Previously identified predictors of public punitiveness include attitudinal, experiential, background, and demographic characteristics. Given the influence of parenthood on certain attitudes and beliefs, it may also affect how strongly individuals endorse harsh punishment for criminals. Few studies have explored how parenthood influences general policy preferences or support for criminal justice measures specifically, and findings have been mixed. The author estimated linear ordinary least squares regression equations, using national random telephone survey data, to test for direct effects of parenthood on measures of punitive attitudes toward juveniles and adults and overall. Two- and three-way interactions with gender and concern about crime were also estimated, and although the additive effects of parenthood on punitiveness were significant only for attitudes toward adult offenders, gender and concern about crime moderated its effects on punitive policy support, with fathers and parents for whom crime was less salient being more punitive. These findings suggest that research testing only linear influences may overlook more complex relationships.

**Keywords:** punitive attitudes; parental status; gender; concern about crime; moderated effects

**Expansion of Punitiveness**

An unprecedented proliferation of punitive policies has taken place within the past few decades in the United States, and the increase continues...
at an alarming rate. Recent figures indicate that for the first time in U.S. history, more than 1 in every 100 adults is incarcerated in jail or prison, making this nation the foremost incarcerator in the world (Pew Center on the States, 2008). The United States now spends an unprecedented $49 billion a year to lock up criminals (Pew Center on the States, 2008). The use of noninstitutionalizing criminal justice sanctions has expanded as well. The U.S. Department of Justice (2008) confirmed that probation, the most dominant form of correctional supervision, grew by 379% from 1980 to 2006. The use of parole increased by 362% during the same period. Other alternatives to incarceration, such as electronic monitoring and diversion programs, have also been used more frequently in recent years. Overall, by the end of 2006, more than 7.2 million people were under some form of correctional control, either on probation, in jail or prison, or on parole (U.S. Department of Justice, 2008). This accounted for nearly 3.2% of all U.S. adult residents, or more than 1 in every 31 adults. The incidence of the most punitive sanction, the death penalty, has also dramatically increased. Statistics provided by the U.S. Department of Justice (2007a) indicate that between 1976 and 2007, a total of 1,099 convicted offenders were executed. The past 10 years have been especially punitive, with 61% of these executions (667) taking place between 1998 and 2007. In short, according to a variety of indicators, the past few decades have experienced unparalleled expansion of every form of criminal sanction.

Several explanations for this punishment trend have been offered. Some reason that rising crime rates are to blame for the punitive policies and criminal sanctions implemented during this period, but changes in crime do not correspond to the official responses to it. According to the Federal Bureau of Investigation’s Uniform Crime Reports, the crime rate has decreased over the past 20 years. From 1987 to 2006, it decreased from approximately 5,576 to 3,808 per 100,000 inhabitants. Although the crime rate spiked in 1991 (5,898 per 100,000), it steadily decreased by 35% since then, rising only slightly after 2005 (U.S. Department of Justice, 2007b. The National Crime Victimization Survey indicates an analogous trend. These data show that violent crime peaked in 1994, with a violent victimization rate of 51.2 per 1,000 households. However, in 2005 the violent crime rate was much lower, at 21 per 1,000 households. Survey data show that property crime consistently decreased after peaking in 1976, from a rate per 1,000 households of 544.2 in 1976 to 154 in 2005 (U.S. Department of Justice, 2006). It is clear that although criminal punishments were getting harsher, incarceration rates increasing, and sentences getting longer, the amount and severity of crime
were actually decreasing. Crime simply cannot account for the changes the American penal system has witnessed.

An alternative explanation for the harshness of the U.S. criminal justice system is that the American population has grown substantially in the three decades witnessing this dramatic growth and that the criminal justice system has merely grown along with it. However, the expansion of the prison population has nearly quadrupled the rate of growth of the general populace. The overall population has grown by only about 28% since 1972, compared with a 500% increase in the prison population. In 25 years, the prison system has multiplied by 6 times to become the world’s largest (Currie, 1998). The increasing number of U.S. residents simply cannot explain the substantial growth of the criminal justice system.

It is also suggested that the harsher treatment of criminals stems from specific policies that have become more punitive over the past few decades (Tonry, 1996, 1999). As the national crime rate peaked in the early 1980s, a well-known “war on crime” was followed by a more targeted and specialized “war on drugs” several years later. Both were designed to combat the menace of crime and drugs in a very powerful and visible manner. In reference to these phenomena, Michael Tonry (1995) stated that “the drug war’s effect on prison populations has been substantial, and since the mid-1980s it has been the single most important cause of [prison] population increases” (p. 113). Austin and Irwin (2001) explained that the war on crime resulted in elected officials who have harangued on the street crime issue and passed laws resulting in more punitive sentencing policies, judges who have delivered more and longer prison terms, and government criminal justice functionaries who have supported the punitive trend in criminal policies. (p. 222)

Some of these well-known punitive policy initiatives include the implementation of mandatory minimum sentences, such as California’s “three strikes and you’re out” law and Florida’s “10-20-life” statute. In fact, most states have incorporated, and are presently using, some sort of mandatory minimum sentencing structure. These and other habitual offender sanctions are especially sensitive to waves of punitive sentiment and encourage the intensification of the current imprisonment binge (Crawford, Chiricos, & Kleck, 1998; Tonry, 1996). Other recent changes in the criminal justice system reflect an evolving response to crime that is increasingly punitive. The abolition of parole, longer terms of probation, harsher sentences for crimes
that involve the presence or use of firearms, the prosecution of juveniles as adults, and the restriction of prison inmates’ leisure activities, as well as the labeling of repeat offenders as lifetime “gang members,” “sexual predators,” and “three-strikes felons,” are among the many objective indicators that punitiveness within America’s justice system is proliferating (Crawford et al., 1998; Currie, 1998).

It is clear that neither crime rates nor population growth can account for U.S. punitiveness. And although harsh criminal justice policies are largely responsible for harsh criminal punishment, what is not apparent is why these policies have gotten dramatically tougher in recent decades. At the same time that a wide range of criminal justice policies and practices have intensified, many Americans have expressed strong support for this treatment of suspected and convicted criminals. Americans’ enthusiasm for “getting tough on crime” is an important alternative explanation for the growing punitiveness of the criminal justice system (Austin & Irwin, 2001; Currie, 1998; Green, 2006; Mauer, 1999; Miller, 1996; Tonry, 1996; Warr, 1995). Because elected officials have both a personal and a political stake in satisfying their constituents’ expectations, public opinion is often the driving force behind public policy (Flanagan, 1996; Green, 2006; Monroe, 1979; Page & Shapiro, 1983; Page, Shapiro, & Dempsey, 1987), “particularly on issues as emotive and prominent as crime and punishment” (Green, 2006, p. 131). The powerful role that public support has in influencing lawmakers about crime policy exists regardless of how well informed it is (Flanagan, 1996), which may be why punishments continue to expand despite the absence of expected results. Although it is unlikely that this explanation entirely accounts for the intensification of criminal sanctions, the prospect that public sentiment may be manifested in these policies has propelled much of the research on punitive attitudes.

Endeavoring to better understand this justice-oriented conservatism, an impressive array of studies on the correlates and predictors of punitiveness has assessed the effects of demographic, background, attitudinal, and experiential characteristics on the public’s policy preferences. However, because of broadly divergent methodological approaches from study to study (including differences in sample size, mode of data collection, measure operationalization, and type of statistical analysis), clear and consistent conclusions have been somewhat limited. Despite variations, prior studies have shown that in general, those who are more punitive are male, White, less educated, older and middle aged, politically conservative and Republican, religious, Protestant, fundamentalist, evangelical, those for whom crime and violence are more salient, and those with negative perceptions about racial and ethnic
minorities (for a more extensive review of independent influences on punitiveness, see Welch, 2004).

**Parental Status and Attitudes**

It has been said that “there are few single events in a person’s life which create such extensive waves of change (and long term ripples) as parenthood” (Palkovitz, 1988, p. 4). This change in parental status is “characterized by change of large proportion” that is “uniquely complex” (Palkovitz, 1988, pp. 2-3), is “intense and prolonged” (Newman & Newman, 1988, p. 314), and has “serious and far-reaching consequences” (Palkovitz, 1988, p. 3). Not surprisingly, common to the studies on the transition to parenthood is the conclusion that this dramatic life-course change affects attitudes, beliefs, and expectations (Brezina & Vincent, 2006; Feldman & Nash, 1984; McGillicuddy-DeLisi, 1980; Miller & Sollie, 1980; Newman & Newman, 1988; Palkovitz, 1987; Palkovitz & Copes, 1988; Wakefield & Uggen, 2004). It is somewhat surprising, however, that the specific effects of parenthood on individual attitudes and beliefs have not been more thoroughly examined in empirical research (Brezina & Vincent, 2006; Palkovitz, 1988; Schwartz, Guo, & Kerbs, 1993). Although many studies have explored various attitudes of parents, only a limited number have compared the differences between parents and nonparents. In fact, much of the literature regarding attitudinal differences between those with and without children derives merely from theoretical speculation or is extrapolated from analogous situations (Palkovitz & Copes, 1988). In the handful of studies endeavoring to test the influence of parental status on attitudes, most effects have either been statistically insignificant (Lamont, Schmalzbauer, Waller, & Weber, 1996; Paglia & Room, 1998; Smith, 2002; Thompson, Chaffee, & Oshagan, 1990; Wilson 1995), inconsistent (Baron & Hartnagel, 1996; Brezina & Vincent, 2006; Crowe & Bailey, 1995; Latimer, Harwood, Newcomb, & Wagenaar, 2001; Scales et al., 2004; Schwartz et al., 1993), or conditional (Brezina & Vincent, 2006; Latimer et al., 2001, Morgan & Waite, 1987; Schwartz et al., 1993).

Among studies that have found differences in attitudes between parents and nonparents, some outcomes may be partially attributable to methodological limitations. For instance, in a survey of 143 Idaho residents in which parents were found to have more conservative beliefs about alcohol consumption than nonparents, no controls for other influences were included in the analysis (Pritchard & McDonald, 2006). Parental status was found to influence traditional attitudes toward women, but again, control variables were
not used, and the nonrandom sample of 37 couples makes conclusions dubious (Feldman, 1981). Perceptions of stereotypes, decision making, and marital satisfaction differed between voluntarily child-free individuals and those with children (Somers, 1993). However, that study implemented a nonequivalent group design that included 74 couples who were able to confer about survey responses, which may have biased the results of the analyses of covariance.

Despite the lack of clear evidence on the effects of parental status in general, some interesting findings have emerged from research on attitudes about crime and justice. Parenthood increases pressures toward criminality among former offenders (Wakefield & Uggen, 2004), but as social bond and control theories suggest, parents are otherwise generally regarded as purveyors of social norms (Brezina & Vincent, 2006) and tend to feel an altruistic responsibility to protect their children (Newman & Newman, 1988). Rational choice and deterrence theories also provide support for the presumption that parents serve as a force for law and order (Brezina & Vincent, 2006). These theories might lead one to conjecture that parents would be more supportive of conservative criminal justice policies than individuals without children. National surveys indicate that parents are slightly more supportive of childproofing firearms, although there are few differences between parents and nonparents when it comes to attitudes about gun owners’ liability for children’s misuse of unsafely stored guns or measures to restrict the use and ownership of guns by minors (Smith, 2002). In a study assessing attitudes toward alcohol laws, parents were more likely than those without children to report that it is never acceptable for minors to drink, that minors should not be allowed to drink at parties with no parents present, and that sting operations by police are justifiable (Pritchard & McDonald, 2006). Other research found that parents are more likely than nonparents to support restrictive regulations on alcohol sales, advertising, and marketing and to favor increasing taxes on the sale of alcohol (Wagenaar, Harwood, Toomey, Denk, & Zander, 2000), although Latimer et al. (2001) found no relationship between parental status and attitudes on alcohol policy. Some parents even turn their children over to law enforcement, possibly to deter future criminality and to protect them from hurting themselves and others (Garner, 2008). Parents are increasingly being held legally responsible for their children’s crimes (McPhee, 1997; Nurse, 2006), so self-interest may also encourage support for harsh policies that would deter delinquency.

Alternatively, social control and rational choice theories provide the theoretical foundation for expecting parents to be less punitive toward
crime. Rational choice theories suggest that the criminalization of parents for their children’s offenses may lead to self-interested support for more lenient policies, if parents think they could be the target of criminal sanctions. Among the studies finding parents less conservative in their policy preferences is one concluding that the parents of minor children are about 50% more likely than those without adult or minor children to oppose holding parents legally liable for the consequences of their children’s illegal underage drinking (Crowe & Bailey, 1995). Social bonding and control theories also imply a compelling argument that parenthood results in support for less restrictive criminal justice policies, because of a protective response toward individuals like those to whom parents are bonded or attached. However, research testing this idea found that parents were not significantly more likely to oppose restricting access to college student aid for those convicted of underage drinking (Crowe & Bailey, 1995). Other studies determining that having children is associated with criminal justice attitudes found that parents are less likely than nonparents to report that stores and bars are not careful enough about selling alcohol to minors (Pritchard & McDonald, 2006) and more likely to prefer that juveniles not get the same sentences as adults in court (Schwartz et al., 1993). Schwartz et al. (1993), however, were unable to establish a significant difference between parents and nonparents on attitudes toward sending juvenile violent, property, or drug offenders to adult court and incarcerating juveniles in adult prisons for violent, property, or drug crimes.

**Moderating Effects on Parental Status**

One possible reason for the inconsistent and contradictory findings on the influence of parental status on various attitudes is that there are unassessed interaction effects (Brezina & Vincent, 2006; Morgan & Waite, 1987; Palkovitz & Copes, 1988; Schwartz et al., 1993). The impact of important life events, such as parenthood, can have very different consequences, depending on individual characteristics, the route that leads one to become a parent, the process of adjusting to parenthood, and the qualities of the social context in which it occurs (Bronfenbrenner, 1979; Morgan & Waite, 1987). Studies gauging moderating influences on the relationship between parental status and various social positions have found significant interactions with political ideology, moral values, and religious beliefs (Brezina & Vincent, 2006); marital status (Morgan & Waite, 1987); age
(Brezina & Vincent, 2006); the ages of parents’ children (Scales et al., 2004); race (Morgan & Waite, 1987; Schwartz et al., 1993); and gender (Morgan & Waite, 1987; Palkovitz & Copes, 1988). However, empirical research has not sufficiently measured whether these types of interactions are present when predicting criminal justice attitudes in general or punitiveness in particular.

It is not difficult to imagine how gender might moderate parental status. Some argue that because “women generally assume disproportionate responsibility for children, they are likely to be affected by parenthood much more than men. Thus, an ascribed characteristic—gender—should condition parenthood effects” (Morgan & Waite, 1987, p. 542). Similarly, it is possible that “the transition to parenthood has fewer significant impacts on the father than on the mother’s belief systems” (Palkovitz & Copes, 1988, p. 195), and as a result, one would expect gender to moderate any effects on individual attitudes. Although these parental stereotypes may be somewhat antiquated in the 21st century, the few models testing interaction effects of gender and parental status on certain attitudes have been statistically significant (Morgan & Waite, 1987). It is notable, however, that this interaction has never been tested for its potential influence on criminal justice attitudes.

Crime salience is another social construct that has been found to promote punitiveness and could conceivably moderate the influence of parental status on attitudes. Most studies assessing the additive relationship show that when crime salience (typically operationalized as prior or vicarious victimization, fear, worry, or concern about crime) and punitiveness are significantly associated, those for whom crime is more salient are more supportive of harsh criminal justice policies. Contrary to expectation, though, most estimates have been statistically insignificant, with measurement and controls apparently relevant (Cullen, Clark, Cullen, & Mathers, 1985; Lane, 1997; Langworthy & Whitehead, 1986; Sprott & Doob, 1997; Taylor, Scheppele, & Stinchcombe, 1979). For concern about crime, in particular, studies assessing its effects on punitive attitudes have not produced consistently significant findings (Cullen et al., 1985; Rossi & Berk, 1997; Tyler & Boeckmann, 1997; Tyler & Weber, 1982). Some have shown that concern about crime is a significant predictor of punitive policies in general (Rossi & Berk, 1997; Tyler & Boeckmann, 1997), but no significant results were produced in eight separate multivariate models in other research (Tyler & Weber, 1982). Tests of moderation that have examined contextual relationships with punitiveness include those of Chiricos, Welch, and Gertz (2004), who found significant differences at high and low levels of concern about
crime, and Rossi and Berk (1997), who found no significant differences on seven measures of punitive attitudes. Because so few studies have specifically assessed the effects of concern about crime on punitiveness, or concern about crime as an interacting influence in particular, it is difficult to draw firm conclusions, suggesting that more investigation of it as a potential moderator is merited.

The Present Study

It is apparent that “the relationship between parental attitudes, beliefs, expectations and parental behaviors is not as straightforward as researchers and family interventionists may desire” (Palkovitz & Copes, 1988, p. 197) and that “further examination of the effects of parental status is warranted and is likely to be productive” (Brezina & Vincent, 2006, p. 171). The aim of this study was to extend prior research by specifically examining the influence of parental status on harsh policy preferences. The following nondirectional primary hypothesis was tested:

**Hypothesis 1:** Parents are more or less punitive toward offenders than are nonparents.

On the basis of previous findings about the effects of parenthood on attitudes, as well as the potential for interactions with gender and crime salience, first-order moderating effects on this relationship were also tested. Subsequent hypotheses were as follows:

**Hypothesis 2:** Gender moderates the influence of parenthood, with mothers being more punitive than fathers and nonparents.

**Hypothesis 3:** Concern about crime moderates the influence of parenthood, with parents who are more concerned being more punitive those who are less concerned and nonparents.

Beyond this, it is my contention that punitiveness is also affected by a three-way interaction among parental status, gender, and concern about crime. Hence, the final hypothesis tested was as follows:

**Hypothesis 4:** Concern about crime has significant and positive second-order moderating effects on gender and parental status in relation to punitiveness, such that mothers who are more concerned about crime are more punitive.
Data and Method

Data Collection and Sample

Data for this research were obtained by surveying a national sample of adults between January and April 2002. A two-stage semistratified Mitofsky-Waksberg telephone sampling technique was used, ensuring that phone numbers randomly generated by computer were stratified to most accurately reflect the geographic distribution of the population and enhance the representativeness of the sample. A 12-time callback rule was used to increase the odds of contacting individuals at the numbers originally designated, but when contacts declined to participate, the telephone number generation process functioned to contact numbers in close residential proximity. Interviewers surveyed individuals answering the phone, introducing an inherent answering bias, but a review of sample characteristics indicated that it did not differ from other survey samples in any significant way. The final sample was 56% female, 81% White, 8.7% Black, and 7.5% Hispanic, and the average respondent was 46 years old. Although this distribution was not perfectly representative of population means, it was not atypical for telephone survey research (Lavrakas, 1987). A sample of 885 individuals completed the 15-minute survey, which assessed perceptions about crime and support for criminal justice policies. Using the definitions recommended by the American Association for Public Opinion Research, among all contacts, this survey had a cooperation rate of 40%, a completion rate of 93%, and a refusal rate of 30%.

Dependent Measures

Punitiveness toward criminals has been represented in many ways in prior research and includes the level of support for the death penalty, assessments of court leniency, judgments about the severity of juvenile sanctions, opinions about money spent on fighting crime, and the hypothetical assignment of criminal penalties for assorted crimes through the use of vignettes. In light of some inconsistencies in previous analyses, I assessed support for three separate measures of punitiveness—toward juvenile offenders, toward adult criminals, and toward all violators—to determine if discrepant findings (especially those pertaining to parental status, gender, and crime salience) were attributable to the particular dependent measures used. Specifically, the goal was to conclude whether harsh attitudes vary according to who would be the focus of penal policies. It is plausible that those with children of their
own are more hesitant to endorse punishment for juveniles than for adults. Alternatively, perceptions about juvenile potential for rehabilitation may encourage a tougher initial stance from parents (or nonparents). The inclusion of a measure of overall punitiveness allowed the evaluation of policy support for all types of law violators. By implementing separate measures of this variable, I hoped that significant relationships would emerge that prior research has failed to identify.

In this study, eight questions gauging punitiveness toward specific policies were asked (Table 1). Using an 11-point scale (ranging from 0 to 10, with 10 indicating the most support), respondents indicated support for five adult criminal sanctions and three sanctions for juvenile offenders. The mean level across all eight items was 6.32. Each measure was then factor analyzed to ensure proper weighting in three indexes representing punitiveness toward juveniles, punitiveness toward adults, and overall punitiveness, the α reliability coefficients for which were .79, .82, and .88, respectively. The Kaiser-Meyer-Olkin measures of sampling adequacy (.901, .954, and

<table>
<thead>
<tr>
<th>Factor</th>
<th>M</th>
<th>SD</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punitiveness toward juveniles</td>
<td>5.58</td>
<td>2.62</td>
<td>.791*</td>
</tr>
<tr>
<td>Locking up more juvenile offenders</td>
<td>5.90</td>
<td>5.81</td>
<td>.708</td>
</tr>
<tr>
<td>Using the death penalty for juveniles who murder</td>
<td>4.06</td>
<td>3.42</td>
<td>.673</td>
</tr>
<tr>
<td>Sending repeat juvenile offenders to adult courts</td>
<td>6.87</td>
<td>3.03</td>
<td>.743</td>
</tr>
<tr>
<td>Punitiveness toward adults</td>
<td>6.76</td>
<td>2.48</td>
<td>.821*</td>
</tr>
<tr>
<td>Making sentences more severe for all crimes</td>
<td>7.01</td>
<td>2.94</td>
<td>.736</td>
</tr>
<tr>
<td>Executing more murderers</td>
<td>6.44</td>
<td>3.57</td>
<td>.742</td>
</tr>
<tr>
<td>Making prisoners work on chain gangs</td>
<td>6.54</td>
<td>3.36</td>
<td>.664</td>
</tr>
<tr>
<td>Taking away television and recreation privileges from prisoners</td>
<td>6.64</td>
<td>3.29</td>
<td>.622</td>
</tr>
<tr>
<td>Using more mandatory minimum sentencing statutes, such as “three strikes” for repeat offenders</td>
<td>7.19</td>
<td>3.12</td>
<td>.638</td>
</tr>
<tr>
<td>Overall punitiveness</td>
<td>6.32</td>
<td>2.36</td>
<td>.884*</td>
</tr>
</tbody>
</table>

Note: Factor scores are based on individual contributions to the eight-item punitiveness index.

* These represent α reliability coefficients.
.893, respectively) indicated a very high degree of common variance among the items in each index.

Independent Measures

The focal independent variable, parent, was a bivariate measure representing whether survey participants had children, the mean score for which indicated that 73% were parents and 27% were not. Gender was coded as a dummy variable (female = 1) predicted to have first-order moderating effects on the association of parental status and punitiveness. On the basis of research indicating that women are slightly less punitive than men in most circumstances (Applegate, Cullen, & Fisher, 2002; Miller, Rossi, & Simpson, 1986; Schwartz et al., 1993; Sprott, 1999), I predicted a negative linear link with punitiveness but a positive interaction with parental status. Concern about crime was measured by the single question “How concerned are you about crime?” with responses ranging from 0 to 10 (with 10 representing the most concern), and was hypothesized to have positive additive, first-order, and second-order moderating influences on the main relationship.

Other independent variables controlled for potential influence on the hypothesized relationships. Age is a continuous measure that has had mixed effects on punitive attitudes (McCorkle, 1993; Rossi & Berk, 1997; Schwartz et al., 1993). In this study, tests for regression violations indicated that it had a nonlinear association with each measure of punitiveness, so age was logged in these analyses. Political ideology, predicted to be positively related (Barkan & Cohn, 1994; Baron & Hartnagel, 1996; Baumer, Rosenfeld, & Messner, 2000; Borg, 1997; Rossi & Berk, 1997), was a dichotomous variable determined by whether respondents considered themselves to be liberal or moderate (coded 0) or conservative (coded 1). Education was coded according to the level of achievement, ranging from no high school to postgraduate work, and generally has had negative associations with punitiveness in other research (Cohn, Barkan, & Halteeman, 1991; Rossi & Berk, 1997, Schwartz et al., 1993). The perceived percentage of violent crime, expected to increase public punitiveness (Chiricos et al., 2004), was the estimation of the percentage of U.S. crimes that involve violence. The mean of 53.8% was a considerable overestimation of its prevalence. In prior studies, racial prejudice has been found to increase harsh policy preferences (Borg, 1997; Chiricos et al., 2004; Cohn et al., 1991; Feiler & Sheley, 1999), so factor analysis was used to create an index of racial prejudice (α = .77) on the basis of responses to five questions concerned with the acceptability of having someone of a different race in relatively close social proximity. The final
independent measure controlled was race (White = 1), because Whites have been found to be more punitive (Cohn et al., 1991; Miller et al., 1986; Secret & Johnson, 1989).

**Analytical Approach**

Means and standard deviations of variables in the analyses are provided in Table 2, along with bivariate correlations of each independent measure with the dependent variable for overall punitiveness. Although the net effects of each remain to be seen when other factors are controlled, the strongest correlations for punitive attitudes toward criminals were with perceived percent violent crime (.340), concern about crime (.314), education (−.292), and racial prejudice (.276). Ordinary least squares regression was used to examine the effects of the explanatory and control variables on the three measures of punitive attitudes. After addressing potential violations of regression assumptions, including the use of certain ordinarily measured variables and nonlinearity, a series of 12 multivariate regression models were estimated (Table 3), for which the primary empirical predictions of interest were hypothesized additive and multiplicative relationships including both two-way and three-way statistical interactions. The empirical expectation was for statistically significant positive coefficients for the parent variable in the
Table 3
Ordinary Least Squares Regression of Punitiveness on Parental Status (n = 773)

<table>
<thead>
<tr>
<th>Independent Measure</th>
<th>Punitiveness Toward Juveniles</th>
<th>Punitiveness Toward Adults</th>
<th>Overall Punitiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td>Age (ln)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-.248**</td>
<td>-.248**</td>
<td>-.263**</td>
</tr>
<tr>
<td></td>
<td>(.105)</td>
<td>(.105)</td>
<td>(.105)</td>
</tr>
<tr>
<td>Political conservativism</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.285***</td>
<td>.281***</td>
<td>.276***</td>
</tr>
<tr>
<td></td>
<td>(.068)</td>
<td>(.069)</td>
<td>(.068)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-.094***</td>
<td>-.095***</td>
<td>-.095***</td>
</tr>
<tr>
<td></td>
<td>(.025)</td>
<td>(.025)</td>
<td>(.025)</td>
</tr>
<tr>
<td>Perceived percentage of violent crime</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.007***</td>
<td>.007***</td>
<td>.007***</td>
</tr>
<tr>
<td></td>
<td>(.001)</td>
<td>(.001)</td>
<td>(.001)</td>
</tr>
<tr>
<td>Racial prejudice</td>
<td>.336***</td>
<td>.335***</td>
<td>.344***</td>
</tr>
<tr>
<td></td>
<td>(.070)</td>
<td>(.070)</td>
<td>(.070)</td>
</tr>
<tr>
<td>White</td>
<td>.095</td>
<td>.097</td>
<td>.101</td>
</tr>
<tr>
<td></td>
<td>(.083)</td>
<td>(.083)</td>
<td>(.083)</td>
</tr>
</tbody>
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(continued)
Table 3  (continued)

<table>
<thead>
<tr>
<th>Independent Measure</th>
<th>Punitiveness Toward Juveniles</th>
<th>Punitiveness Toward Adults</th>
<th>Overall Punitiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td>Concern about crime</td>
<td>.073***</td>
<td>.073***</td>
<td>.111***</td>
</tr>
<tr>
<td></td>
<td>(.015)</td>
<td>(.015)</td>
<td>(.025)</td>
</tr>
<tr>
<td>Female</td>
<td>–.174**</td>
<td>–.104</td>
<td>–.173***</td>
</tr>
<tr>
<td></td>
<td>(.068)</td>
<td>(.123)</td>
<td>(.068)</td>
</tr>
<tr>
<td>Parent</td>
<td>.019</td>
<td>.073</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>(.080)</td>
<td>(.112)</td>
<td>(.080)</td>
</tr>
<tr>
<td>Parent × Female</td>
<td>–.100</td>
<td>–.038</td>
<td>–.322*</td>
</tr>
<tr>
<td></td>
<td>(.145)</td>
<td>(.150)</td>
<td>(.141)</td>
</tr>
<tr>
<td>Parent × Concern</td>
<td>–.055*</td>
<td>–.106**</td>
<td>–.048*</td>
</tr>
<tr>
<td>about crime</td>
<td>(.029)</td>
<td>(.041)</td>
<td>(.028)</td>
</tr>
<tr>
<td>Female × Concern</td>
<td>–.047</td>
<td>–.047</td>
<td>–.054</td>
</tr>
<tr>
<td>about crime</td>
<td>(.048)</td>
<td>(.048)</td>
<td>(.047)</td>
</tr>
<tr>
<td>Parent × Female ×</td>
<td>.106*</td>
<td>.106*</td>
<td>.104*</td>
</tr>
<tr>
<td>Concern about crime</td>
<td>(.058)</td>
<td>(.058)</td>
<td>(.058)</td>
</tr>
<tr>
<td>Intercept</td>
<td>.707*</td>
<td>.672*</td>
<td>.780*</td>
</tr>
<tr>
<td></td>
<td>(.392)</td>
<td>(.395)</td>
<td>(.393)</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.213</td>
<td>.213</td>
<td>.217</td>
</tr>
</tbody>
</table>

Note: Estimates are unstandardized regression coefficients, with standard errors in parentheses. Coefficients for the three models with the non-theoretically driven product of Female × Concern About Crime are not shown.

*p < .05, **p < .01, ***p < .001 (one-tailed tests, except for Models 1, 5, and 9, which used two-tailed tests).
main-effects models, the two-way interaction between parental status and gender, the two-way interaction between parental status and concern about crime, and the three-way interaction among parental status, gender, and concern. To enhance the interpretation of coefficients, concern about crime was mean centered in all models and product terms (Jaccard & Turrisi, 2003).8

**Research Findings**

Additive Models 1, 5, and 9 show the simple main effects of parental status on punitiveness in the test of Hypothesis 1. Although the coefficient for parent was not statistically significant in Models 1 and 9, being a parent did increase punitive support for adult offenders, as shown in Model 5. Women were less punitive than men toward juveniles, although gender did not influence this feeling toward adults or overall. As expected, concern about crime was associated with harsher policy preferences on each dependent measure. Race was not predictive of punitiveness toward juveniles, although it was significant in Models 5 and 9, with Whites being more punitive toward juveniles than minorities. All other predictors of punitive attitudes were statistically significant in these additive models, and in the same direction on each of the three measures; punitiveness was associated with being younger (in logged transformation), politically conservative, and less educated; perceiving a greater percentage of crime that involves violence; and being racially prejudiced, White, and more concerned about crime.

The next stage of analysis, the results of which are shown in Models 2, 6, and 10, involved examining the first-order moderating effects of gender on the relationship between parenthood and the measures of punitiveness by including the bilinear interaction term Parent × Female (in the process recommended by Aiken & West, 1991; Baron & Kenny, 1986). This produced significant and negative single-degree-of-freedom omnibus interaction contrasts in predicting punitiveness toward adults and overall, but not toward juveniles. Although this suggests that fathers were more punitive than either mothers or men without children, the calculation of z scores produced in tests of slope differences (as explicated by Paternoster, Brame, Mazerolle, & Piquero, 1998) showed that this was true only in terms of punitiveness toward adults. Thus, this test of Hypothesis 2 revealed that it was fathers, not mothers, who were more punitive, albeit only in relation to adult criminals. As for nonparents, men were less punitive, but not significantly more so than women. Although the addition of the interaction term Parent × Female significantly improved the goodness of fit of the models in which it was significant (for punitiveness toward adults,
For overall punitiveness, $F = 3.11, p < .05)$, an examination of the squared semipartial correlations for the product term revealed that the strength of this interaction effect accounted for only 0.5% of the variance in punitiveness toward adults and 0.3% of the variance for punitiveness overall.

Models 3, 7, and 11 present the results of adding the product term Parent × Concern About Crime to the additive equations in the course of testing Hypothesis 3. For all three punitiveness measures, the two-way interaction was statistically significant ($p < .05$) and negative, with z scores confirming that the slopes changed significantly according to level of concern and parental status. The results indicated that parenthood made individuals more punitive (toward juveniles and adults and overall) only for those who were less concerned about crime, defying expectations. Parental status was apparently less influential on punitive attitudes for those who were already more concerned about crime. For nonparents, concern was also influential; as expected, when they were less concerned about crime, they were less punitive. $F$ tests showed that Parent × Concern About Crime only significantly ($p < .05$) improved the goodness of fit for models estimating punitiveness toward juveniles and overall ($F = 3.89$ in Model 3, $F = 3.04$ in Model 7, and $F = 4.147$ in Model 11), with $R^2$ values of .217 for punitiveness toward juveniles, .248 for punitiveness toward adults, and .265 for overall punitiveness.

Finally, the fully specified equations were estimated in Models 4, 8, and 12, introducing the three-way product term Parent × Female × Concern About Crime, as well as each lower ordered interaction term. For all three dependent measures, there was a significant and positive interaction among parental status, gender, and concern about crime, with the second-order concern about crime moderating the first-order influence of female gender on the relationship between parental status and each type of punitiveness. To facilitate the interpretation of the three-way coefficients (as recommended by Jaccard & Turrisi, 2003), Table 4 presents the mean scores for each punitiveness measure as a function of parental status and gender when concern about crime equals its sample mean of 7.64. The interaction parameter for this $2 \times 2$ table is the mean difference of parental status for women minus the mean difference of parental status for men, when concern about crime is average. The coefficients for the three-way product term indicate how much the two-way interaction parameter changes given a one-unit increase in concern about crime. Thus, in Model 12, if concern about crime were to increase by one unit, the interaction parameter would be $-0.072$ ($-0.184 - 0.112 = -0.072$). For a visual representation of these effects on overall punitiveness, Figure 1 illustrates the three-way interaction among simple
slopes for men and women at high and low levels of concern about crime for parents and nonparents. The most notable moderated effect is how parental status increased punitiveness dramatically for men who were less concerned about crime; becoming parents made them more punitive than any other subgroup in the interaction. This was the case for each dependent measure, but some interesting differences among the types of punitiveness emerged. For instance, compared with nonparents, being a parent (for both men and women) was associated with greater punitiveness toward adults when concern about crime was high, but it was associated with less punitiveness toward juveniles. This conveys the importance of parenthood, in certain circumstances, on shaping individual beliefs.

To further clarify the nature of the second-order interaction effect, Table 5 presents means and interaction parameters of parental status and gender for punitiveness at three levels of concern about crime (as recommended by Jaccard & Turrisi, 2003). Concern about crime is divided into values of low (−1 standard deviation), medium (mean centered), and high (+1 standard deviation) to demonstrate how it conditioned the influence of gender on the relationship between parental status and punitiveness differently depending on its level. The nature of the three-way interactions is apparent from the

### Table 4
**Mean Punitiveness as a Function of Parental Status and Gender When Concern About Crime Equals Its Sample Mean**

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SE</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punitiveness toward juveniles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent, female</td>
<td>0.581</td>
<td>0.423</td>
<td>−0.249 to 1.410</td>
</tr>
<tr>
<td>Nonparent, female</td>
<td>0.615</td>
<td>0.398</td>
<td>−0.166 to 1.397</td>
</tr>
<tr>
<td>Parent, male</td>
<td>0.783</td>
<td>0.420</td>
<td>−0.043 to 1.608</td>
</tr>
<tr>
<td>Nonparent, male</td>
<td>0.778</td>
<td>0.399</td>
<td>−0.005 to 1.562</td>
</tr>
<tr>
<td>Punitiveness toward adults</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent, female</td>
<td>0.646</td>
<td>0.410</td>
<td>−0.160 to 1.452</td>
</tr>
<tr>
<td>Nonparent, female</td>
<td>0.626</td>
<td>0.387</td>
<td>−0.133 to 1.386</td>
</tr>
<tr>
<td>Parent, male</td>
<td>0.751</td>
<td>0.408</td>
<td>−0.051 to 1.553</td>
</tr>
<tr>
<td>Nonparent, male</td>
<td>0.465</td>
<td>0.388</td>
<td>−0.296 to 1.225</td>
</tr>
<tr>
<td>Overall punitiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent, female</td>
<td>0.666</td>
<td>0.408</td>
<td>−0.135 to 1.467</td>
</tr>
<tr>
<td>Nonparent, female</td>
<td>0.667</td>
<td>0.385</td>
<td>−0.088 to 1.422</td>
</tr>
<tr>
<td>Parent, male</td>
<td>0.823</td>
<td>0.406</td>
<td>0.026 to 1.620</td>
</tr>
<tr>
<td>Nonparent, male</td>
<td>0.640</td>
<td>0.385</td>
<td>−0.116 to 1.396</td>
</tr>
</tbody>
</table>
manner in which the two-way interaction parameter estimates varied across levels of concern about crime. As this second-order moderator increased, the slopes for Parent × Female decreased; for low, medium, and high concern, the two-way interaction parameters were .225, –.038, and –.303 for punitiveness toward juveniles; –.007, –.266, and –.525 for punitiveness toward adults; and .096, –.184, and –.465 for overall punitiveness. This suggests that when concern about crime was higher for women, the influence of parental status on punitiveness declined. However, for men who were less concerned about crime, being a parent became a powerful predictor of punitive attitudes. Tests for three-way slope differences (recommended by Dawson & Richter, 2006) confirmed the significance of these effects ($p < .05$), thereby partially substantiating the contention of Hypothesis 4 that there is a three-way interaction but finding unexpected directional relationships.

Additional noteworthy results were found in the fully specified equations. In each model, the three-way product terms represent how the two-way interaction parameter of Parent × Female changes given a one-unit
increase in concern about crime. In Model 4, for example, if concern about crime were to increase by one unit, the interaction parameter between parenthood and gender \((b = -0.038)\) would increase by \(.106 (−0.038 + 0.068)\). Therefore, as concern about crime increases, the effects of the two-way interactions between parenthood and female gender move away from zero. The simple main effects of both parental status and gender were significantly related only to punitiveness toward adults, but the simple main effects of concern about crime were significantly associated with each type of punitiveness \((p < .001)\) when the values of both parent and female equaled 1, which is to say that for mothers, being concerned about crime significantly increased the willingness to punish offenders. The coefficient for the two-way interaction Parent × Female suggests that when concern about crime was average, gender only moderated the effects of parenthood on punitiveness toward adults. In Model 8, the coefficient for parent \((.271)\) indicates that when respondents were female and their concern about crime was at the average level, parents were significantly more punitive toward adults than nonparents; it was insignificant in Models 4 and 12. The coefficient for concern about crime was statistically significant in all three models, which indicates that for mothers, concern about crime significantly predicted punitiveness. Meanwhile, the simple main effects of gender were not associated with the dependent measure in these equations. Across the models, those who were significantly more punitive were those with lower log ages of those who were conservative, less educated, perceived a greater percentage of violent crime, were racially prejudiced, and White (except for punitiveness toward juveniles, for which the coefficient for race was insignificant). The inclusion of three-way product terms increased the goodness of fit for each model, with \(R^2\) values of .221, .256, and .271 for Models 4, 8, and 12, respectively.

Discussion and Conclusion

To have a better appreciation for why the American criminal justice system continues to intensify, studies explore those qualities that tend to make people more supportive of the implementation of harsh policies, with the belief that public support reinforces them. The present study adds to this endeavor by examining, for the first time, how parental status affects punitiveness toward both juvenile and adult offenders. The distinction between types of offenders is an important one, because here it was found that, in testing Hypothesis 1, parenthood increases the willingness to punish criminals, but not delinquents.
This supports the idea that parents assume a more defensive stance against crime but that when it comes to young violators, their protective instincts do not impel them to favor more restrictive policies. By separately analyzing punitiveness toward juveniles, adults, and the combination, this research was able to uncover policy support that may have been obscured if the more common methods of using only single dependent measures or only single indexes were used.

Furthermore, with limited exception, previous research has relied on the analysis of linear additive influences on punitive attitudes. This approach may not be appropriate, considering the nonlinear effects discovered here. By analyzing moderating effects, this study was able to establish a more complicated relationship between parenthood and punitiveness. In testing Hypothesis 2, it is not surprising that the effects of parental status depend on gender, with mothers being less supportive than fathers of tougher criminal justice policies and men without children being less punitive than fathers. It is also not surprising that the results of Hypothesis 3 show that concern about crime interacts with parental status, but it was unanticipated that there would be more punitiveness among parents than nonparents for whom crime is less salient. On the basis of findings of prior empirical research, it is plausible that when concern about crime is high, thereby increasing punitiveness, parental status will not have any additional appreciable influence on these values. Finally, the revelation of a three-way interaction among parental status, gender, and concern about crime in the test of Hypothesis 4 shows that each of these factors has a multiplicative influence on the others when predicting punitive attitudes. These findings suggest that statistical models excluding parental status as a predictor of punitiveness, and particularly that do not include gender and crime salience as moderators, may be somewhat misspecified. When correctly specified, the models presented here explain approximately 22%, 26%, and 27% of the variance in punitiveness toward juveniles, punitiveness toward adults, and overall punitiveness.

Although this is a worthy contribution to the body of empirical research on punitiveness, it may be equally instructive for prior findings on the independent effects of gender and various measures of crime salience. Neither gender nor crime salience measures have consistently produced statistically significant effects on punitive attitudes, but the discovery of two-way and three-way interactions involving these variables indicates that research assessing only additive effects may be concealing real relationships. The failure to evaluate moderating effects on gender, as well as fear of crime or victimization, previous or vicarious victimization, worry about crime, and
concern about crime, in prior research may be one reason for many inconsistent and insignificant results. It is not sufficient to merely control for these other influences, because certain relationships may not be linear in nature. And there may be more of these nonlinear associations to explore in future research on punitive attitudes.

Policy Implications

One assumption of studies testing correlates of punitive attitudes is that by better understanding what drives these harsh criminal justice perspectives, public policy may be better formulated according to what is known about the best practices for reducing crime and victimization rather than as a response to public sentiment rooted in individual biases and circumstances. The findings presented here add to the body of literature suggesting that specific portions of the public are more punitive and thus more likely to support political initiatives to intensify criminal justice policy. This knowledge could be instrumental in helping identify the true sources of support for the punitive laws passed over the past few decades and discourage lawmakers from responding to certain segments of the public with bills that merely satiate a desire for getting tough, while not appropriately addressing the problem of crime. In addition, because this study shows that the public does not apply punitive support uniformly and that attitudes toward adult offenders are significantly different from those toward juveniles, lawmakers may also be advised to differentiate between these law violators. Like other punitive attitudes research, the findings of this study encourage policies that respond to empirical findings on justice measures that effectively reduce crime and delinquency, rather than in response to punishment preferences of particular individuals.

Study Limitations and Future Research

There are certain limitations to this research that may be beneficial to review for the sake of future improvements. The sample acquired was not fully representative of the national population, making generalizability more difficult. This is an inherent weakness of telephone survey research and is attributable to who is most likely to be home, answering the phone, and acquiescent to interviewers’ requests; acquiring a truly randomized sample would ensure the generalizability of results. In addition, missing data, and thus the use of listwise deletion of certain respondents, may have skewed results. An opinionation effect may also have been present, caused
by the ordering of survey questions. The first three questions on the survey asked respondents about perceptions of the amount and severity of crime, immediately followed by the series of more specific questions gauging punitiveness. It is possible that these initial crime questions influenced individual responses about harsh criminal policies and that both of these influenced subsequent answers. To minimize this effect, the survey began with general questions and gradually became more specific (Converse & Presser, 1986).10

Certainly, the cross-sectional nature of the survey data prevents us from knowing conclusively whether parental status or the interactions with it are causally related to punitive attitudes. It is possible that individuals who are more punitive are more likely to become parents because of similar values and traditional beliefs about family and society. It is also possible that “parents’ beliefs are challenged by their perceptions of reality: some beliefs are retained, some are altered, and others are abandoned as new experiences with parenting are accumulated” (Palkowitz & Copes, 1988, p. 192), which implies that by using cross-sectional data, researchers may miss information on the changes that occur throughout the process of parenting (or of being nonparents) over time. Future research may consider controlling for the influence of how many years someone has been a parent, how many children one has, and the ages of those children. In addition, to truly establish temporal ordering, studies on the effects of parental status and its moderators on punitiveness should consider using longitudinal methods.

Probably one of the more serious shortcomings of this study is that the number and range of possible independent influences on punitive attitudes were somewhat limited. Although this study included those found to most consistently predict punitiveness, it was not able to control for every possible influence on the dependent variable found to be significant in prior research. These include income; occupation; religion; urban, suburban, or rural residence; marital status; fear of crime; and prior victimization, among others. Although this is a potential threat to validity, this will likely be a dilemma for any researcher exploring the nature of these concepts, as analytic techniques, such as ordinary least squares regression as used in this study, cannot reasonably withstand the inclusion of an endless array of theoretically feasible, empirically grounded influences. Nevertheless, a wide variety of elements have been shown to increase support for punitive policies but had to be excluded in this research. As a result, explained variance here, as with most studies predicting punitive attitudes, remains relatively small.

Finally, it may be beneficial to examine not just who is more punitive and how, but also why fathers, and fathers who are less concerned about
crime, are more punitive. It would also be useful to know more about the reason that parenthood increases punitiveness only toward adults, not toward juveniles. Considering that the theories providing the foundation for this research suggest that either direction between the associated variables is plausible, future researchers may be interested to test social control or rational choice theories to further explore dimensions of these findings. Regardless, the results reported here convey the importance of parenthood, in certain circumstances, on shaping individual beliefs, as well as the importance of evaluating moderating effects on independent predictors of punitiveness, and parental status, gender, and crime salience in particular.

Notes

1. Some researchers have used several different measures of punitive attitudes in the same study. Others have created indexes of punitiveness on the basis of responses to several questions. Still others have used only a single survey question to assess respondents’ attitudes about criminal punishment. Some researchers have used vignettes to assess judgments of appropriate sentences for specific crimes, while others have asked questions eliciting dichotomous responses, such as “Do you favor or oppose the death penalty for persons convicted of murder?” Still other researchers have asked several questions to gauge support for a single concept, such as how respondents feel about capital punishment or the insanity defense.

2. I constructed and supervised the administration of this survey at The Research Network, a public opinion polling firm in Tallahassee, Florida, in collaboration with Marc Gertz and Ted Chiricos.

3. The Mitofsky-Waksberg stratified sampling strategy provides a telephone sample that mirrors the characteristics of a simple random sample while enhancing efficiency by first identifying phone numbers according to populations and area codes and then narrowing the options to minimize the selection of nonworking and nonresidential phone numbers.

4. Although there are many significant predictors of punitiveness in prior empirical research, in this study, I limited them according to the factors most theoretically relevant to parental status and consistently statistically significant, so as to not saturate analytical models.

5. The contexts about which respondents were asked included whether it would be okay if a family member wanted to bring a friend of a different race home for dinner, a person of a different race joined their social club or organization, they had a job in which the supervisor was of a different race, a family of a different race were to live nearby, and a person of a different race were to marry into their family. This measure was dichotomized at the median to distinguish between those scoring lower and higher on this scale.

6. Some may suggest that an analytical method specifically designed for the use of ordinal-level variables would be preferred to ordinary least squares in this instance. As described by Labovitz (1970), although some small error may result from treating ordinal variables as truly continuous, as done in a couple of instances in these analyses, “this is offset by the use of more powerful, more sensitive, better developed, and more clearly interpretable statistics with known sampling error” (p. 515). In addition, treating ordinal measures as interval level has the advantage of retaining more information about the characteristics of the data and greater versatility.
in statistical manipulation. Evaluation has shown that there is greater confidence in assuming interval qualities in a variable when there are a greater number of ordered ranks in it, as was the case here (Labovitz, 1970). Observations of the distributions of scores in ranked variables in this research did not indicate extreme responses similar to a dichotomy, so this “violation” of regression assumptions can be considered relatively inconsequential.

7. Nonlinearity was corrected with the inclusion of the log age measure and product terms. Modified Glesjer tests indicated no problem of heteroskedasticity. As is typical of models with interaction variables, assessments of tolerance levels and model variance inflation factors indicated that certain items could present multicollinearity, despite having mean centered the second-order moderator (Echambadi & Hess, 2007). However, the estimation of various subset specifications suggested that the results regarding the effects of the independent variables, particularly those for the two-way and three-way product terms, were stable and not sensitive to simultaneous inclusion (Jaccard & Turrisi, 2003).

8. The other variables hypothesized to form multiplicative relationships were not mean centered, because this practice is not appropriate for bivariate qualitative variables (Jaccard & Turrisi, 2003).

9. Not shown are separate regression results that added the nontheoretical product of Female × Concern About Crime, which was relevant only for the fully specified three-way interaction model.

10. Research about survey techniques has shown that “in the case of attitudes, even where context is shown to have an effect, it is frequently unclear that one order is better than another” (Converse & Presser, 1986, p. 41).

References


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