

Parents, Siblings, and Peers: Close Social Relationships and Adolescent Deviance

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In this study, the relations between parents, older siblings, peers, adolescents' individual characteristics, and adolescents' deviant attitudes and behaviors were examined simultaneously, using a social learning perspective and data of 121 families from inner-city Philadelphia. Results of structural equation models showed that older deviant siblings had the strongest effect on adolescent deviance. Deviant peers also played a significant role. The effects for parents varied for deviant attitudes and behaviors. Positive family relationships, parental support, and discipline consistency were associated negatively with adolescents' approval of deviance, but only parental discipline consistency and adult supervision of adolescents were related negatively to adolescents' deviant behaviors. Coefficient estimates did not differ by ethnicity/race, family structure, or the quality of the sibling relationship. However, adolescents who identified with their older sibling, were of the same gender, or had a deviant older brother tended to be affected most negatively by the deviant sibling.

The transition from childhood to adolescence is accompanied by numerous physical and emotional changes (Petersen & Taylor, 1980; Simmons & Blyth, 1987). With the physical changes that signal the end of childhood, adolescents strive to become more emotionally independent from their parents and to focus their attention more on the world outside their home (Bryant, 1982; Coleman, 1961; Simmons & Blyth, 1987). During early adolescence, parents often experience that their influence as role models and agents of

We are very grateful to Adeen Woolverton and Andrew Ward for their help with the literature review and to Ronald L. Akers, the editor E. Ellen Thornburg, and the anonymous reviewers for helpful comments on earlier drafts. The study was supported by a grant from the John D. and Catherine T. MacArthur Foundation Program for Successful Adolescent Development among Youth in High-Risk Settings. An earlier version of the paper was presented at the 2000 Annual Meetings of the American Sociological Association in Washington, D.C.

Journal of Early Adolescence, Vol. 22 No. 3, August 2002 310-349
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socialization diminishes in some areas and that the impact of peers on their child's behaviors increases (Conger & Rueter, 1996; Jessor & Jessor, 1977). Apart from peers, older siblings might serve as important role models because they went through similar transitions only a few years earlier (Carey, 1986). Hence, older siblings who are well adjusted might serve as positive examples and a source of emotional support for younger siblings. By contrast, older siblings' deviant behaviors, as defined as violent, destructive, and illegal behaviors, including substance abuse, might entice younger adolescents to experiment with deviant behaviors themselves and to seek out deviant peers (Brook, Whiteman, Gordon, & Brenden, 1983; Robins, West, & Herjanic, 1975).

The influence of parents, however, does not disappear completely once children enter adolescence (Gecas & Seff, 1990; Simmons & Blyth, 1987). Successful adjustment during the years of adolescence can depend to a high degree on the available emotional and social support in the family (Christensen & Margolin, 1988; Patterson, 1982, 1984). As role models and through their social-emotional support, parents and older siblings can have a positive impact on the personality characteristics of adolescents, such as their sense of competence and mastery, which, in turn, might facilitate further their successful transition from childhood to adolescence (Bank & Kahn, 1997; Bryant, 1982; Daniels, Dunn, Furstenberg, & Plomin, 1985; Werner & Smith, 1992; Whitbeck et al., 1991).

Although the associations between parents, siblings, peers, adolescents' personality characteristics, and successful adolescent adjustment and/or deviant behaviors have been examined in previous research (e.g., Giordano, Cernkovich, & Pugh, 1986; Robins et al., 1975; Thomson, Hanson, & McLanahan, 1994; Warr, 1993b), the simultaneous effects of those factors rarely are taken into account (Conger & Rueter, 1996). Sibling effects, in particular, are neglected most often. Using a sample of 121 families from low-income Philadelphia neighborhoods (Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999), the relations between parents, older siblings, peers, adolescents' own characteristics, and adolescents' deviant attitudes and behaviors were analyzed simultaneously in the current study, applying the Akers social learning theory of adolescent deviance and a path analysis approach. By choosing a path analysis approach, it was possible to investigate the ways in which those differing factors might be related to each other. However, due to the cross-sectional nature of the data, the actual causal directions of the effects could not be determined.

The Akers Social Learning Theory of Adolescent Deviance

The Akers (1985, 1998, 2000) social learning theory of adolescents' deviant behaviors is an extension of the Sutherland (1947) differential association theory and the Burgess and Akers (1966) differential association-reinforcement theory, all of which were developed to explain criminal or deviant behaviors. According to the Akers social learning theory, adolescents' differential association, their attitudes and imitation of other people, and the differential reinforcement of their behaviors by others affect adolescents' probability to engage in deviant behaviors.

Through associations with different people, adolescents might be exposed to differing definitions of deviant behaviors as either positive or negative. Associations that started early in life, occur frequently, take place over a long period of time, and are more intense (i.e., they involve people who are important and close to the adolescent) are likely to have the greatest impact on adolescents' attitudes and behaviors (Akers, 2000). Hence, primary groups such as family and friends are expected to have the strongest effect on adolescents' deviant attitudes and behaviors. Family and friends expose adolescents to definitions or attitudes toward deviance that are either favorable or unfavorable, act as role models that adolescents are likely to imitate, and are agents of differential reinforcement. Differential reinforcement is defined as the balance of either expected or actual rewards and punishments that tend to follow or are the consequences of nondeviant or deviant behaviors (Akers, 2000). A certain behavior is more likely to occur if the anticipated or actual rewards are greater than the anticipated or actual punishments.

The whole process of social learning is complex, reciprocal, and implies causality. For example, social learning theory posits that the impact of family and friends on adolescents' deviant attitudes and behaviors is greater than the influence of adolescents' deviant attitudes and behaviors on family interactions and friendship groups (Akers, 2000). Yet, with the current cross-sectional data, only relations between variables rather than actual causal effects can be tested.

Parents and Adolescents' Deviance

The associations between parents and adolescents' deviant attitudes and behaviors have been thoroughly investigated. Although parental power might decline during the adolescent years, parents continue to have an important influence on their children (Gecas & Seff, 1990; Simmons & Blyth, 1987). According to social learning theory, parents are usually role models of

nondeviance who provide unfavorable definitions of deviant attitudes and behaviors and reinforce those standards through disciplinary actions. However, parents who endorse deviant attitudes and behaviors themselves and are inconsistent and erratic in their supervision and disciplinary practices are likely to promote deviant attitudes and behaviors in their children (Akers, 2000).

Indeed, positive relationships within the family, parental support, a consistent and constructive parental discipline style, and adult supervision tend to be related negatively to adolescents' deviant behaviors and their association with deviant peers (Fergusson & Horwood, 1999; O'Keefe, Carr, & McQuaid, 1998; Patterson, 1982; Patterson, DeBaryshe, & Ramsey, 1989; Patterson, Dishion, & Bank, 1984; Warr, 1993b). Sankey and Huon (1999) found poor family relationships to be associated with higher levels of delinquent behaviors, possibly due to the fact that parents in those families provided poor role models and engaged in ineffective discipline strategies. Similarly, low parental support often is related to adolescent delinquency (Barnes & Farrell, 1992; Jensen, 1972; Mak & Kinsella, 1996). By contrast, adolescents with strong parental support tend to engage in less deviant behaviors than do adolescents with weak parental support, even when they associate with deviant peers (Poole & Regoli, 1979). That might mean that a close association with socially conforming parents offsets the association with deviant peers. In general, adolescents who reported that they were attached to their parents were less likely to become delinquent or to seek out deviant friends than were those who reported being less attached to their parents (Brook, Brook, & Whiteman, 1999; Marcos, Bahr, & Johnson, 1986; Massey & Krohn, 1986; Warr, 1993b). In accordance with social learning theory, adolescents in the former group will have more frequent and intense relationships (associations) with their parents and, therefore, are more likely to imitate their parents' socially conforming attitudes and behaviors. A longitudinal study by Aseltine (1995), however, found that the relation between parental attachment and subsequent delinquent behaviors was relatively weak.

Moreover, the social learning concepts of differential association and differential reinforcement tend to be corroborated by empirical research on the effects of adult supervision. Adolescents whose activities are supervised by their parents or other adults (i.e., who are less free to associate with deviant peers) are less likely to commit deviant acts than are adolescents whose behaviors usually are unsupervised and thus are more susceptible to differential reinforcement by deviant peers (Ary, Duncan, Duncan, & Hops, 1999; Hagan, 1991; Jensen, 1972; Patterson et al., 1989; Pettit, Laird, Dodge, Bates, & Criss, 2001; Svensson, 2000). That might be the reason why children from some single-parent homes have a slightly higher probability for

deviant behaviors than do children from some two-parent households (Thomson et al., 1994; Wells & Rankin, 1991). However, Barnes and Farrell (1992) found that the relation between a lack of adult supervision and deviant behaviors remained significant even after accounting for demographic and family factors. Yet, other studies have indicated that positive family relationships and a consistent parental discipline style were more predictive in preventing deviant behaviors of adolescents than was parental supervision (Galambos & Maggs, 1991; Rankin & Wells, 1990; Van Voorhis, Cullen, Mathers, & Garner, 1988).

Parents who use harsh and inconsistent discipline might foster an increase of their children's probability to engage in deviant behaviors (Conger & Rueter, 1996; Heimer, 1997; Patterson, 1982; Patterson et al., 1984). Harsh parental discipline tends to be associated with aggression in children that might lead to further deviant acts, especially if parents are not consistent with punishment. In general and in accordance with the principles of differential association, imitation, and differential reinforcement, children who grow up in families that convey an atmosphere of mutual respect and trust and who are subjected to a discipline style that is consistent and fair rather than erratic and arbitrary are most likely to feel in control of their environment and least likely to act out (Schneewind, 1995).

The effects for parents also might vary by ethnicity/race. Previous research has indicated that African American parents tended to exert greater control over their children while simultaneously offering more emotional support than did European American parents (Bartz & Levine, 1978; Giordano, Cernkovich, & DeMaris, 1993; Nathanson & Becker, 1986). However, in a study by McLeod, Kruttschnitt, and Dornfeld (1994), no significant race differences were found regarding the effects of parenting practices on antisocial behaviors.

Older Siblings and Adolescents' Deviance

Siblings also can be important role models and agents of socialization in the family (Gecas & Seff, 1990). Siblings are family members but might also be peers. As family members, siblings are not chosen as are friends but generally might have frequent contact with each other. Adolescents are exposed to older siblings' attitudes and behaviors even if they do not participate with those siblings in their activities. For those reasons, older siblings can serve as role models for younger siblings, particularly if both siblings are of the same gender or if the older sibling is a brother (Carey, 1986; Daniels et al., 1985; Dunn & Kendrick, 1982; Rowe & Gulley, 1992; Sutton-Smith & Rosenberg, 1970). Same gender siblings might develop similar interests, take part in the

same kind of activities, and spend more time together than would siblings of the opposite gender. An older brother, however, might appear, even for young girls, as a greater authority figure that is more admired than is an older sister (Sutton-Smith & Rosenberg, 1970). Given those considerations, it is not surprising that, even after controlling for parental and family characteristics, adolescents with deviant siblings as role models are more likely to engage in deviant behaviors themselves than are adolescents who have siblings that are not considered deviant (Brook et al., 1983, 1999; Conger & Rueter, 1996; Duncan, Duncan, & Hops, 1996; Robins et al., 1975; Rowe & Farrington, 1997; Rowe & Gulley, 1992; Slomkowski, Rende, Conger, Simons, & Conger, 2001). Yet, with few exceptions, most researchers who study delinquency have ignored the influence of older siblings.

What are the processes through which older deviant siblings expose their younger brothers or sisters to deviant attitudes and behaviors? In accordance with social learning theory (Akers, 1985, 1998), one possibility is that deviant siblings might acquaint their younger brothers or sisters with a subculture that includes deviant values and behaviors that might be imitated and learned by younger siblings through a kind of apprenticeship within that deviant subculture. As a result, younger siblings will find it acceptable or even desirable to associate with like-minded deviant peers outside the family and to engage in deviant activities with them (Conger & Rueter, 1996). Another possibility is that older siblings might introduce their younger siblings, particularly those who are close in age, directly into their deviant peer groups (Rowe & Gulley, 1992). In this regard, older siblings might help their younger brothers or sisters to escape parental supervision. That is, parents who are not aware of the deviant activities of the older child temporarily might transfer supervisory responsibilities over a younger child to an older sibling, believing that this will protect the younger child from harm when, in fact, the older sibling could be a source of negative influence himself or herself. For example, in an ethnographic study on "street women" (i.e., women who engage in illegal or deviant behaviors such as prostitution or forgery), Miller (1986) showed that many poor African American women were introduced and recruited into a deviant subculture by older siblings and other young relatives who were deviant.

Furthermore, even if older deviant siblings do not introduce their younger siblings to a deviant subculture or peer group directly, they still might have a detrimental influence by serving as negative role models (Bank & Kahn, 1997; Bryant, 1982) and, thus, indirectly undermining their younger brothers' and sisters' sense of competence. Adolescents who believe that their older siblings are negative role models and a failure in mainstream society

might develop doubts about their own competence and chances of success in life.

However, social learning theory would predict that the effects for older siblings vary with the degree of the adolescents' identification with older siblings and the overall friendliness or hostility of the relationship (Akers, 2000). Adolescents who want to be like an older sibling and those who have a positive relationship with an older sibling might imitate the sibling more than would adolescents who do not want to be like their older brother or sister or do not get along with the sibling (Brook et al., 1983, 1999; Rowe & Gulley, 1992).

Peers and Adolescents' Deviance

The relation between peers and adolescents' deviant attitudes and behaviors is another well-researched area (Akers, 2000). Under normal circumstances, siblings are an integral part of the family, and interactions with siblings that are close in age cannot be avoided. The association with peers, by contrast, tends to occur on a voluntary basis. Because adolescence is a time when children can start to distance themselves from their families (Coleman, 1961), peers might have an even greater influence on adolescents than do siblings and parents, particularly if family relationships are weak (Conger & Rueter, 1996; Elliott, Huizinga, & Ageton, 1985). Kandel (1996), however, argued that the influence of peers on deviant behaviors has been inflated in research and that the influence of parents has been underestimated. One important reason for that is the tendency of researchers to ignore the impact of parents on the peer selections of their child (Warr, 1993b; Wills, Schreibman, Benson, & Vaccaro, 1994).

Even though parents might have a certain influence on the peer selection of their children, to the extent that the association with peers is voluntarily chosen by the child, adolescents are active agents in forming their friendship groups. Hence, some theoretical approaches (e.g., the selection perspective) state that only deviant adolescents will seek out deviant peers (Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994). Social learning theory, however, emphasizes the reciprocal effects of selection and socialization. The theory posits that deviant attitudes and behaviors are learned *or* reinforced in interaction with deviant peers (Akers, 1985, 1998, 2000; Burgess & Akers, 1966). Although deviant adolescents actively might seek out deviant friends, once adolescents are involved with delinquent friends, delinquent socialization continues. Adolescents learn to adapt to the prevalent deviant standards of the group through observation, imitation, peer pressure, and differential reinforcement (Akers, 1998; Elliott et al., 1985; Warr & Stafford, 1991). Confor-

mity with the *norm of deviance* in attitudes and behaviors is rewarded with approval and recognition, whereas any deviance from that norm can be punished by a loss of status or even the threat of exclusion from the group (Akers, 1985, 1990; Coleman, 1961). In particular, children with low self-esteem and a low sense of competence might be inclined to submit to peer pressure to reap the benefits of deviant behaviors and to avoid negative consequences, such as exclusion from the friendship group (Hewitt, 1970; Johnson, 1979).

Delinquent peers increase the likelihood of deviant behaviors through modeling and the differential reinforcement of favorable or neutralizing attitudes and beliefs toward deviance (Akers, 2000). Thus, the similarity of deviant friends might be a combination of selective association and reciprocal reinforcement and imitation (Heimer, 1996; Thornberry et al., 1994; Warr, 1993a).

Some longitudinal research has indicated that deviant adolescents were most likely to associate with deviant friends (Conger & Rueter, 1996; Krohn, Lizotte, Thornberry, Smith, & McDowall, 1996; Matsueda & Anderson, 1998), whereas other research has shown that adolescents tended to become deviant *after* they affiliated with deviant peers (Akers & Lee, 1996; Aseltine, 1995; Elliott & Menard, 1996; Huba & Bentler, 1982; Menard & Elliott, 1994; Wills & Cleary, 1999). The reciprocal nature of the relation between peer association and deviant behaviors might explain why the empirical evidence of the direction of the process is inconclusive.

The effect for peers might differ for African American and European American youth. As members of a minority group who often experience discrimination, some African American adolescents might experience a more hostile environment in their schools and neighborhoods than would their European American counterparts (Giordano et al., 1986, 1993). Hence, they might come to regard their families as a place where they can feel safe and loved and, therefore, might be more dependent on their parents and less influenced by their peers than would European American youth. Indeed, Giordano et al. (1993) found, after controlling for socioeconomic status and family composition, that African American adolescents tended to report higher levels of parental control and family intimacy and lower levels of perceived peer pressure and intimacy with friends than did European American adolescents.

Adolescents' Individual Characteristics and Adolescent Deviance

The transition from childhood to adolescence often is accompanied by identity anxiety and identity confusion (Erikson, 1963). Although adoles-

cents begin to change from their identities as children to the more independent perspectives of adolescence, they have not gained adult status yet. Very often, they do not know how to behave and what is expected of them. Because they are still in school and live with their families, they participate only marginally in the adult world. For older male adolescents (e.g., ages 13 through 17), membership in a deviant group that promotes traditional manly virtues such as honor, valor, toughness, and loyalty might be a way to establish a "masculine" identity prior to entering the adult world (Hunt, Joe, & Waldorf, 1996; Matt, 1999; Matza, 1964). Moreover, male adolescents from disadvantaged socioeconomic backgrounds, who tend to have fewer possessions and an inferior social status than do those from economically more advantaged backgrounds, might join a deviant peer group and commit deviant acts to gain material possessions and to increase their status, reputation, and sexual attractiveness as "men" (Collison, 1996; Schwendinger & Schwendinger, 1985). After male adolescents have attained adult status through marriage and labor force participation, deviance should disappear. That perspective might explain why male adolescents tend to exhibit more deviant behaviors than do females, why deviance tends to increase during the adolescent years until the age of 16, and why only few juvenile offenders become adult criminals (Cohen & Land, 1987; Elliott, Huizinga, & Menard, 1989; Sampson & Laub, 1992, 1993; Scholte, 1999).

Developmental influences within the family, however, also might have an impact on the adolescents' transition into adulthood. Personality characteristics both of male and female adolescents tend to be affected by the quality of the interactions within the family, particularly the parent/child relationship (Akers, 2000; Schneewind, 1995). Some adolescents, therefore, might have a strong sense of competence and feel in control of their own fate, whereas other adolescents might be influenced easily by their peers and external factors, such as their school and neighborhood environments (Bandura, 1997). Edwards (1996) found that adolescents who were involved in delinquent behaviors tended to have lower self-esteem than did those adolescents who were not involved in delinquent behaviors. The more negatively adolescents view themselves, the more likely it is that they will participate in delinquent behaviors to find alternative sources of self-esteem in a deviant subculture. Similarly, in research by Sankey and Huon (1999), low social competence was found to be associated with higher levels of delinquent behaviors mediated through associations with delinquent peers. However, Jang and Thornberry (1998) did not find a significant association between lower levels of self-esteem and involvement with delinquent peers or delinquent acts.

Finally, adolescents' attitudes toward deviance is likely to predict their participation in deviant activities. According to McCord (1995), attitudes

and respect for social rules can be considered internal constraints, whereas outside forces, such as parental rules and punishments, are external constraints. Internal constraints were more likely than were external constraints to prevent deviant behaviors of adolescent boys (McCord, 1995). Therefore, adolescents' attitudes about the rules of parents and society appear to be more influential than are the attempts of parents and society to enforce the rules. Other studies have revealed similar associations between favorable attitudes toward deviant behaviors and adolescents' deviant activities (Ellickson & Morton, 1999; Elliott & Menard, 1996; Heimer, 1997; Hoge, Andrews, & Leschied, 1994; Menard & Elliott, 1994; Wills & Cleary, 1999).

Theoretical Model

Based on social learning theory and the literature review, the following theoretical model was constructed (see Figure 1). That model presents the expected relations between parents, older siblings, peers, adolescents' individual characteristics, and adolescents' attitudes and behaviors. In most families, parents are role models for their children and the primary agents of socialization for social attitudes and behaviors (McCord, 1991). Children tend to imitate their parents' attitudes and values and their parents' non-deviant or deviant behaviors (Akers, 2000). Hence, adolescents who grow up in an environment of positive family relationships, which is characterized by the successful resolution of everyday problems; the presence of positive family interactions; and the absence of negative family interactions and who feel emotionally supported by their parents would be expected to develop a sense of competence themselves. It also was predicted that those adolescents would be less likely to associate with deviant peers, develop favorable attitudes toward deviance, or take part in deviant behaviors because their parents are assumed to hold unfavorable attitudes toward deviance and to engage in socially conforming behaviors.

Furthermore, through parents' differential reinforcement, children tend to learn attitudes and behaviors that conform to their parents' standards. However, that process is likely to be less effective and successful if parents engage in inconsistent and erratic discipline practices or if their children's behaviors rarely are supervised. Therefore, it was expected that adolescents who know that their parents are consistent rather than erratic in administering discipline and whose parents make sure that they are supervised by adults would be less likely to become deviant and to seek out deviant friends. Parents who provide clear rules and guidelines also are likely to have adolescent children who feel competent in life. Finally, it is possible that the effects for parents on adolescents' lives vary by ethnicity/race and family structure. African American

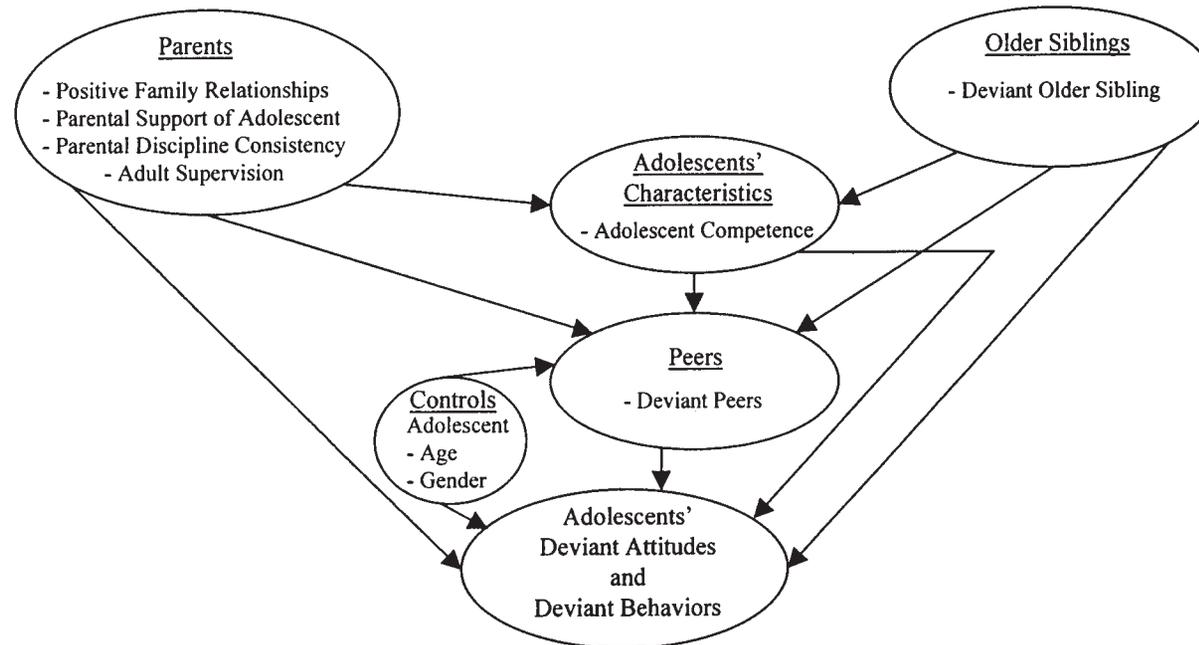


Figure 1: Theoretical model of the relations between parents, older siblings, peers, adolescents' characteristics, and adolescents' deviant attitudes and behaviors.

parents might be more supportive and controlling than are European American parents, and that single parents might not have the time to be as supportive and controlling as would parents in intact families.

In addition to parents, older siblings also can be important role models and agents of socialization in the family. Adolescents might imitate an older brother or sister who holds attitudes and values that are favorable toward deviance and engages in deviant behaviors by developing favorable attitudes toward deviance and engaging in deviant behaviors themselves. Moreover, such an older sibling, particularly if the siblings are close in age, might serve as a “deviant” mentor and teacher and introduce the adolescent to a deviant peer group and deviant activities directly. In addition, older siblings who are viewed as unsuccessful in life and as deviant role models by their younger siblings might have a negative effect on younger siblings’ sense of competence. Adolescents might feel that if the older sibling already has failed in life, their own chances to gain competence in life are slim.

Because those sibling effects are likely to correlate with the effects for parents, peers, and adolescents’ own characteristics, including the sibling effects into the model might reduce the statistical effects for those other variables on adolescents’ deviant attitudes and behaviors considerably. For example, a deviant sibling might be less likely to live in a family with positive family relationships. If both variables have a significant effect on adolescents’ deviant attitudes and behaviors, excluding the sibling variable from the model might increase the coefficient estimate of positive family relationships on adolescents’ deviant attitudes and behaviors due to the shared variance between positive family relationships and sibling deviance.

However, the association between older siblings and adolescent competence and deviance might be stronger for adolescents who admire and/or feel close to their older sibling. That is more likely to be the case if both siblings are of the same gender, if the older sibling is a brother rather than a sister, if the adolescent identifies with the older brother or sister, and if the adolescent has a positive relationship with the older sibling. By contrast, adolescents who neither admire nor feel close to their older brother or sister might not be affected by the older sibling’s deviance. Those adolescents might even gain a greater sense of personal competence due to a favorable comparison with the deviant older brother or sister.

The cross-sectional nature of the data would not allow a test of the causal order of the association between deviant peers and adolescents’ deviant attitudes and behaviors. However, in accordance with social learning theory it was assumed that adolescents’ deviant attitudes and behaviors would increase *after* adolescents had become involved with deviant peers (Akers,

2000). The association between deviant peers and adolescents' deviant attitudes and behaviors also might vary by ethnicity/race. African American adolescents tend to have closer relationships with their family than they tend to have with friends and, therefore, would be expected to be less influenced by deviant peers than would be their European American counterparts, given a similar socioeconomic background and family structure.

Adolescents who do not feel competent in life might be more inclined to look for self-confirmation in a deviant subculture than would adolescents who feel competent in mainstream society. Adolescents with feelings of low competence might hope to find a new source of self-esteem by replacing conventional friends, values, and behaviors with deviant peers, attitudes, and activities. In addition, boys and older adolescents would be assumed to be most likely to affiliate with deviant peers and to exhibit deviant attitudes and behaviors.

Finally and consistent with social learning theory, it was predicted that the extent to which adolescents approve of deviant behaviors would increase their probability to engage in the behaviors (Akers, 2000).

To summarize, the following hypotheses were tested: (1) Positive family relationships, parental support, parental discipline consistency, and adult supervision would be related positively to adolescent competence, whereas a deviant older sibling would be associated negatively with adolescents' sense of personal competence; (2) Positive family relationships, parental support, parental discipline consistency, adult supervision, and adolescent competence would be related negatively to adolescents' probability to associate with deviant peers. By contrast, adolescents who have a deviant older sibling, are boys, and are older would be more likely to have deviant friends; (3) Positive family relationships, parental support, parental discipline consistency, adult supervision, and adolescent competence would be related negatively to adolescents' attitudes about deviance, and deviant siblings and peers, being male, and being older would be related positively to adolescents' attitudes about deviance; (4) The same associations as in Hypothesis 3 would be expected to hold true for deviant behaviors as the dependent variable. In addition, deviant attitudes would be assumed to be related positively to adolescents' likelihood to engage in deviant behaviors; (5) Including sibling effects into the model would diminish the statistical effects for parents, peers, and adolescents' own characteristics on adolescents' deviant attitudes and behaviors; and (6) It was predicted that there would be statistical differences in the coefficient estimates between the following groups: It was expected that the effects for parents would vary by ethnicity/race and family structure. The effects for older siblings would be strongest for same-gender siblings, older brothers, siblings with whom the younger brother or sister identified, and sib-

lings who had a positive relationship with their younger sibling. Finally, the effects for peers would be stronger for European American adolescents than they would be for African American adolescents.

METHOD

Procedure

Data collection for the study started in the fall of 1990. The sample was taken from census tracts of four low-income areas in inner city Philadelphia with neighborhood poverty rates between 10% and approximately 40%. Neighborhoods with considerably higher poverty rates were excluded, as were middle-class and upper-middle-class neighborhoods. From each census tract, four block groups were selected randomly. Using primarily a reverse telephone directory, 598 families were identified with an adolescent between the desired age of 11 and 15 years. Of those families, 489 or 82% decided to participate in the study. Four hundred twenty-nine of those families were either African American or European American.

A trained interviewer visited the family to conduct a standardized interview with the adolescent and the primary caregiver, usually the mother of the child.¹ In addition, the adolescent, his or her caregiver, and an older brother or sister were asked to complete a self-administered questionnaire during the visit of the interviewer. Forty-seven percent of the adolescents had an older sibling, and 159 of those 229 siblings still lived in the household and decided to participate in the research. Further details of the sampling and the interview procedure can be found in Furstenberg et al. (1999).

Sample

The sample for the current study consisted of 144 African American or European American families with an older sibling. Other minorities were underrepresented and therefore deleted from the analyses. Of those 144 families, only the 121 families with no missing information on all variables were included in the analyses. Ninety-two percent of the primary caregivers in this sample were mothers ($n = 111$), eight caregivers were fathers, and the remaining two caregivers were a grandmother and an aunt.² The majority (84%) of the parents had at least 12 years of schooling, 57% of the families were African American, 47% of the families were headed by a single parent, and the mean and median yearly household income in 1989 was between \$20,000 and \$29,999. The adolescents in this sample were between 11 and 15

years of age with a mean and median age of 13. Approximately one-half of the adolescents (52%) were boys, 42% of the adolescents had an older brother who also participated in the study, and 45% reported that they had never engaged in any form of deviant behavior. The age of the older siblings in this study ranged from 12 through 20 years with a mean and median age of 16. The mean and median age difference between the siblings was 3 years.

Measures

The latent and manifest variables used in this study, the effect indicators of the latent variables, the respondents, sample items, and the range, number of items, computation, and Cronbach's alpha values of the scales are listed in Table 1. Most of the measures used in the present research were created for the Philadelphia Family Management Study. For further details see Furstenberg et al. (1999).

Adolescents' Deviant Attitudes and Behaviors

Adolescents' deviant attitudes and behaviors were assessed from the adolescents' perspectives. *Deviant attitudes* were measured by a latent variable with two effect indicators: adolescents' moral disengagement and adolescents' positive attitudes toward deviance. *Adolescents' deviant behaviors* were measured by asking adolescents if they had engaged in any of the 23 deviant behaviors listed. The items were adapted from The National Youth Survey (Elliott et al., 1985). Because the variable distribution for this scale was characterized by a high skewness and kurtosis in the nondeviant direction, the inverse of the variable was computed and then subtracted from 2 for those adolescents who reported any deviant behaviors, to obtain a more normal distribution, with higher values indicating more deviant behaviors.

Parents

The effects for parents were assessed from the parents' and the adolescents' perspectives. Using multiple informants for the parental effects helped to minimize confounding effects, such as a possible tendency of deviant adolescents to view their family in a negative light (Angel & Worobey, 1988; Breslau, Davis, & Prabucki, 1988). *Positive family relationships* were assessed by a latent variable with three effect indicators: family problem solving skills, positive family interactions, and absence of negative family interactions. Because this variable tapped the interactions within the whole family rather than the parent/adolescent relationship alone, parents were con-

(text continues on p. 329)

TABLE 1: Measures of Latent and Manifest Variables

<i>Latent/Manifest Variable</i>	<i>Effect Indicators of Latent Variable</i>	<i>Respondent</i>	<i>(Sample) Items</i>	<i>Range of Scale</i>	<i># of Items</i>	<i>Computation of Scale</i>	<i>α</i>
Adolescents' deviant attitudes and behaviors							
Deviant attitudes	Moral disengagement	Adolescent	It's ok to get high once in a while. No one loses anything when stereo equipment is stolen from a store.	1 = <i>strongly agree</i> through 5 = <i>strongly disagree</i> ^a	18	Average of items	.83
	Positive attitudes toward deviance	Adolescent	How wrong is it for someone your age to • cheat on school tests? • use marijuana? • steal something worth less than \$5?	1 = <i>very wrong</i> through 4 = <i>not wrong at all</i>	13	Average of items	.87
Deviant behaviors	—	Adolescent	Have you ever • tried to steal a motor vehicle? • hit or threatened to hit a teacher? • sold marijuana or hashish?	Yes/no	23	2 minus the inverse of the sum of all "yes" responses if the sum is greater than zero; zero otherwise	—
Parents							
Positive family relationships	Family's problem solving skills	Parent	My family solves most of the everyday problems we have around the house. When we have a problem, we try to think of different ways to solve it.	1 = <i>strongly agree</i> through 4 = <i>strongly disagree</i> ^a	5	Average of items	.76

(continued)

TABLE 1 Continued

<i>Latent/Manifest Variable</i>	<i>Effect Indicators of Latent Variable</i>	<i>Respondent</i>	<i>(Sample) Items</i>	<i>Range of Scale</i>	<i># of Items</i>	<i>Computation of Scale</i>	<i>α</i>
Parental support of adolescent	Positive family interactions	Parent	How often do family members <ul style="list-style-type: none"> • support each other? • care about what happens to each other? • enjoy doing things together? 	1 = <i>almost never</i> through 5 = <i>almost always</i>	3	Average of items	.77
	Absence of negative family interactions	Parent	How often do family members <ul style="list-style-type: none"> • ignore you when you talk? • yell at each other? 	1 = <i>almost never</i> through 5 = <i>almost always</i> ^a	2	Average of items	.45
	—	Adolescent	During the past month, how often did your parent <ul style="list-style-type: none"> • let you know that he/she really cares about you? • had a good laugh with you? • asked what is going on at your school? 	1 = <i>almost always</i> through 5 = <i>almost never</i> ^a	5	Average of items after all items are recorded into 5-point scales	.64
	—	Adolescent	How often do you and your parent do something together that you really enjoy?	1 = <i>almost every day</i> through 6 = <i>almost never</i> ^a	—	—	—
Parental discipline consistency	—	Adolescent	Your parent notices when you do things well.	1 = <i>strongly agree</i> through 4 = <i>strongly disagree</i> ^a	—	—	—
	—	Adolescent	When your parent decides to punish you, how often <ul style="list-style-type: none"> • can you get out of it? • does the kind of punishment you get depend on his/her mood? 	1 = <i>almost always</i> through 5 = <i>almost never</i>	2	Average of items	.33

Adult supervision	—	Parent	Where does child usually go after school? Where is child usually in the evenings?	1 = <i>adolescent is unsupervised outside the home during the daytime and evening</i> through 10 = <i>adolescent is supervised at home during the daytime and evening</i>	2	Combination of all possibilities	—
Older sibling Deviance of older sibling	Older sibling as deviant role model	Adolescent	The older sibling <ul style="list-style-type: none"> • has friends who get into a lot of trouble. • tries to get you to do bad things. 	1 = <i>strongly agree</i> through 4 = <i>strongly disagree</i> ^a	7	2 minus the inverse of the average of the items	.73
		Adolescent	Has the older sibling ever <ul style="list-style-type: none"> • gotten involved with drugs? • sold drugs? • been suspended/expelled from school? • gotten in trouble with the police? • gotten involved in gang activity? 	1 = <i>never</i> through 4 = <i>three or more times</i>	—	—	—
	Older sibling's expected deviance	Sibling	What are the chances that you will <ul style="list-style-type: none"> • get involved with drugs? • spend time in jail? • have a drinking problem? 	1 = <i>already happened</i> through 6 = <i>very low</i> ^a	11	2 minus the inverse of the average of the items	.82
Identification with older sibling	—	Adolescent	How much would you like to be the kind of person the older sibling is?	1 = <i>not at all</i> through 4 = <i>a lot</i>	1	(0) "Not at all," "just a little"; (1) "A lot," "quite a bit"	—

(continued)

TABLE 1 Continued

<i>Latent/Manifest Variable</i>	<i>Effect Indicators of Latent Variable</i>	<i>Respondent</i>	<i>(Sample) Items</i>	<i>Range of Scale</i>	<i># of Items</i>	<i>Computation of Scale</i>	<i>α</i>
Positive sibling relationships	—	Adolescent	The older sibling <ul style="list-style-type: none"> • is nice to you.^a • is mean to you. • helps you solve your problems.^a • bosses you around too much. 	1 = <i>strongly agree</i> through 4 = <i>strongly disagree</i>	4	(0) Average score < 3; (1) Average score ≥ 3	.73
Peers Deviant peers	—	Adolescent	How many of your friends <ul style="list-style-type: none"> • damaged or destroyed property that did not belong to them? • broke into a vehicle or building to steal something? • cheated on school tests? 	1 = <i>none of them</i> through 5 = <i>all of them</i>	13	2 – 1/(Average of items)	.86
Adolescents' individual characteristics							
Competence	Self-efficacy	Adolescent	How well can you <ul style="list-style-type: none"> • finish homework assignments by deadlines? • control your temper? • stand up for yourself when you are being treated unfairly? 	1 = <i>not at all well</i> through 7 = <i>very well</i>	14	Average of items	.81
	Resourcefulness	Adolescent	I am very good at <ul style="list-style-type: none"> • carrying out plans I make. • getting other people to help. • learning from my mistakes. 	1 = <i>strongly disagree</i> through 4 = <i>strongly agree</i>	7	Average of items	.67
Age	—	Adolescent	—	11 through 15 years	1	—	—
Gender	—	Interviewer	—	0 = female 1 = male	1	—	—

a. Scale reversed.

sidered the best informants. Cronbach's alpha for the effect indicator "absence of negative family interactions" was only .45. However, the indicator was constructed as the average of only two items, and the two items tapped slightly differing aspects of negative interactions. In fact, even though ignoring and yelling at each other both were forms of negative family interaction, they did not occur necessarily in the same family.

Parental support of adolescent was measured from the adolescents' point of view. To analyze the effect for parental support on adolescents' attitudes and behaviors, it might be less important to know how parents perceive the support they give to their adolescent children than how adolescents *feel* supported by their parents. The variable consisted of three items measured on a 5-point scale, one item measured on a 6-point scale, and one item measured on a 4-point scale. The average of the five items was taken after the last two scales were transformed into 5-point scales. *Parental discipline consistency*, an average of two items, also was assessed from the adolescents' perspectives. Although Cronbach's alpha for that variable appeared to be relatively low with a value of .33, it has to be kept in mind that the two items captured differing aspects of inconsistent parenting. Adolescents who perceived their parents as lenient in enforcing punishment might not have believed necessarily that the punishment they received depended on the parents' mood, and vice versa, even though both parenting strategies represented low consistency for discipline. Finally, *adult supervision* was a combination of two questions that asked the parent about the adolescents' daytime and evening supervision. Adolescents were not asked those questions.

Older Sibling

Deviance of older sibling was assessed by a latent variable with two effect indicators: older sibling as deviant role model, viewed from the adolescents' perspectives, and older sibling's expected deviance, ascertained from the older sibling in regard to his or her past and expected future deviant behaviors. Adolescents' perspectives were important so as to find out how much adolescents were aware of older siblings' deviant behaviors. However, it was necessary also to ask the older siblings directly about their past and expected deviant behaviors to check how much the adolescents' views corresponded to reality. In this study, both perspectives overlapped moderately ($r = .56$) and, therefore, could be considered valid indicators of the latent variable deviant sibling. The inverse of both effect indicators was calculated and subtracted from 2 to obtain a more normal distribution.

The effects for older siblings might vary with adolescents' identification with the older sibling and the quality of the sibling relationship. *Identification with older sibling* was assessed by one item. Adolescents who would like to be "a lot" or "quite a bit" the kind of person the older sibling was were assumed to identify with the older sibling. Those who replied "just a little" and "not at all" were assumed not to identify with their older brother or sister. *Positive sibling relationships* were measured from the adolescents' perspectives by four items with 4-point scales. Adolescents with an average score of 3 or higher were considered to have a positive relationship with their older brother or sister.

Peers

The extent to which adolescents associated with *deviant peers* was assessed from the adolescents' perspectives as the mean of 13 items with 5-point scales. Because the skewness and kurtosis of this scale was relatively high, the inverse was computed and subtracted from 2, which resulted in a more normal distribution.

Adolescents' Individual Characteristics

Adolescent competence was measured by a latent variable with two effect indicators: self-efficacy and resourcefulness. Both indicators were assessed from the adolescents' point of view because they tapped the adolescents' own sense of self-efficacy and resourcefulness. In addition, *age* (in years) and *gender* (1 = male) were included as control variables in the models.

Analysis

LISREL 8.30 was used to estimate structural equation models with latent variables that take measurement errors into account in variables with multiple indicators (Bollen, 1989; Jöreskog & Sörbom, 1996). Because the variables did not follow a multivariate normal distribution, covariance and asymptotic covariance matrices were calculated to compute corrected *t*-values and χ^2 statistics. However, maximum likelihood estimation rather than a weighted least squares estimation procedure was applied due to the relatively small sample size (Jöreskog, Sörbom, du Toit, & du Toit, 1999). Because the sample size was small, a slightly differing analytic approach was used than would be used with larger sample sizes. First, factor score estimates of the four latent variables were computed to reduce the number of coefficient estimates (Bollen, 1989; Jöreskog et al., 1999).³ Then Hypotheses 1 through 4 were

tested separately to reduce the number of coefficient estimates even further, so as to obtain more robust results. All nonsignificant paths were deleted in a stepwise procedure. At each step, the path whose coefficient estimate had the lowest t -value was eliminated until all coefficient estimates were significant at least at the .10 level of statistical significance. Finally, the resulting equations were analyzed simultaneously to test the complete model in Figure 1. All path coefficients remained significant statistically, and none of the eliminated path coefficients regained statistical significance as indicated by low modification indices.

To test Hypothesis 5, the same steps were followed as were for Hypotheses 1 through 4, with the exception that the path coefficients of all sibling effects were set to zero. A second approach was to start with the complete model in Table 2, set all sibling effects to zero, and then delete all nonsignificant path coefficients and add significant path coefficients as indicated by a high modification index. Both approaches resulted in the same final model.

To test Hypothesis 6, a multigroup comparison in LISREL 8.30 was performed (Bollen, 1989; Jöreskog & Sörbom, 1996). The effects for parents were compared by ethnicity/race and family structure, the effects for peers were compared by ethnicity/race, and the effects for an older sibling were compared by the gender combination of the siblings, the gender of the older sibling, adolescents' identification with the older sibling, and the relationship quality between the two siblings. Asymptotic covariance matrices could not be computed for the individual groups because the sample size was too small. Therefore, for the multigroup comparisons, only uncorrected t -values and χ^2 statistics were computed. However, with very few exceptions, the assumption that the variables in the groups would follow a multivariate normal distribution could not be rejected. Only the variables in the same gender siblings group and the positive sibling relationship group appeared not to follow a multivariate normal distribution.

RESULTS

Measurement Model

The measurement model, which tested the goodness of fit of the effect indicators for the four latent variables, is depicted in Figure 2. The model fits the data well with a χ^2 -value (adjusted for nonnormality) of 24.87 and 21 degrees of freedom ($p = .25$). All goodness-of-fit indices were above .90 and the Critical N was close to 200. The effect indicators represented the four

latent variables well. The factor loadings ranged between .54 and .97 and were significant statistically with *t*-values of 5.10 and above. The factor score estimates (Bollen, 1989; Jöreskog et al., 1999) of the four latent variables were based on the estimates in Figure 2.

All four latent variables were correlated significantly with each other in the predicted direction. Positive family relationships were related positively to adolescent competence and related negatively to a deviant older sibling and adolescents' deviant attitudes. Sibling deviance was associated negatively with adolescent competence and correlated positively with adolescents' deviant attitudes. Finally, adolescent competence and deviant attitudes were related negatively to each other.

Structural Equation Models

Table 2 shows the final model derived from Figure 1. The four latent variables were represented by their factor score estimates to reduce the number of coefficient estimates. All paths with nonsignificant coefficient estimates were deleted. The effects for adolescents' age and gender on feelings of competence were estimated as well, although no significant association was predicted. Overall, the model in Table 2 fits the data well. Satorra-Bentler scaled χ^2 , which is adjusted for nonnormality, was 11.11 with 14 *df* (*p* = .68). All goodness-of-fit indices were greater than .93, and the Critical *N* was 332, well above the recommended minimum value of 200.

As predicted in Hypothesis 1, benign family relationships, parental support, and parental discipline consistency were related positively to adolescent competence, and a deviant older sibling was associated negatively with adolescents' feelings of competence. Only adult supervision was unrelated to adolescent competence. The combined statistical effects for parents were stronger than was the statistical effect for an older sibling on adolescent competence. In addition, boys tended to report lower feelings of competence than did girls. Taken together, the independent variables in the model were able to explain 32% of the variation in adolescent competence.

As stated in Hypothesis 2, adult supervision and parental discipline consistency were related negatively to the adolescents' probability to associate with deviant peers, whereas male adolescents, those who were older, and those who had a deviant older sibling were more likely to have deviant friends. However, contrary to expectations, positive family relationships, parental support, and adolescent competence were unrelated to deviant friends. The combined statistical effects for parents appeared to be similar in strength to the statistical effect for an older sibling on adolescents' association with deviant

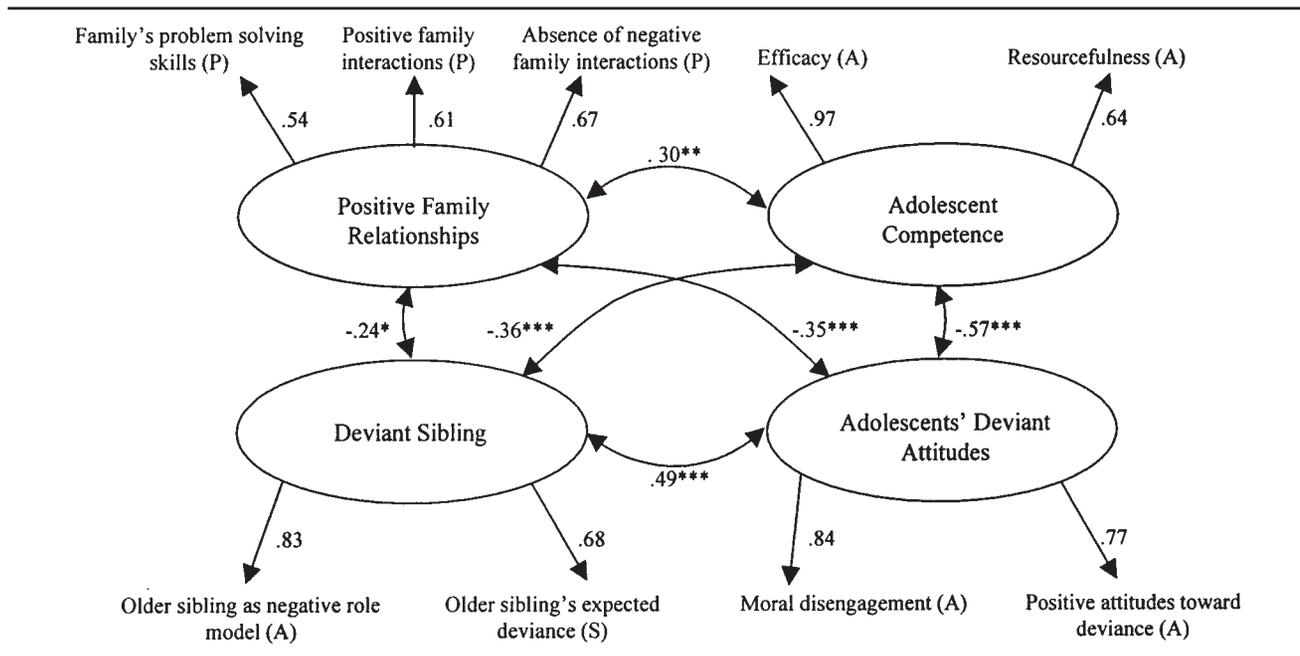


Figure 2: Measurement model of the relations between family relationships, deviant sibling, adolescent competence, and adolescents' deviant attitudes.

NOTE: LISREL 8.30 maximum likelihood completely standardized coefficient estimates; *t*-values and χ^2 statistics corrected for nonnormality; *N* = 121; Satorra-Bentler scaled $\chi^2 = 24.87$; *p* = .25; degrees of freedom (*df*) = 21; Goodness-of-fit index (GFI) = .96; Adjusted GFI = .91; Incremental fit index = .98; Nonnormed fit index = .96; Critical *N* = 177; A = Adolescent report; P = Parent report; S = Sibling report.

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t*-value > 1.645 (*p* < .10); *t*-value > 1.96 (*p* < .05); ****t*-value > 2.58 (*p* < .01); all *t*-values of factor loadings > 5.10.

TABLE 2: Relations Between Parents, Older Siblings, Peers, Adolescents' Characteristics, and Adolescents' Deviant Attitudes and Behaviors

Independent Variables	Dependent Variables											
	Competence		Deviant Peers		Deviant Attitudes				Deviant Behaviors			
	Direct Effects		Direct Effects		Direct Effects		Indirect Effects		Direct Effects		Indirect Effects	
	U	S	U	S	U	S	U	S	U	S	U	S
Effects for parents												
Positive family relationships	.14*	.14	ns	ns	-.14**	-.14	-.05*	-.05	ns	ns	—	—
Parental support	.47***	.27	ns	ns	ns	ns	-.17***	-.10	ns	ns	—	—
Parental discipline consistency	.20**	.20	-.03**	-.16	ns	ns	-.10**	-.10	-.12**	-.17	-.04*	-.06
Adult supervision	ns	ns	-.01**	-.15	ns	ns	-.01	-.02	ns	ns	-.02**	-.06
Effects for Older Siblings												
Deviant sibling	-.24***	-.24	.05***	.31	.28***	.28	.14***	.14	.20***	.28	.08***	.12
Effects for peers												
Deviant peers	—	—	—	—	1.00**	.16	—	—	1.68***	.38	—	—
Effects for adolescents												
Feelings of competence	—	—	ns	ns	-.37***	-.37	—	—	ns	ns	—	—
Deviant attitudes	—	—	—	—	—	—	—	—	ns	ns	—	—
Age	ns	ns	.04***	.28	ns	ns	.04*	.04	.08*	.12	.07***	.11
Gender (1 = male)	-.43***	-.21	.07***	.22	.30**	.15	.22***	.11	.17*	.12	.12**	.08
Fit indices												
F^2 for structural equations	.32		.26						.48			
Degrees of freedom (<i>df</i>)	14											
Satorra-Bentler scaled χ^2	11.11											
<i>p</i>	.68											
Goodness-of-fit index (GFI)	.98											
Adjusted GFI	.93											
Incremental fit index	1.01											
Nonnormed fit index	1.06											
Critical <i>N</i>	332											

NOTE: Simultaneous estimation of model; LISREL 8.30 maximum likelihood coefficient estimates; *t*-values and χ^2 statistics corrected for non-normality; *N* = 121; *ns* = path was eliminated because coefficient estimate was not statistically significant. U = unstandardized; S = standardized.
t*-value > 1.645 ($p < .10$); *t*-value > 1.96 ($p < .05$); ****t*-value > 2.58 ($p < .01$).

peers. The independent variables in the model explained 26% of the variation for deviant peers.

As expected in Hypothesis 3, positive family relationships, parental support, parental discipline consistency, and adolescent competence were related negatively to adolescents' deviant attitudes, and sibling deviance, deviant peers, age, and being male were related positively to adolescents' favorable attitudes toward deviance. However, the effects for parental support, parental discipline consistency, and age were only indirect, whereas the effects for positive family relationships, deviant siblings, and gender were direct as well as indirect. With the exception of the age effect, all indirect effects were through adolescent competence. The indirect effects for parental discipline consistency, deviant sibling, age, and gender were also through deviant peers. The combined direct and indirect effects for parents on adolescents' deviant attitudes were approximately as strong as the effects for a deviant older sibling on adolescents' deviant attitudes. Deviant peers, by contrast, had a much weaker association with adolescents' deviant attitudes. Forty-eight percent of the variation in adolescents' deviant attitudes was explained by the other variables in the model.

As predicted in Hypothesis 4, adult supervision and parental discipline consistency were related negatively to adolescents' deviant behaviors, and a deviant older sibling, deviant peers, age, and being male were related positively to deviant behaviors. However, contrary to Hypothesis 4, positive family relationships, parental support, adolescent competence, and, surprisingly, adolescents' deviant attitudes were unrelated to adolescents' deviant behaviors, and the effect for adult supervision was only indirect through deviant peers. Parental discipline consistency, sibling deviance, and the adolescents' age and gender were related directly as well as indirectly (through deviant peers) to adolescents' deviant behaviors. The combined direct and indirect effects for a deviant sibling on adolescents' deviant behaviors were as strong as the effect for deviant peers. The combined effects for parents, by contrast, were somewhat weaker. Forty-one percent of the variation in adolescents' deviant behaviors could be explained by the other variables in the model.

Because effects for siblings generally are neglected in research on adolescents' deviant attitudes and behaviors, changes in coefficient estimates were examined after effects for siblings were eliminated from the model. The revised model without effects for siblings is shown in Table 3. As predicted in Hypothesis 5, excluding effects for siblings generally increased the statistical effects for parents, peers, and the adolescents' own characteristics on adolescents' deviant attitudes and behaviors. In fact, positive family relationships now had a negative direct effect on deviant peers and a negative indirect effect (via deviant peers and attitudes and via adolescent competence via attitudes)

TABLE 3: Relations Between Parents, Peers, Adolescents' Characteristics, and Adolescents' Deviant Attitudes and Behaviors Without the Effects for Older Siblings

<i>Independent Variables</i>	<i>Dependent Variables</i>											
	<i>Competence</i>		<i>Deviant Peers</i>		<i>Deviant Attitudes</i>				<i>Deviant Behaviors</i>			
	<i>Direct Effects</i>		<i>Direct Effects</i>		<i>Direct Effects</i>		<i>Indirect Effects</i>		<i>Direct Effects</i>		<i>Indirect Effects</i>	
	<i>U</i>	<i>S</i>	<i>U</i>	<i>S</i>	<i>U</i>	<i>S</i>	<i>U</i>	<i>S</i>	<i>U</i>	<i>S</i>	<i>U</i>	<i>S</i>
Effects for Parents												
Positive family relationships	.17**	.17	<u>-.02*</u>	<u>-.14</u>	<u>-.17**</u>	<u>-.17</u>	<u>-.11**</u>	<u>-.12</u>	<i>ns</i>	<i>ns</i>	<u>-.09**</u>	<u>-.12</u>
Parental support	.58***	.34	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<u>-.27***</u>	<u>-.16</u>	<i>ns</i>	<i>ns</i>	<u>-.04**</u>	<u>-.03</u>
Parental discipline consistency	.22**	.22	<u>-.03**</u>	<u>-.21</u>	<i>ns</i>	<i>ns</i>	<u>-.15***</u>	<u>-.16</u>	<u>-.11**</u>	<u>-.15</u>	<u>-.19***</u>	<u>-.13</u>
Adult supervision	<i>ns</i>	<i>ns</i>	<u><i>ns</i></u>	<u><i>ns</i></u>	<i>ns</i>	<i>ns</i>	—	—	<i>ns</i>	<i>ns</i>	—	—
Effects for older siblings												
Deviant sibling	—	—	—	—	—	—	—	—	—	—	—	—
Effects for peers												
Deviant peers	—	—	—	—	1.52***	.24	—	—	1.95***	.44	—	—
Effects for adolescents												
Feelings of competence	—	—	<i>ns</i>	<i>ns</i>	<u>-.46***</u>	<u>-.47</u>	—	—	<i>ns</i>	<i>ns</i>	—	—
Deviant attitudes	—	—	—	—	—	—	—	—	<u>.15***</u>	<u>.21</u>	—	—
Age	<u>.12*</u>	<u>.13</u>	<u>.04**</u>	<u>.26</u>	<i>ns</i>	<i>ns</i>	.00	.00	<i>ns</i>	<i>ns</i>	<u>.07**</u>	<u>.11</u>
Gender (1 = male)	<u>-.42***</u>	<u>-.21</u>	<u>.07**</u>	<u>.21</u>	<i>ns</i>	<i>ns</i>	<u>.30***</u>	<u>.15</u>	<i>ns</i>	<i>ns</i>	<u>.18***</u>	<u>.13</u>
Fit Indices												
<i>R</i> ² for structural equations		.29		.17				.40				.37
Degrees of freedom (<i>df</i>)					19							
Satorra-Bentler scaled χ^2					48.53							
<i>p</i>					.00							
Goodness-of-fit index (GFI)					.93							
Adjusted GFI					.76							
Incremental fit index					.86							
Nonnormed fit index					.54							
Critical <i>N</i>					80							

NOTE: Simultaneous estimation of model; LISREL 8.30 maximum likelihood coefficient estimates; *t*-values and χ^2 statistics corrected for non-normality; *N* = 121; *ns* = path was eliminated because coefficient estimate was not significant statistically; added and nonsignificant path coefficients in comparison to Table 2 are underlined. U = unstandardized; S = standardized.

t*-value > 1.645 (*p* < .10); *t*-value > 1.96 (*p* < .05); ****t*-value > 2.58 (*p* < .01).

on deviant behaviors, whereas parental support now had a negative indirect effect (via adolescent competence via attitudes) on deviant behaviors. Furthermore, and as expected in Hypothesis 4, adolescents' deviant attitudes were related positively to their deviant behaviors. Finally, the effect for adolescents' age on their feelings of competence reached statistical significance. The only exception from this pattern was that the statistical effects for adult supervision on all dependent variables in the model, the direct effects for age and gender on adolescents' deviance, and the indirect effect for age on adolescents' deviant attitudes became nonsignificant.

The size of the coefficient of determination (R^2) for the structural equations generally was smaller than in Table 2, and the overall model did not fit the data well. Satorra-Bentler scaled χ^2 was 48.53 with 19 df ($p = .00$), and all goodness-of-fit indices were relatively low. Hence, eliminating effects for siblings from the model considerably changed the nature of the variable relations.

Multigroup Comparisons

Multigroup comparisons in LISREL 8.30 (Bollen, 1989; Jöreskog & Sörbom, 1996) were performed to test if the coefficient estimates in Table 2 would vary by ethnicity/race, family structure, the gender combination of siblings, the gender of the older sibling, adolescents' identification with the older sibling, and the quality of the sibling relationship.

African American parents were expected to be more emotionally supportive and controlling of their children than were European American parents. Therefore, the effects for parents on the dependent variables might vary by ethnicity/race, and African American adolescents might be less influenced by deviant peers than would their European American counterparts. However, the evidence in the present study did not support that assumption. African American parents and European American parents did not differ significantly in regard to their parenting strategies, and the coefficient estimates in Table 2 did not differ statistically between African American and European American families ($\chi^2 = 48.75$; $df = 48$; $p = .44$). Furthermore, neither the separate effects for parents nor the separate effects for deviant peers on the dependent variables varied statistically by ethnicity/race.

It also was predicted that parenting practices might vary between single-parent families and two-parent families, which might result in differing effects on the dependent variables. However, only family problem-solving skills and positive family interactions varied significantly by family structure. Single-parent families reported significantly lower family problem solving skills ($t = 2.67$) and significantly fewer positive family interactions ($t = 1.69$) than

did intact families. Despite that difference, coefficient estimates did not differ statistically between the two groups ($\chi^2 = 33.58$; $df = 48$; $p = .94$), and the effects for the parenting variables did not vary significantly between single-parent families and two-parent families.

Finally, it was assumed that the statistical effects for an older sibling would be stronger if he or she had the same gender as the younger sibling, the older sibling was a brother, the younger sibling identified with the older sibling, or the sibling relationship was positive. The coefficient estimates did not vary significantly by the gender combination of the siblings ($\chi^2 = 53.66$; $df = 48$; $p = .27$), nor by the gender of the older sibling ($\chi^2 = 57.66$; $df = 48$; $p = .16$), by adolescents' identification with the older brother or sister ($\chi^2 = 59.18$; $df = 48$; $p = .13$), or by the quality of the sibling relationship ($\chi^2 = 46.27$; $df = 48$; $p = .54$). However, if the older sibling was of a differing gender than was the younger sibling, the older sibling's deviance was unrelated to the younger sibling's deviant attitudes. Similarly, only an older deviant brother but not an older deviant sister had a statistically significant effect on the younger sibling's probability to associate with deviant peers. The χ^2 -difference test between a model that freed those particular effects and a model that restricted the effects to be equal across the two groups was significant at the .10-level of statistical significance with $\Delta\chi^2 = 3.15$ and $\Delta df = 1$ for the multigroup comparison between same gender and different gender siblings and $\Delta\chi^2 = 3.09$ and $\Delta df = 1$ for the multigroup comparison between an older brother and an older sister. The remaining three sibling effects were significant statistically in both groups. Furthermore, the effects for a deviant older sibling on adolescent competence and adolescents' association with deviant peers were significant statistically only for adolescents who identified with their older brother or sister. (Again, the remaining two sibling effects were significant statistically in both groups.) The χ^2 -difference test between a model that freed the effects for deviant older siblings on adolescent competence and deviant peers and a model that restricted those effects to be equal across the two groups was significant statistically with $\Delta\chi^2 = 10.00$ and $\Delta df = 2$ ($p < .01$). However, the individual effects for older siblings on the dependent variables did not differ statistically between adolescents with a relatively positive relationship and those with a relatively negative relationship with the older sibling.

DISCUSSION

Tested in this study were the relations between parents, siblings, peers, adolescents' individual characteristics, and adolescents' deviant attitudes and behaviors simultaneously, using data from 121 African American families

and European American families from inner-city Philadelphia neighborhoods. After controlling for siblings, peers, and adolescents' individual characteristics, parents still had a significant statistical effect for all dependent variables, but the effects varied for the four dependent variables and the statistical impact on adolescents' deviant attitudes and behaviors primarily was indirect. Positive family relationships and parental support were associated positively with adolescents' feelings of competence and related negatively (directly and indirectly for positive family relations and indirectly for parental support) to adolescents' deviant attitudes. Contrary to expectations, positive family relationships and parental support were unrelated to deviant peers and adolescents' deviant behaviors. As predicted, parental discipline consistency was associated significantly with all dependent variables in the expected direction. It was related positively to adolescent competence and related negatively to adolescents' association with deviant peers, their deviant attitudes (indirectly), and deviant behaviors (directly and indirectly). Finally, adult supervision was related negatively and directly to adolescents' association with deviant peers and related negatively and indirectly to adolescents' deviant behaviors. However, adult supervision was unrelated to adolescent competence and adolescents' deviant attitudes.

As hypothesized, the variables for deviant older siblings and deviant peers appeared to be powerful predictors for adolescents' deviant attitudes and behaviors even after controlling for the other variables in the model. The more deviant older siblings reported to be and were perceived to be by their younger siblings, the lower the younger siblings' own feelings of competence tended to be, the more deviant friends and deviant attitudes younger siblings tended to have, and the more likely they were to report engaging in deviant behaviors themselves. Similarly, the variable for deviant friends was related positively to adolescents' report of their deviant attitudes and behaviors.

Contrary to expectations, adolescents' feelings of competence were unrelated to their association with deviant peers and their own deviant behaviors. However, as predicted, feelings of competence were related negatively to adolescents' deviant attitudes. Surprisingly, adolescents' deviant attitudes were unrelated to their deviant behaviors.

As expected, age was related positively to deviance. Older adolescents were more likely than were younger adolescents to report that they had deviant friends and deviant attitudes and engaged in deviant behaviors. Similarly, boys were more likely than were girls to report that they associated with deviant peers, had favorable attitudes toward deviance, and behaved in deviant ways. However, boys, as compared to girls, also tended to report having lower feelings of competence, a relation that was not hypothesized.

The findings were consistent with social learning theory (Akers, 2000). First, parents tend to be role models and agents of socialization whose attitudes, values, and behaviors are likely to be imitated by their children. According to Schneewind (1995), parents who are able to maintain positive family relationships and to provide emotional support for their children might foster adolescents' own feelings of competence. Both assumptions were supported by the findings in the current study. Furthermore, as posited by Akers (2000), it is likely that parents with those characteristics tend to hold unfavorable attitudes toward deviance (although this could not be tested in this study) and that those attitudes are imitated by their adolescent children. The results showed that positive family relationships and parental support had a negative effect on adolescent deviant attitudes. Second, parents tend to teach their children appropriate attitudes and behaviors through the process of differential reinforcement. However, the success and effectiveness of differential reinforcement can depend on the parents' discipline consistency and the availability of adult supervision after school and in the evenings. In fact, the findings in the current study seemed to indicate that consistent parental discipline and adult supervision might have prevented adolescents' involvement with deviant peers and in deviant behaviors, which would confirm results from recent longitudinal studies (Ary et al., 1999; Pettit et al., 2001). Interestingly, only parental discipline consistency was related negatively to the adoption of favorable attitudes toward deviance and had a positive association with adolescents' feelings of competence. Apparently, the mere presence of adults might not be enough to increase adolescent competence or to prevent the development of favorable attitudes toward deviance, corroborating past research results on the greater importance of parental discipline consistency over parental supervision in preventing adolescent deviance (e.g., Galambos & Maggs, 1991).

Notably, positive family relationships and parental support were unrelated to adolescents' probability to seek out deviant friends and to engage in deviant behaviors if the effects for older siblings were included in the model. Older siblings, who are family members and can be peers, might have become role models, mentors, and teachers in regard to deviant peers and deviant behaviors (Akers, 1985, 1998). Indeed, in the current study, an older deviant sibling appeared to be the strongest predictor for adolescents' deviant attitudes and behaviors. Yet, that predictor often has been ignored in past research on adolescent deviance. Adolescents with older deviant siblings tended to have low feelings of competence and an increased likelihood to associate with deviant peers, to hold favorable attitudes toward deviance, and to engage in deviant behaviors. Similarly, adolescents with deviant friends might learn from them deviant attitudes and behaviors (Akers, 1985, 1998,

2000; Burgess & Akers, 1966) as indicated by the positive associations between deviant peers and adolescents' deviant attitudes and behaviors, but those effects were reduced also when sibling effects were added to the model.

Surprisingly, adolescents' deviant attitudes were unrelated to their deviant behaviors after controlling for the effects for parents, older siblings, peers, and adolescents' own characteristics. In accordance with social learning theory, favorable or neutralizing attitudes toward deviance might facilitate deviant behaviors in the right set of circumstances, but favorable or neutralizing attitudes are not necessarily required (Akers, 2000). However, the path coefficient between adolescents' deviant attitudes and behaviors became statistically significant after sibling effects were eliminated from the model. That indicates that the effects for deviant older siblings might be more important for predicting deviant adolescent behaviors than would adolescents' attitudes toward deviance.

The coefficient estimates did not differ statistically for groups of European American families or African American families, single-parent families or intact families, and siblings with a relatively positive relationship or a relatively negative relationship. However, statistical differences between groups were found with regard to the gender combination of the siblings, the gender of the older sibling, and adolescents' identification with the older sibling, as predicted by past research (Brook et al., 1983, 1999; Rowe & Gulley, 1992; Sutton-Smith & Rosenberg, 1970). An older sibling had only a significant effect on the younger sibling's deviant attitudes if both siblings were of the same gender. An older sibling of the opposite gender might be less effective as a role model with regard to attitudes toward deviance. Similarly, the relation between an older deviant sibling and the younger sibling's association with deviant peers was significant statistically only if the older sibling was a brother rather than a sister. A possible interpretation of this finding is that adolescent boys and girls might be willing to be part of an older deviant brother's friendship network but might be more reluctant to join the friendship network of an older deviant sister. An older deviant brother and his peer group might be glamorized, even by young adolescent girls, whereas an older deviant sister and her peer group might be held in contempt. Finally and as predicted by social learning theory (Akers, 2000) and past research (Brook et al., 1983, 1999; Rowe & Gulley, 1992), the effects for older deviant siblings on adolescent competence and association with deviant peers were significant statistically only for adolescents who identified with their older brother or sister. Those adolescents might be more willing to accept the older sibling as a role model and mentor than would adolescents who do not identify with their older brother or sister. All those differences were large enough to be significant statistically between the two groups. However, contrary to

expectations, a deviant older sibling appeared to increase an adolescent's likelihood to engage in deviant behaviors even if (a) the older sibling was of a differing gender, (b) the older sibling was a sister, (c) the adolescent did not identify with the older sibling, or (d) the adolescent had a relatively negative relationship with the older sibling. That indicates a continuing influence of older siblings on their younger brothers or sisters even if the younger siblings distance themselves from the older deviant siblings.

Limitations of the Study

Although this study is unique in the sense that the relations between parents, older siblings, peers, adolescents' individual characteristics, and adolescents' deviant attitudes and behaviors were analyzed simultaneously, the research has several limitations. First, the sample was relatively small. It might be that studies with larger data sets would be more suitable to discover significant differences in coefficient estimates between the diverse groups examined in this research.

Second, the sample contained only families with relatively low socioeconomic status and from only two ethnic/racial groups. The results might not be generalizable to middle or higher class families or those with differing ethnic or racial backgrounds.

Third, the cross-sectional nature of the data would not allow a test of the causal direction of the associations as predicted by the Akers social learning theory of adolescent deviance. Akers (2000) pointed out that association with deviant peers and deviant behaviors take place *after* children were exposed to modeling, favorable and unfavorable definitions of deviance, and differential reinforcement by parents and often older siblings. Hence, it is unlikely that adolescents' deviant friends and adolescents' deviant attitudes and behaviors tend to increase an older sibling's deviance. Similarly, adolescents' feelings of competence are less likely to influence their older brother or sister than the other way around. Older siblings tend to be role models for younger siblings, but not vice versa, at least not during adolescence (Carey, 1986; Daniels et al., 1985; Dunn & Kendrick, 1982; Sutton-Smith & Rosenberg, 1970). In fact, in a 4-year longitudinal study that covered the period from early adolescence through middle adolescence, Slomkowski and colleagues (2001) found that the delinquency of older siblings predicted the delinquency of younger siblings. There is also mounting evidence that sibling effects can be explained to a greater extent by "contagion" or social learning than by heredity (Jones & Jones, 2000).

Yet, deviant adolescents might be more likely to seek out deviant peers (Conger & Rueter, 1996; Krohn et al., 1996; Matsueda & Anderson, 1998),

and parents whose adolescent children exhibit favorable attitudes toward deviance might decrease their emotional support and find it difficult to maintain positive family relationships (Jang & Smith, 1997). It is, therefore, necessary that longitudinal studies are conducted that can determine the causal direction of the effects as predicted by social learning theory.

Fourth, only 26% of the adolescents (11 through 15 years of age in this study with a mean and median age of 13) reported more than one deviant behavior. It might be possible that the instrument used to measure deviant behaviors is not valid. However, past research has shown that adolescents' deviant attitudes and behaviors can be measured reliably using survey instruments and self-reported deviance (Akers, Massey, Clarke, & Lauer, 1983). Elliott et al. (1989) found that deliberate falsification was relatively rare and that deviance measures tended to have adequate reliability and validity. Hence, it is likely that most of these adolescents were still too young to engage in many deviant activities. Deviant behaviors tend to increase during adolescence until the age of 16, after which it starts to decline again (Elliott et al., 1989). One common research finding is that most youth who engage in deviant behaviors will conform eventually to the norms of society (Cohen & Land, 1987; Sampson & Laub, 1992; Scholte, 1999). From that perspective, deviant behaviors are merely a phase on the road toward maturity that will be outgrown eventually. Still, adolescent delinquency remains a problem for families, schools, and society, especially in a climate of escalating violence. Moreover, adolescent delinquency increases the probability of deviant behaviors during adulthood, particularly for adults without strong social bonds to society (Loeber & Le Blanc, 1990; Sampson & Laub, 1990). Because many persons who grow up in disadvantaged neighborhoods tend to be deviant in their youth (Walker, 1994), their risk of obtaining an adult criminal record probably is higher than for men and women who grew up in more affluent environments.

Fifth, the data were collected in 1990, and social conditions might have changed during the last decade. For example, school shootings by individual perpetrators in middle-class and relatively affluent neighborhoods are relatively new phenomena that have been publicized widely by the media. An increased awareness of the dangers and consequences of adolescent delinquency might prompt the majority of adolescents to distance themselves more from deviant peers and to denounce favorable attitudes toward deviance.

Longitudinal research with large contemporary data sets is needed that follows individuals of various socioeconomic and ethnic/racial backgrounds from early adolescence to early adulthood to ascertain the differing deviance trajectories of individuals and to examine the predictors of the differing tra-

jectories. The role of an older deviant sibling should be investigated particularly. The present findings indicated that older deviant siblings might be considered "warning signs" for a possible deviant development of their younger brothers or sisters. Their influence appears to be so pervasive that social programs designed to help an older deviant sibling should include also their younger brothers and sisters. By the same token, programs that attempt to promote the nondeviant development of younger siblings might be more successful if they include older siblings as well.

NOTES

1. The interviewer's instructions were to interview the parent who knew the most about the child.

2. There were no significant differences between families with the mother as primary caregiver and families in which the caregiver was not the mother regarding the variables used in the analyses except for older sibling's expected deviance. Older siblings with younger siblings whose mother was the primary caregiver were significantly less likely to assume that they would engage in deviant behaviors in the future than were older siblings whose younger siblings' primary caregiver was not the mother.

3. The factor score estimates or latent variable scores were obtained by regressing the estimate of the latent variable on a weighted function of its indicators (Bollen, 1989; Jöreskog et al., 1999). The resulting variable (factor score estimates) is an estimate of the latent variable as measured by its effect indicators. The covariance matrix of those factor score estimates is identical to the covariance matrix created by the latent variables.

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