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Changes in Maternal Ratings of Children's Overt and Covert Antisocial Behavior

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Maternal ratings of overt and covert forms of aggression were collected for two samples of children ranging in age from 2 through 12 years. It was hypothesized that longitudinal analyses would show the slope scores for these two forms of aggression to be quite different from each other. The data were consistent with this hypothesis. An effort was made to find alternative explanations for the negative slope for overt antisocial behavior. Alternatively, it was hypothesized that the more extreme cases would not show this negative slope. It was also hypothesized that careful examination of intraindividual curves would identify a significant number of individuals growing from normal to clinical levels of overt antisocial behavior. The findings led to the rejection of both alternative hypotheses. It was hypothesized that overt and covert scores would correlate significantly for first grade boys. It was also assumed that both covert and overt scores would show moderate stability over the 5-year interval. The findings were consistent with both of these hypotheses. Aggr. Behav. 31:473–484, 2005. © 2005 Wiley-Liss, Inc.

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Most investigators agree that early arrest is a prime predictor for status as a chronic offender [Blumstein et al., 1986; Moffitt, 1993; Patterson et al., 1989]. This perspective, in turn, emphasizes the importance of building models that identify the childhood antecedents that significantly predict early-onset arrest. In the coercion model, the developmental antecedent to early arrest is thought to be a sequence that begins during early childhood with overt forms of antisocial behavior [Patterson and Yoerger, 2002]. The second stage is characterized by the emergence of high rates of covert forms of antisocial behavior during later childhood and early adolescence [Patterson and Yoerger, 1997]. Presumably, boys who perform high rates of

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overt antisocial behaviors when entering school are at particular risk for performing at least low levels of covert forms as well [Patterson and Yoerger, 2002].

Several developmental models for children's aggression emphasize the key role played by overt and covert forms of antisocial behaviors in predicting early arrest for juvenile crime [Loeber and Schmaling, 1985; Loeber et al., 1999; Patterson, 1982; Patterson and Yoerger, 1997, 1999, 2002]. According to the coercion model, it is the sequence of high rates of overt antisocial behavior during childhood followed by high rates of covert antisocial behavior during early adolescence that constitutes the key predictors for early-onset arrest [Patterson and Yoerger, 1997, 1999, 2002].

In building a theory of aggression, it seems reasonable then to begin by describing the early growth in these two forms of antisocial behavior. Overt antisocial behaviors were defined by maternal ratings of behaviors (e.g., stubbornness, temper tantrums, and fighting) as they occurred during two longitudinal studies during the interval between ages 2 and 12 years. One of the longitudinal studies also collected data that described changes in covert behaviors, such as stealing, vandalism, and lying, for the interval from ages 6.5 through 12 years.

A prior examination of longitudinal ratings by mothers for at-risk adolescent boys showed a negative slope for overt forms but a positive slope for covert antisocial behaviors [Patterson and Yoerger, 1997]. In that study, rates for covert behaviors were very low at 10 years of age and remained low until about 13 years, at which time there was accelerated growth. This finding suggests that in the current study, for boys between 6 and 12 years, the mean level for covert behaviors would remain close to zero and display a neutral slope. However, findings from the research literature suggest that the slope for overt forms of antisocial behavior would be negative for younger and for adolescent samples. For example, maternal diary reports in the classic study by Goodenough [1931] showed that frequency of anger outbursts decreased from about .13 per hour at 18 months to .07 per hour by 8 years. Griffith [1952] used parental ratings of children, aged 6–14 years, and found decreases in angry outbursts. A similar effect was noted for data from both teachers [Achenbach, 1991] and parents [Achenbach et al., 1991; Tremblay et al., 1999]. Based on parent report, the effect was replicated in the large-scale study by Bongers et al. [2003]. In that study, aggressive behaviors decreased at a much faster rate for boys than for girls.

Alternatively, the effect may be some function of parent (and teacher) report data. However, the effect was also obtained in observation data collected in the home. For example, the study by Fawl [1963] showed a correlation of $-.76$ between age and frequency of conflict bouts. The negative slope seems to hold for both normal and clinical samples as shown in observation data collected in homes [Patterson, 1982]. Decreases in frequency are also cross cultural, as shown for observed age-related decreases in child assault behavior in six cultures studied by Whiting and Whiting [1975] and in the Isle of Wight study by Rutter et al. [1970].

Snyder has put forward the hypothesis that adults successfully apply discipline to the more obvious forms of overt antisocial behavior [Snyder et al., 2003]. As he puts it, the aversive contingencies "drive overt forms of antisocial behavior underground." In the present context, the Snyder hypothesis may account for the consistent findings for a negative slope for overt forms.

It is well known that for older samples of children, the overt and covert forms of antisocial behavior are highly correlated [Loeber and Schmaling, 1985]. Observation data collected on the playground for kindergarten and first grade boys showed that the overt and covert forms are also intercorrelated [Snyder et al., 2003] for younger children. It was hypothesized in the

current sample of younger children that maternal ratings for overt and covert forms will also be significantly correlated. It was also assumed that both forms would show moderate stabilities in maternal ratings over the 5-year interval.

The findings suggest that the sequence of growth in overt behavior followed by growth in covert forms of antisocial behavior may serve as a necessary antecedent for early-onset delinquent behavior. Based on the Oregon Youth Study (OYS), the data showed that boys who scored high on overt antisocial behavior at 10 years of age and who then showed the intense growth in covert forms during adolescence were most at risk for early arrest before the age of 14 years [Patterson and Yoerger, 1999, 2002]. Their risk for arrest as adults was .57 [Dishion and Patterson, in press]. There was a second group characterized by low scores on overt antisocial behavior but a marked acceleration in covert behaviors during mid-adolescence. This group tended to be arrested after 14 years of age (late onset), but as adults were most likely to be desistors [Patterson and Yoerger, 1997]. For this group, the likelihood of adult arrest was .27. The third group's path was characterized by high scores at 10 years of age on overt antisocial behavior and by a failure to move into peer deviancy training as evidenced by low scores on covert antisocial behavior. The likelihood of adult arrest for this group was .30. The Dunedin sample studied by Moffitt et al. [2002] also identified a group like this. The finding suggests that the study of the sequence of growth may contribute to our understanding of which adolescents will become early-onset and chronic offenders.

A series of analyses were carried out that examine alternatives to the idea that the negative slope for overt forms is generalizable. For example, it is possible that the decrease in overt forms of antisocial behavior may characterize some age groups but not others. In the current article, maternal ratings of overt antisocial behavior from two longitudinal studies span the interval from 2 through 12 years. These data will provide a test for the contribution of age to negative slope.

There are other alternative hypotheses that are also of theoretical interest. For example, the coercion model implied that the longer a child was engaged in a coercion process, the greater the increase in frequency of more severe forms of overt antisocial behaviors [Patterson, 1982]. Thus, it would be expected that longitudinal data for problem children would show steady increases in severe antisocial behaviors, such as hitting, temper tantrums, and physical attacks. It could be that only the more childish forms of overt antisocial behavior decrease as a function of age. For example, it could be that juvenile forms of overt antisocial acts (such as teasing, screaming, and showing off) may decline, but the more serious problem behaviors (such as hitting and fighting) may have a neutral slope or actually increase. In the present article, this hypothesis was tested by examining maternal ratings from 2 to 12 years of age for a subset of overt antisocial behaviors that included only the more severe forms, such as fighting, physically attacking people, temper tantrums, and cruelty to animals.

Another possibility is that only a tiny subsample of boys actually grows in antisocial behavior. As toddlers, they might show normal levels of overt antisocial behavior, and then during middle childhood steadily grow until eventually they become cases that would be clinically identifiable. Given that the *N* for such a group might be quite small, it might not significantly contribute to the means for the larger sample. To test this possibility, intraindividual growth curves for overt forms from the Oregon (LIFT) sample were examined to determine the extent to which some boys changed from normal to clinical levels.

Two longitudinal samples were used to test six hypotheses about growth in overt and covert forms of antisocial behavior during the period from 2 to 12 years of age. The first

hypothesis was that maternal ratings for overt antisocial behavior would be described by a significant negative slope. The second hypothesis tested was that growth in the most extreme forms of overt antisocial behavior would be characterized by a neutral or a positive slope. Third, it was also hypothesized that there would be a significant number of individuals growing from a normal range in antisocial behavior during earlier developmental periods to attain clinical status in middle childhood. Fourth, it was proposed to examine maternal ratings of covert antisocial behavior to determine whether there was significant positive growth in that form during middle childhood. Fifth, it was hypothesized that at school entry, high levels of overt antisocial behavior would be a significant predictor for early forms of covert antisocial behavior. Sixth, it was assumed that maternal ratings for both forms would be moderately stable over the 5-year interval.

METHODS

Samples

The younger sample was drawn from the Pittsburgh Mother and Child Project (PMCP). The sample consisted of 310 families with children recruited from waiting rooms of Women, Infants, and Children's (WIC) Nutritional Supplement Program [Shaw et al., 1999]. When recruited at WIC clinics, the children were between 6 and 17 months old. When the infants were 18 months old and admitted to the current study, the mothers ranged in age from 17 to 43 years. Ethnic groupings of participants were 54% Caucasian, 40% African-American, and 6% other. At the 18-month visit, 64% of the parents were either married or living together. The mean per capita family income was $2,892 per year ($11,616 for a family of four), and the mean Hollingshead [1975] socioeconomic status (SES) score was 24.5, indicative of a working-class sample. Of the 310 families seen at the 18-month assessment, data were available on 279 at 6 years of age (an attrition rate of 10%). In the present study, maternal reports of child behavior were collected when the children were 2.0, 3.5, 5.0, and 6.0 years of age. After listwise deletion, 208 cases were available for analysis.

The Oregon LIFT sample was drawn from families with children in the first grade of 12 schools that had been identified earlier as the highest crime neighborhoods of a moderate-size metropolitan area [Reid, 1993; Reid and Eddy, 1997; Reid et al., 1999]. Of the families contacted, 12% declined to participate in the study. Of those families participating, 89% were Caucasian and 20% received public assistance. The majority of the families earned $15,000–50,000 per year. About 54% of the children lived with both biological parents, 20% of the families were headed by a single parent, and roughly another 20% of the families included a stepparent. In the majority of the families, the parents ranged in age between 25 and 50 years.

The resulting sample included 144 first grade boys who were intensively assessed at approximately 6.5, 8.0, 9.0, 10.0, 11.0, and 12.0 years of age. After listwise deletion, data for 101 first graders were available for analysis.

Measures

The boys' overt and covert antisocial behaviors were assessed using items derived from the Child Behavior Checklist (CBC-L) completed by mothers at each developmental point. Each item was scored as 0 (not true), 1 (sometimes or somewhat true), or 2 (very true or often true)

in reference to the child behavior described by the item. Unlike observational data, these maternal ratings do not solely reflect the frequency of the behavior, but in some general sense do reflect the prevalence of the behavior (some composite of perceived behavioral frequency, social impact or intrusiveness, and warranted concern relative to the mothers' own "normative" base for same-aged children).

Overt antisocial behavior. Scores were based on mothers' ratings on two versions of CBC-L at ages 2–3.5 years and at ages 5–18 years [Achenbach, 1991; Achenbach et al., 1991]. Based on previous factor analyses [Loeber and Schmaling, 1985; Patterson et al., 1992], a set of 21 items was selected that assessed overt antisocial behavior. For each item, Patterson and Yoerger [1997] examined linear and quadratic trends describing change over time. A principal axis factor analysis was carried out separately for linear and quadratic terms. Items that loaded less than .30 on either the linear or quadratic factor scores were dropped.

Nine items sampling overt antisocial behaviors were selected that were shared in common by the two versions of the CBC-L. The nine items were: (a) doesn't get along well with other children; (b) getting into many fights; (c) physically attacks people; (d) screams a lot; (e) showing off or clowning (at 2–3.5 years, showing off); (f) stubborn, sullen, or irritable; (g) sudden changes in mood or feelings; (h) sulks a lot, and (i) temper tantrums or hot temper. Cronbach's alphas for the nine-item scales ranged from .69 to .86 across all time points. The mean of the nine items formed a composite overt antisocial behavior score.

Severe overt antisocial behavior. Subscales of the most severe examples of antisocial behavior were formed at each time point by maternal ratings on three of the items: gets into many fights; physically attacks people; and temper tantrums or hot temper. Cronbach's alphas were somewhat lower (.42–.70) for this subscale of low base-rate items. The mean of these three items formed the severe antisocial behavior score.

Covert antisocial behavior. Loeber and Schmaling [1985] examined self-report data for a sample of 195 preadolescent and adolescent boys to form a measure of covert antisocial behavior. They selected 11 behaviors to form their scale that were also identifiable as items in the CBC-L [Achenbach et al., 1991] filled out by the mothers. The items included: cruelty to animals; socializes with kids who get into trouble; lying or cheating; runs away from home; sets fires; steals at home; steals outside the home; swearing or using obscene language; truancy or skips school; uses alcohol or drugs, and vandalism. Cronbach's alphas for these scales ranged from .43 to .79. The covert items were not included in the assessment of the younger ages of the PMCP, and so the sample was not included in this particular analysis.

Mother and teacher scales for prediction study. In order to maximize predictive power, expanded sets of items were taken from the mother and teacher versions of the CBC-L [Achenbach and Edelbrock, 1979] of the Oregon (LIFT) sample at Grades 1 and 6. These items defined the child overt and covert antisocial behavior scales for the prediction study.

For mothers, the overt antisocial scale added ten items to the nine previously described. The ten additional items included: (a) argues a lot; (b) bragging, boasting; (c) cruelty, bullying, or meanness to others; (d) demands a lot of attention; (e) doesn't seem to feel guilty after misbehaving; (f) easily jealous; (g) impulsive or acts without thinking; (h) not liked by other children; (i) teases a lot; and (j) threatens people. Cronbach's alphas for the 19-item scales at Grades 1 and 6 were .90 and .92, respectively.

The teacher overt antisocial scale consisted of 23 items, including: (a) argues a lot; (b) defiant, talking back to staff; (c) bragging, boasting; (d) cruelty, bullying, or meanness to others; (e) demands a lot of attention; (f) disobedient at school; (g) doesn't get along with other pupils; (h) doesn't seem to feel guilty after misbehaving; (i) easily jealous; (j) gets into

many fights; (k) impulsive or acts without thinking; (l) not liked by other pupils; (m) physically attacks people; (n) disrupts class discipline; (o) screams a lot; (p) showing off or clowning; (q) stubborn, sullen, or irritable; (r) sudden changes in mood or feelings; (s) sulks a lot; (t) talks too much; (u) teases a lot; (v) temper tantrums or hot temper; and (w) threatens people. Cronbach's alpha was .95 for Grade 1 and .93 for Grade 6.

The covert scale for mothers was the same as previously described. The covert scale for teachers consisted of ten items: (a) destroying own things; (b) destroys property belonging to others; (c) hangs around with others who get into trouble; (d) lying or cheating; (e) behaves irresponsibly; (f) steals; (g) swear or uses obscene language; (h) tardy to school or class; (i) truancy or unexplained absence; and (j) uses alcohol or drugs. Cronbach's alphas for Grades 1 and 6 were .81 and .80, respectively. Composite scores for overt and covert antisocial behavior were computed as the means of the standardized mother and teacher scales.

Analyses

Three types of analyses were performed. First, at the item level, similar patterns of change over time among nine items for overt and 11 items for covert scales were confirmed within each sample by reliability analyses of linear trend scores. The writers were concerned about the possibility that some items in the scales might be less sensitive as measures of change than others. To examine this possibility, linear trend scores were calculated for each of the items in the overt and covert scales using orthogonal coefficients appropriate to the spacing of the time points in each sample. Reliability analyses of these scores demonstrated similarities among the items in patterns of change over time. The majority of the linear trend score means for the nine items in the overt scales were negative. Cronbach's alphas for these scales of overt linear trends were .74 (PMCP) and .57 (LIFT). In contrast, the majority of linear trend scores for the covert items were positive, and Cronbach's alpha for the LIFT scale of covert linear trends was .47.

Second, scores for maternal ratings of overt antisocial behavior were plotted separately for each boy from the LIFT sample. The mean for the sample at Grade l was .34 with a standard deviation of .34. Growth curves were examined separately to identify boys who experienced significant growth during the interval between Grades 1 and 6. Clinical growth was defined by those boys scored at or below the mean value when first tested at Grade l and then scored at or above l SD above the mean for two or more subsequent points in time.

Third, for each sample, repeated-measures MANOVA was used to test the significance of linear effects for overt, severe overt, and covert composite scores. To test the difference in linear effect between the extreme group and the remainder of the sample, a second set of repeated-measures MANOVAS was conducted on the severe overt composite scores.

It might be noted that an effort was made to fit a growth model to these data in order to obtain a more precise estimate of the early contribution of overt to growth in covert forms. We found that there was simply not enough between-subject variation in growth in covert forms to provide a basis for such an analysis. In fact the within-subject variation across time in covert forms exceeded the between-subject variance. The findings are not detailed here.

RESULTS

Figure 1 describes changes in maternal ratings of overt antisocial behavior as a function of the child's age. In keeping with findings from earlier studies, data for each longitudinal sample describe a clearly defined negative slope. In both developmental ranges, the data showed that mothers' ratings of overt antisocial behaviors decreased as a function of age. On the average, mothers of 2-year-old children reported a score of .55 for overt antisocial items, and mothers of 12-year-olds reported a mean of .26. The findings suggest a steady decrease in the maternal composite reports of overt antisocial behavior, an approximately .029 item level decrease per year. Notice that at age 6 years, the Oregon and Pittsburgh samples provide very different estimates for overt forms of antisocial behavior. It is assumed that the difference reflects a greater prevalence of families with disrupted parenting practices in the Pittsburgh sample. In that measures of parenting practices employed in the two studies were not comparable, this hypothesis could not be tested at the present time.

A repeated-measures MANOVA was applied separately to data from each sample to examine the significance of the linear effects. Findings summarized in Table I show that changes in mean scores for overt antisocial behavior were significant for both samples. The data also showed that negative linear coefficients were significant for each of the samples. Estimates of quadratic and cubic effects were also made; none were significant and are not included here.

Figure 2 shows the item means for maternal ratings of the severe overt antisocial behavior. The data were used to test the hypothesis that slope for an overt scale based just on the more severe items would be neutral or positive rather than negative. It can be seen that the findings do not support the hypothesis. Findings for repeated-measures analyses are summarized in Table II. Again, each sample of maternal ratings for items describing more severe overt

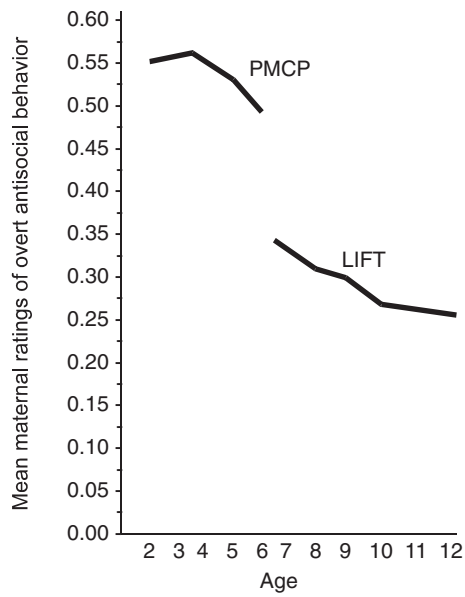

Fig. 1. Mean maternal ratings of overt antisocial behavior.

TABLE I. Overt Antisocial Behavior: Repeated-measures MANOVA estimates of linear effects

Sample	N^a	Age	Effect F	Signif. F	Coeff.	t	Signif. t
PMCP	208	2.0–6.0	3.28	.021	−.047	−2.205	.029
LIFT: Grade 1	101	6.5–12.0	3.81	.005	−.063	−3.569	.001

[a]After listwise deletion.

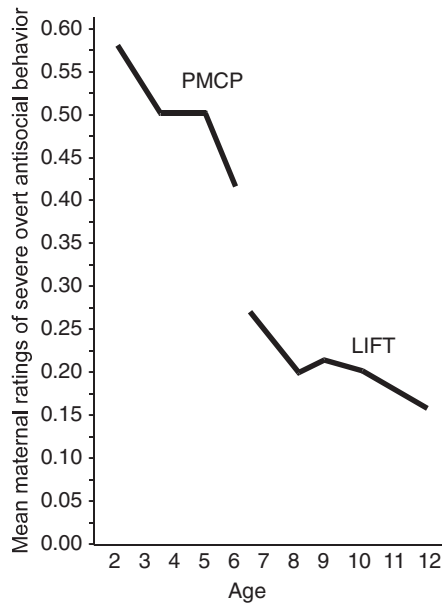

Fig. 2. Mean maternal ratings of severe overt antisocial behavior.

TABLE II. Severe Overt Antisocial Behavior: Repeated-measures MANOVA estimates of linear effects

Sample	N^a	Age	Effect F	Signif. F	Coeff.	t	Signif. t
PMCP	208	2.0–6.0	8.87	.000	−.108	−4.308	.000
LIFT: Grade 1	101	6.5–12.0	3.91	.004	−.067	−3.252	.002

[a]After listwise deletion.

antisocial behavior showed a significant negative linear effect. The findings are consistent with the hypothesis that a negative slope for overt forms is a general case rather than being limited to items that only describe more trivial forms of overt antisocial behavior.

We also examined the findings for a subset of extreme children identified as 1 SD above the mean on the overt scale at Grade 1. Examining their changes in scores for the subset of extreme items showed the now familiar general negative slope. The findings are not detailed here. Taken together, the findings are consistent with the expectation that maternal ratings of overt antisocial behavior may, as a general case, be expected to conform to a negative slope.

It had been hypothesized that during the middle childhood interval, growth in overt antisocial behaviors might characterize only a small group of children identified as performing within normal levels at Grade 1 but moving toward, and maintaining, significant levels of growth in overt antisocial behavior over the ensuing 5 years. Examination of data from the LIFT sample [Patterson and DeGarmo, 1997] showed that only two boys identified as being at the normal level in Grade l moved into the clinical range on maternal ratings of overt antisocial behavior during the ensuing years. According to these findings, only a very small number (.015) of boys can be expected to show clinically significant growth in overt antisocial behavior during the quiescent interval. This is in keeping with findings from the Montreal study showing that after 6 years of age, teacher ratings showed that there were no individuals who initiated and maintained moderate to high levels of physical aggression [Nagin and Tremblay, 1999].

Maternal ratings for the covert antisocial behavior scale were available only for the Oregon LIFT sample. We wished to determine whether maternal ratings for covert forms would show a neutral or a positive slope for the interval from Grades 1 through 6. The findings are summarized in Figure 3. The data showed a nonsignificant positive slope. Although positive (.011), the linear coefficient was minimal and nonsignificant ($t = 1.245$, $P = .216$).

It was hypothesized that in disrupted families, growth in overt antisocial behavior begins in the preschool years and is accompanied by very low rates of covert antisocial behavior [Patterson, 1982]. It was hypothesized that composites based on maternal and teacher ratings at Grade 1 for both the overt and the covert forms would be significantly correlated. Consistent with the hypothesis, the correlation between the two composite scores was .72 ($P = .000$). The data also showed modest levels of stability from Grades 1 through 6 for both the overt (.60; $P = .000$) and covert (.48; $P = .000$) scales.

DISCUSSION

Analyses of maternal ratings showed strong support for the hypothesis that the age-related decline in overt antisocial behavior may represent a general case. The findings were consistent across two samples that covered ages 2–12 years. The literature review showed similar findings across teacher and parent-report data and across observation-based studies as well. The fact that findings for the more severe forms of overt antisocial behavior also followed a

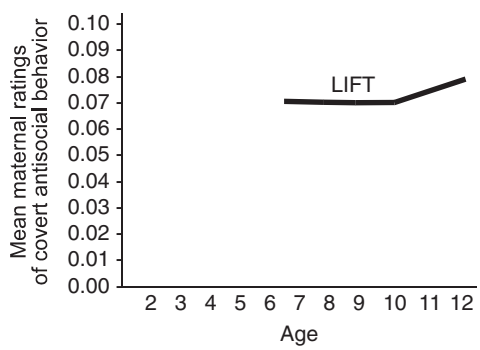

Fig. 3. Mean maternal ratings of covert antisocial behavior.

negative slope provides further support for the general case hypothesis. The failure to find evidence for new cases being added during middle childhood further underscores the importance of the preschool interval in the development of conduct disorders. The narrow focus in the present study on maternal ratings emphasizes the need to systematically sample data across agents and methods to determine the precise shape for growth in both overt and covert forms as it varies by age and by gender. The current article is but a small step in this direction.

The fact that there is a negative slope across measures of overt antisocial behavior demands an explanation. As noted earlier, a social interactional perspective would suggest that the slope could reflect age-related changes in reactions from adults and peers to overt forms [Snyder et al., 2003]. As the child matures physically, unpredictable explosions of coercive behaviors become increasingly unacceptable, particularly to adults. For example, observation data showed that the 10-year-old aggressive problem children performed about .70 coercive responses per minute [Patterson, 1982]. This rate of coercion is roughly equivalent to the rates for a normal preschool child. As the child ages, he learns that there are fewer and fewer settings where overt forms will be reinforced. The child becomes increasingly selective and generally decreases performance in the presence of adults. According to Snyder's underground hypothesis, the child may shift from overt to more covert manifestations. This is consistent with the present finding that early levels of overt antisocial behavior were reliably correlated with higher levels of covert antisocial behavior.

The available evidence suggests that there may be an important developmental sequence that begins during the preschool years with the reinforcement by family members for overt forms of antisocial behavior. Our studies showed that high rates of overt behavior are often accompanied by covert behavior such as stealing and fire setting. Typically covert forms occur at much lower rates than overt forms. As shown in the present report, the rate differential is maintained throughout the childhood interval. Prior to age 14, the antisocial child becomes increasingly at risk for extensive involvement with members of the deviant peer group. This is accompanied by dramatic growth in new forms of covert antisocial behavior [Patterson et al., 2000]. In effect, the contingencies for the first stage in the sequence are provided by the family during preschool years, and the contingencies supporting the second stage are provided during early adolescence by deviant peers. Notice, too, that during adolescence, the slopes for overt and covert forms became negative and positive, respectively.

The survey study by Bongers et al. [2003, p 190] has a very different view about the relation between early forms of overt antisocial behavior and adolescent and adult adjustment. They see aggressive behaviors of children and adolescents as being relatively "transitory in nature and resolved by the beginning of adulthood." The perspective is evidently based on the fact that the aggressivity scores at 4 years of age were twice as high as they were at 18 years.

However, some contemporary developmental models of delinquency take a very different position. For example, Loeber et al. [1997] take the position that the covert and overt forms of antisocial behavior in early childhood represent distinctly different paths to delinquency. In effect, childhood forms of aggression may be changing over time, but they are predictive of adolescent and adult crime. The models described in the present report represent a similar position. These correlational models suggest that reducing childhood levels of antisocial behavior should lead to less risk for adolescent delinquency. Recent randomized trial prevention designs have shown that procedures that reduce antisocial behavior during childhood demonstrate reductions in delinquency when followed up years later [DeGarmo and Forgatch, 2000; Vitaro, 200l].

From the mother's perspective, there is simply little growth in covert forms during the middle childhood interval. The linear coefficient for these ratings was only slightly positive and nonsignificant. Although teacher ratings of covert behaviors show higher rates of activity than mother ratings [Patterson and Yoerger, 2002], their data concur in offering little evidence for growth during this interval. It is a matter of some interest, therefore, to find data showing that what little covert activity there is can be predicted from knowing the general level of overt activity at Grade 1. The hypotheses that need to be tested are relatively straightforward. It would be hypothesized that the relative rate of reinforcement for deviancy is relatively stable across the middle childhood interval. Second, it would be hypothesized that the time allotted to deviant peer involvement is limited but relatively stable during this same interval. Based on the literature reviewed earlier, the amount of time spent with deviant peers would be expected to increase dramatically during early adolescence. It is instructive to note that during adolescence, the availability of deviant peers in the social experience of most adolescents shows massive increases in contacts during the same intervals for peak delinquency [Elliott and Menard, 1996].

Progress in understanding development from early childhood through adolescence requires that we begin by accurately describing the growth in the various forms of antisocial behavior. The next stage will be to explain how these changes come about. Studies of this kind will eventually move the field away from a simplistic trait to a more developmental perspective.

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