is striking. The results increase our confidence that guns are a key factor in explaining regional differences.

The results provide more limited support for a regionally-based honor culture. We observe some effects of region that do not involve firearms: (1) southern men are more likely than northern men to carry knives; (2) southern women are more likely than northern women to carry mace. These differences are not nearly as strong as regional differences in gun assaults, and they do not depend on race. The results suggest that, if honor cultures are playing a role in regional differences, that role is less important than the role of gun cultures. It may be that honor cultures operated in the past, but primarily regional differences in gun carrying remain.

Our results suggest that the use of firearms can also help explain race differences in violence. However, the evidence only provides mixed support for a gun culture argument. Black

women are much more likely than white women to carry guns for protection, controlling for threat. While they are also more likely to carry knives, the gun effect is stronger. This evidence is consistent with both a gun culture and an honor culture argument. Black men are also more likely to carry guns than white men, but they are no more likely to carry knives (or mace). The difference in gun carrying is primarily due to the greater threat they experience, suggesting that it is not cultural. It may be that some other factor offsets the direct effects of race for men. For example, perhaps black males are more likely to anticipate being questioned and searched by the police. In addition, it is illegal for convicted felons to carry firearms, and black males are more likely than white men and black females to have criminal records.

We also observe evidence of a cultural effect in the use of mace. Mace is more likely to be the weapon of choice for young, educated, middle-class women. These demographic effects are just as strong when we control for threat, suggesting cultural differences. In other words, mace is much more likely to be in the weapon of choice in the tool-kit of “yuppie” women. Mace is different from the other weapons, however, in that its effects are temporary. Apparently, young, middle-class women desire to protect themselves but prefer a less harmful method of self-defense than guns and knives. It is also possible that they prefer mace because they want some protection but are not confident or skilled in the use of guns and knives.

Our claims for cultural effects depend on the assumption that we have adequately controlled for current threat. One could argue, for example that the county level measures do not adequately capture contextual effects. However, we used a variety of measures at both the individual and county level. Most of our threat measures have substantial effects on weapon carrying including county level measures of race and class. People are more likely to carry all three types of weapons when they feel unsafe or they have been victims of violent crime and those who live in proximity to poor people and African-Americans are more likely to carry guns for protection. Yet, with the exception of black males, controlling for measures of threat had little effect on the effects of region and race.

Another counter-argument is that honor cultures primarily affect gun carrying because guns are the most effective weapon available. However, one could just as easily make the opposite argument. Knives are much cheaper and more readily available than guns, they do not require a permit, and people probably have less inhibitions about carrying knives (or mace) than guns. Yet, we believe there is some merit to the argument that guns reflect tactical concerns of those living in honor cultures. We now turn to that possibility.

Can Adversary Effects Account for the Patterns?

The fact that rates of knife and unarmed assault victimization are no higher in the South is a strong challenge to the idea of an honor culture. It is difficult to understand why honor cultures would not have high rates of common fist fights. Most people do not carry guns. On the other hand, research supporting the idea of an honor culture in the South is also persuasive. Recall, for example, evidence that Southerners differ from Northerners in their attitudes toward retaliatory violence and in their behavioral and physiological response to provocations (e.g., Cohen and Nisbett, 1994; Cohen, Nisbett, Bowdle, and Schwarz, 1996). In addition, we found some regional differences in carrying knives and mace. These findings suggest that the honor culture thesis should not be abandoned. However, if it is to be retained, there must be some sort of suppressor effect to explain why it is primarily observed for gun carrying and gun violence.

Given the evidence from our study and prior studies, we suspect that an adversary effect helps explain why regional differences are only observed for gun carrying, gun assaults, and homicides. While the prevalence of guns might lead to gun violence and an arms race, it may also reduce the prevalence of unarmed violence and violence using less lethal weapons. Fighting with fists or knives becomes too dangerous if adversaries might be armed with a gun. Thus, citizens are less likely to carry less lethal weapons because they are ineffective against gun toting offenders. Offenders are unlikely to engage in an assault without a gun if they think adversaries are armed and prone to retaliate. Guns and honor cultures may also deter verbal aggression.

They may explain why southerners tend to be more polite than northerners (Cohen, Vandello, Puente, and Rantilla, 1999). In sum, serious violence is contagious but it may be a deterrent to more minor forms of violence.

This perspective is supported by evidence showing that increases in gun homicides over time tended to reduce the incidence of lethal violence by other means in Chicago neighborhoods (Griffiths and Chavez, 2004). Also, Cook and Ludwig (2004) found that youth were less likely to threaten others with weapons when they lived in counties where guns were prevalent. Finally, evidence shows that the region and race of *victims* affects whether offenders use guns, controlling for the offenders' own characteristics (___ and ___, unpublished). Offenders were particularly likely to use guns if the victim was a southern white or a black, particularly a black man. This tactic is adaptive if they expect these targets to be armed with guns themselves.

Adversary effects may explain why regional differences in gun carrying are stronger for women in this study. One would have expected honor cultures to affect men more than they affect women, since courage and the display of toughness are more important for men. The fact that that regional and race differences are stronger for women is problematic for the honor culture argument. However, women must contend with adversaries who are mostly men. The advantage of carrying a gun may be even greater for them, given men's advantage in physical strength (Felson, 1996). If they interact with men who are quick to retaliate or well-armed then they may think they need a gun for protection. Thus, homicides and assault offenders are more likely to use guns when their victims are male (Felson and Messner, 1996).

Adversary effects also can explain why respondents are more likely to carry guns if they reside in counties that have a higher percentage of poor people and African-Americans. Those who live in proximity to poor people and African-Americans are more likely to carry guns for protection, presumably because of their stereotypes about these groups. The fact that the pattern is observed regardless of the race and socioeconomic status of the respondent suggests that their stereotyping reflects statistical discrimination rather than prejudice. We do not, however, find

that residents of counties with high violent crime rates are particularly likely to carry guns. It could be that respondents do not respond to county crime rates because they are not aware of them. The race and economic status of residents of the county is much more visible. Thus, Liska et al. (1982) finds that both white and nonwhite residents of cities with a high proportion of minorities have higher fear of crime, controlling for the actual crime rate.

In conclusion, our research points to the importance of firearms in regional and race variation in violence. It also points to the theoretical importance of proper conceptualization of the dependent variable and the importance in research of examining multiple outcomes. Honor cultures cannot explain regional and race differences in weapon carrying and assault, if effects are mainly observed for behavior involving firearms. We have argued that gun cultures, honor cultures, and adversary effects help explain regional and race variation in violence in the United States.

Notes

1. Higher homicide rates in the South are due, to some extent, to higher levels of poverty and greater numbers of African-Americans in that region (Loftin and Hill, 1974; Parker, 1989; Parker and Pruitt, 2000; Smith and Parker, 1980; McCall, Land, and Cohen, 1992).
2. Unfortunately, the idea of a subculture exaggerates the extent to which members are alike (Markowitz and Felson, 1998). Like others who use the term, we only mean that members of some groups are more likely than members of other groups to have certain attitudes or behave in particular ways.
3. On the other hand, regional differences in attitudes toward general violence are not observed (e.g., Dixon and Lizotte, 1987).
4. Cultural explanations are always incomplete explanations—one needs to explain their structural or historical origins. We only mention these origins in passing since we have no evidence to address them.
5. More recent discussions emphasize an oppositional culture in African-American communities to explain high rates of violence (e.g. Anderson, 1999). Note, however, that race differences are primarily observed for violent crime, when other demographic factors are controlled (e.g., Deane, Armstrong, and Felson, 2005).
6. They do not find effects for rape or robbery, which supports the idea that the subculture of violence is concerned with retaliatory violence.
7. Results from studies of youth do not show consistent race or regional differences in gun carrying (Sheley and Wright, 1995; Lizotte et al. 2000; Cook and Ludwig, 2004).
8. Young's identification of protective gun owners was indirect: gun owners who were not hunters. Note that he did find that women who were socialized in the South were more likely than other women to own a gun.
9. The civil war also had an effect, according to Courtwright (1996): "Revolvers made their first appearance in the 1830s and became commonplace after the Civil War when the country was awash with military pistols. Men, especially southerners, carried pistols as part of their daily apparel. Concealed guns were so common in Kentucky after the Civil war that when a gentleman ordered a pair of pants the tailor automatically inserted a pistol pocket (p. 42)."

10. Gottfredson and Hirschi (1990) use this form of theory testing in their development of the general theory of crime. They argue that the versatility of offenders indicates the importance of self-control.

11. Research suggests that youth who engage in criminal behavior themselves are more likely to carry weapons for protection (DuRant, Getts, Cadenhead, and Wood, 1995; Hemenway and Miller, 2004; Kudjo, Auinger, and Ryan, 2003; Webster, Gainer, and Champion, 1993; Tewksbury and Mustaine, 2003).

12. In analyses not presented we include a control for whether the state had laws restricting or forbidding the carrying of firearm. It could be that these laws reflect a gun subculture, so we preferred not to include them in the main analysis. At any rate, the results were similar whether this variable was included or not.

13. When concern for safety, victimization, and percent black and percent poor are left out of the equation, the violent crime index has small and sometimes borderline effects on knife carrying and mace carrying but no effect on gun carrying.

Table 1. Descriptive Statistics

	Men %	Women %
Individual variables	N = 7511	N = 7587
Weapon carrying		
Firearm	12.4	3.2
Knife	4.9	2.9
Mace	2.3	16.4
Other weapon	3.9	7.6
No weapon	76.4	69.9
North	44.2	45.5
South	33.4	35.5
West	22.4	19.0
White	78.0	77.7
Black	7.8	9.2
Hispanic	5.3	6.4
Other/unknown race	8.9	6.7
Low income	26.0	47.3
Medium income	39.8	27.2
High income	18.6	5.7
Unknown income	15.6	19.8
Age (mean)	42.4	44.0
Education (mean)	4.9	4.7
Concern for safety (mean)	2.4	2.7
Victimization (mean)	0.7	0.8
County variables	N = 1762	N = 1734
Violent crime index (Log 10, mean)	2.2	2.2
Percent Black (mean)	8.4	8.9
Percent Poor (mean)	39.6	39.8
Urban	17.9	18.2
Rural	18.6	17.2
Mixed urban-rural	63.5	64.6

Table 2. Multilevel Multinomial Logistic Regression for Weapon Carrying by Men
(Unstandardized coefficients, Standard Errors in parentheses)

Individual Level	Firearm		Knife		Mace	
	I	II	I	II	I	II
South	.581** (.203)	.437* (.210)	.383** (.128)	.304* (.134)	.311 (.178)	.220 (.189)
West	-.052 (.249)	.189 (.253)	.138 (.157)	.069 (.163)	.130 (.209)	.087 (.229)
White	-.458* (.205)	-.216 (.216)	-.060 (.185)	.110 (.198)	.298 (.332)	.774* (.338)
Hispanic	-.369 (.243)	-.182 (.250)	-.095 (.219)	.003 (.223)	-.106 (.398)	.140 (.404)
Medium income	.458** (.101)	.524** (.103)	-.188 (.133)	-.152 (.134)	.306 (.217)	.348 (.218)
High income	.650** (.123)	.814** (.127)	-.354 (.195)	-.276 (.197)	.397 (.260)	.441 (.264)
Age	-.004 (.003)	-.000 (.002)	-.024** (.004)	-.021** (.004)	-.018** (.006)	-.012* (.006)
Education	-.102** (.032)	-.076* (.033)	-.170** (.049)	-.176** (.050)	.099 (.069)	.089 (.071)
Concern for safety	--	.219** (.036)	--	.170** (.051)	--	.462** (.079)
Victimization	--	.419** (.031)	--	.385** (.041)	--	.422** (.056)
South x White	.536* (.219)	.476* (.224)	--	--	--	--
West x White	.776** (.263)	.674* (.267)	--	--	--	--
County Level						
Violent crime index	--	-.222 (.165)	--	.251 (.235)	--	-.211 (.339)
Percent Black	--	.010* (.004)	--	-.002 (.006)	--	.004 (.009)
Percent Poor	--	.023** (.005)	--	.008 (.007)	--	-.001 (.010)
Rural	--	.250 (.177)	--	-.241 (.282)	--	-.331 (.444)
Mixed urban-rural	--	.291** (.106)	--	-.016 (.145)	--	-.159 (.212)
Intercept	-1.57** (.199)	-3.61** (.444)	-.893** (.279)	-2.73** (.618)	-3.87** (.413)	-6.49** (.886)

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

Note: Variables for Other/unknown race and Unknown income were included in the equation but not presented.

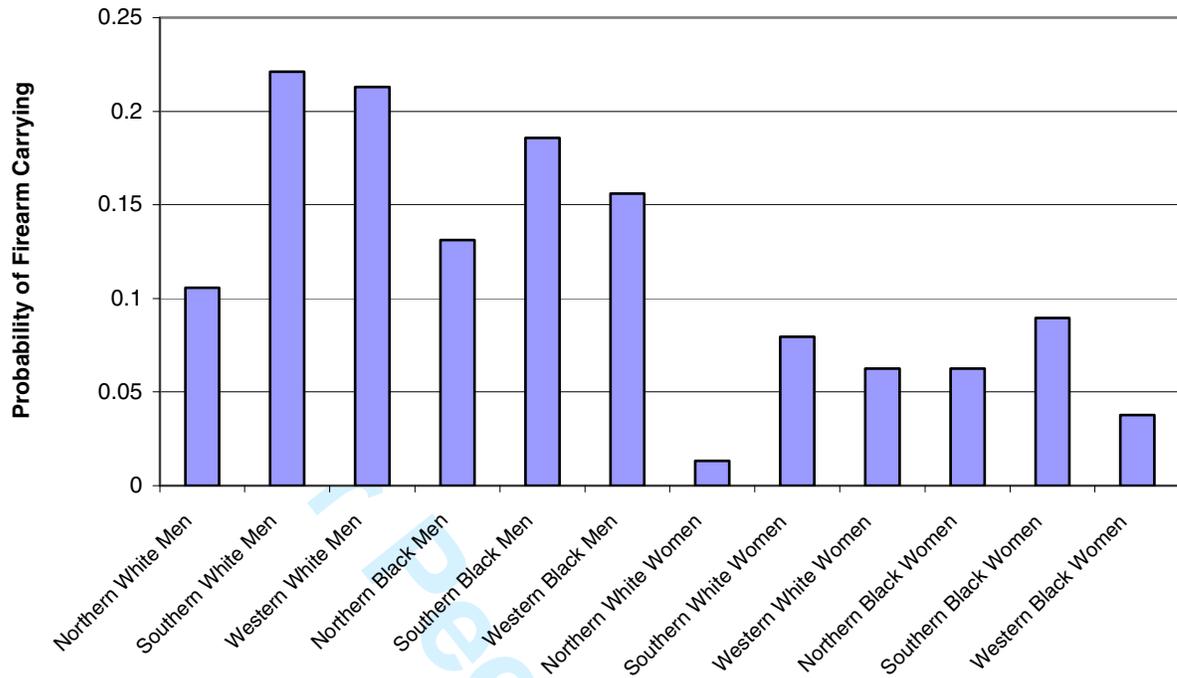
Table 3. Multilevel Multinomial Logistic Regression for Weapon Carrying by Women
(Unstandardized coefficients, Standard Errors in parentheses)

Individual Level	Firearm		Knife		Mace	
	I	II	I	II	I	II
South	.706*	.408	.290	.187	.263**	.216*
	(.307)	(.312)	(.161)	(.175)	(.075)	(.084)
West	-.730	-.604	.197	.012	-.136	-.151
	(.537)	(.537)	(.208)	(.228)	(.103)	(.113)
White	-1.51**	-1.61**	-1.31**	-1.12**	-.037	.209
	(.350)	(.366)	(.171)	(.191)	(.112)	(.119)
Hispanic	-1.33*	-1.27*	-1.42	-1.27**	-.690**	-.497**
	(.514)	(.525)	(.290)	(.295)	(.156)	(.158)
Medium income	.399*	.489**	-.043	-.034	.300**	.287**
	(.164)	(.166)	(.172)	(.174)	(.079)	(.080)
High income	.431	.656*	-.663	-.603	.297*	.293*
	(.280)	(.284)	(.434)	(.436)	(.140)	(.142)
Age	-.020**	-.016**	-.028**	-.024**	-.031**	-.028**
	(.005)	(.005)	(.005)	(.005)	(.002)	(.002)
Education	.072	.132*	-.046	-.030	.108**	.105**
	(.064)	(.064)	(.069)	(.070)	(.031)	(.031)
Concern for safety	--	.206**	--	.242**	--	.334**
		(.067)		(.072)		(.034)
Victimization	--	.273**	--	.283**	--	.128**
		(.041)		(.042)		(.025)
South x White	1.42**	1.51**	--	--	--	--
	(.377)	(.383)				
West x White	2.19**	2.20**	--	--	--	--
	(.592)	(.596)				
County Level						
Violent crime index	--	-.545	--	.555	--	-.153
		(.280)		(.316)		(.149)
Percent Black	--	.005	--	-.002	--	.006
		(.006)		(.007)		(.004)
Percent Poor	--	.032**	--	.002	--	-.003
		(.008)		(.009)		(.004)
Rural	--	.371	--	.048	--	-.275
		(.282)		(.372)		(.175)
Mixed urban-rural	--	.132	--	.087	--	-.164
		(.178)		(.188)		(.090)
Intercept	-2.59**	-3.83**	-.740	-3.45**	-.794**	-1.68**
	(.421)	(.819)	(.410)	(.887)	(.186)	(.401)

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

Note: Variables for Other/unknown race and Unknown income were included in the equation but not presented.

Figure 1. Predicted probability of firearm carrying



Note: Predicted probabilities are calculated from the multinomial logistic equation in Table 2 using the following formula: $p = \frac{\exp[g_1(x)]}{1 + \exp[g_1(x)] + \exp[g_2(x)] + \exp[g_3(x)] + \exp[g_4(x)]}$. Estimates are calculated assuming respondents with the medium income category and the average on every other control variable.

Appendix 1. States by Regions

North	South	West
Connecticut Illinois Indiana Iowa Kansas Maine Massachusetts Michigan Minnesota Missouri Nebraska New Hampshire New Jersey New York North Dakota Ohio Pennsylvania Rhode Island South Dakota Vermont Wisconsin	Alabama Arkansas Delaware District of Columbia Florida Georgia Kentucky Louisiana Maryland Mississippi North Carolina Oklahoma South Carolina Tennessee Texas Virginia West Virginia	Alaska Arizona California Colorado Hawaii Idaho Montana Nevada New Mexico Oregon Utah Washington Wyoming

Note: Based on U.S. Census, with Northeast and Midwestern states classified as North.

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