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Proactive and Reactive Aggression in Delinquent Adolescents: Relations to Aggression Outcome Expectancies

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Investigated whether the relation between aggression and the tendency to expect positive outcomes for aggressive behavior is specific to the proactive subtype of aggression (as opposed to the reactive subtype). In a sample of 86 incarcerated adolescent boys ages 13 to 18, we measured outcome expectancies for aggression using audiotaped hypothetical vignettes. For each participant, staff members completed proactive and reactive aggression rating scales. Regression analyses revealed that the relation between aggression and outcome expectancies was indeed specific to proactive aggression. Furthermore, this finding was supported regardless of whether outcome expectancies were assessed using vignettes describing proactive–aggressive behavior or those describing reactive–aggressive behavior. We discuss these findings and argue that interventions to reduce proactive or reactive aggression should differ from each other by addressing the specific social cognitive processes involved in each type of aggression.

During the last 10 to 15 years, researchers have distinguished between reactive and proactive subtypes of aggression (Day, Bream, & Pal, 1992; Dodge & Coie, 1987; Dodge, Price, Bachorowski, & Newman, 1990). Proactive aggression is instrumental or deliberately goal-directed and occurs without provocation. Reactive aggression, on the other hand, occurs in response to a perceived provocation or threat and seems to serve a defensive function, although the response may be out of proportion to the threat.

Studies examining the relations of social cognitive patterns to reactive and proactive aggression have supported the validity of the distinction between the two types of aggression and have suggested possible intervention strategies. Reactive aggression, compared to proactive aggression, is more strongly associated with a bias toward attributing hostile intent to others (Dodge & Coie, 1987; Dodge et al., 1990). In contrast, speculation about a social cognitive process associated with proactive aggression has focused on outcome expectancies for aggression (Dodge & Coie, 1987).

Researchers have shown that generalized aggression (aggression measured without distinguishing between subtypes) in children and adolescents is related to expectations regarding the outcomes of aggressive behavior. Aggressive youth tend to expect fewer negative outcomes and more positive outcomes for aggressive behavior. For example, Slaby and Guerra (1988) found that incarcerated aggressive adolescents, compared to nonincarcerated aggressive and nonaggressive youth, anticipated fewer consequences for aggression occurring in response to an interpersonal problem described in a vignette. They were also more likely to endorse beliefs that aggression leads to positive outcomes and does not lead to negative outcomes.

Although Slaby and Guerra’s (1988) study was the only one of its kind involving an adolescent sample, other studies have indicated that aggressive children evaluate aggressive behaviors as having positive outcomes. For example, Perry, Perry, and Rasmussen (1986) found that aggressive children feel more efficacious about performing aggressive behaviors and that they are more confident than nonaggressive children that aggression would produce tangible rewards and reduce aversive treatment by others. Similarly, Quiggle, Garber, Panak, and Dodge (1992) found that aggressive children evaluate aggressive behavior itself more positively than do other children.

The primary goal of our study was to determine whether the relation between outcome expectancies and aggression is specific to proactive aggression. Because of the high correlation between reactive and proactive aggression (Atkins, McKay, & Arvantis, 1996), statistically controlling each aggression type...
while examining the other is necessary to demonstrate conclusively that the relation is specific to proactive aggression. Although Crick and Dodge (1996) found that a group of third- through sixth-grade children with high proactive aggression scores displayed significantly more positive outcome expectations and greater efficacy for enacting aggression than other children, they did not control for the level of reactive aggression in these children. In this study, the level of reactive aggression was statistically controlled while the relation between proactive aggression and outcome expectancies was examined, providing a more stringent test of the specificity of the relation between proactive aggression and outcome expectancies.

A second goal of this study was to extend the investigation of the relation between proactive aggression and outcome expectancies from the normal sample in the Crick and Dodge (1996) study to a clinical sample. Because we recruited participants from an incarcerated adolescent male population, our study was the first to examine the relation between proactive aggression and outcome expectancies in a sample that included severely aggressive participants. The study of these participants allowed us to investigate whether or not the same social cognitive processes that were related to proactive aggression in a school-based sample in the Crick and Dodge study are also related to proactive aggression in a more severely aggressive incarcerated sample. Because severely aggressive behavior is more common among boys than girls and because boys compose the majority of the maximum-security incarcerated adolescent population, our participants were all male. This sample made our findings directly relevant to the treatment of pathological levels of aggression, because incarcerated boys constitute one population toward which treatment is often directed.

A third goal of this study was to test separately the relations between proactive and reactive aggression and outcome expectancies about three different subtypes of aggression, as portrayed in audiotaped hypothetical vignettes. The three subtypes of aggression described in the vignettes include two forms of proactive aggression, instrumental and bullying, as well as reactive aggression. It was hypothesized that outcome expectancies for all three subtypes of aggression would be associated with the display of proactive, but not reactive, aggression.

A fourth goal of the study was to investigate what types of outcomes are important in the relation between proactive aggression and outcome expectancies. This study included the assessment of instrumental outcome expectancies, social outcome expectancies involving liking and respect from the victim and other peers, the expectation that one would “feel good” about one’s aggressive behavior, and the perceived likelihood of physical harm to the self and of formal institutional sanctions. It was hypothesized that proactive aggression would be positively related to expectations of instrumental success in aggression, social approval of other peers, and the emotional outcome of feeling good following the aggressive act and negatively related to expectations of outcomes involving physical harm and formal sanctions.

### Method

**Participants**

Male participants between the ages of 13 and 18 were recruited at a maximum-security correctional facility for delinquent boys. One hundred one inmates were asked to participate, and 90 (89%) agreed. Complete data could not be obtained for 4 of these participants, resulting in a final sample of 86. Ages of the participants ranged from 13 years 11 months to 18 years 10 months, with a mean of 17 years and a standard deviation of 1 year 1 month. According to institutional records, the racial composition of the sample was 73% African American, 23% Caucasian, and 4% other.

Of the charges corresponding to each participant’s most recent arrest, the most frequent charge was theft (36%), followed by burglary (27%); weapons-related offenses (26%); assault and robbery (each 21%); terroristic threatening, menacing, or similar charges (16%); narcotics-related offenses (15%); sexual crimes (10%); and attempted murder (7%). Only 3% of the participants had current charges that did not include one of these categories. Most participants had multiple current charges, and nearly all participants also had a history of prior criminal charges. Note that these offenses may have been less severe than the original charges due to the frequency of plea bargaining. Murders and other capital offenses were not represented because juveniles convicted of such crimes were placed in an adult facility.

**Informed Consent**

All participants were in the custody of the state at the time of the study. Therefore, informed consent was obtained from both the state authorities responsible for the participants’ care and from the participants themselves. First, Catherine M. Smithmyer presented a six-page proposal to the senior psychologist and the superintendent of the correctional facility and to the director and deputy director of the state youth agency responsible for the participants in the facility. The proposal described the purpose of the study, detailed the methods and procedures to be implemented, including informed consent and confidentiality procedures, and illustrated all measures and stimulus materials with sample items. The authorities granted blanket written permission for
all inmates of the facility to participate in the study on the condition that each participating inmate gave written consent.

Each participant’s verbal and written consent was obtained using a form that briefly described the study in simple language. Information included the voluntary nature of the study, confidentiality procedures, the purpose of the study, and all data collection procedures including the interviews, the staff questionnaires, and archival data collection. The form was read to each participant due to differences in participants’ reading abilities.

Measures and Procedures

Measures of reactive and proactive aggression.

For each of the 86 participants, Dodge and Coie’s (1987) scales of proactive and reactive aggression were completed by the primary staff member assigned to his case. In addition, for the purposes of collecting reliability data, an additional staff member completed the ratings for 20 of the 86 participants. Twenty-three staff members completed varying numbers of these questionnaires. Thus, each staff member completed too few questionnaires to allow for standardization of responses within staff member, as is usually done when teachers complete these rating scales. The measure consists of six statements, rated on 5-point Likert-type scales ranging from 1 (never) to 5 (almost always), which the staff member rated with regard to the participant’s behavior while in the correctional facility. Three of these statements index reactive aggression, and the other three provide a measure of proactive aggression. The word student was substituted for the word child or boy wherever appropriate. A sample item measuring reactive aggression is “When this student has been teased or threatened, he gets angry easily and strikes back.” A sample proactive aggression item is “This student threatens or bullies others in order to get his own way.” Our interrater reliability data indicated that the correlation between the two staff members’ ratings was .58 for reactive aggression and .63 for proactive aggression. The internal reliability of the scales has been previously reported as ranging from .87 to .91. The inter-scale correlation has been reported at .76 (Dodge & Coie, 1987). For each participant, proactive and reactive aggression scores were calculated by computing z scores for the respective scales.

The construct validity of reactive and proactive aggression was established in a series of studies reported by Dodge and Coie (1987). Dodge and Coie used their teacher rating scales and collected observational data on proactive-aggressive and reactive-aggressive behaviors of children in play groups. The internal consistency of the proactive and reactive aggression constructs was supported by high intrascale correlations and coefficient alphas of the teacher rating items, by significant interobserver agreement in the observational data, and by the stability of observed proactive and reactive aggression exhibited by individuals across play group sessions. Convergent validity of the measure was established by the positive relation between teacher ratings of proactive aggression and direct observations of proactive aggression, even after variance related to reactive aggression was removed. The complementary finding held for reactive aggression as well. Discriminant validity of the two constructs was supported by factor analyses demonstrating that teacher ratings of proactive versus reactive aggression tended to load on separate factors.

Measure of outcome expectancies for aggression.

Measures of outcome expectancies were administered via a structured interview, conducted individually with each participant, using nine audiotaped vignettes as stimulus material. The interviewer (Catherine M. Smithmyer) had no prior interaction with or knowledge of any of the participants and was blind to any information about their behavior, including the aggression ratings. All stimuli and questions were presented orally, and participants responded verbally, so poor reading and writing skills did not interfere with measurement. Each of the nine vignettes was followed by a similar series of questions assessing outcome expectancies. The nine vignettes were developed for use with the specific sample in this study and depicted the types of incidents that staff reported occurred frequently at the correctional facility. Their general content and the questions that follow, however, were based on materials and procedures used by many researchers studying outcome expectancies and goals of aggression (e.g., Asher, Chung, & Hopmeyer, 1995; Crick & Ladd, 1990; Hubbard, Dodge, Coie, Cillessen, & Schwartz, 1999; Perry et al., 1986; Slaby & Guerra, 1988).

Each of the nine audiotaped outcome expectancy vignettes set an interpersonal context that allowed for the possibility of an aggressive response from the participant (for sample vignettes, see Table 1). Vignettes were presented in the second person, with the participant imagining himself in the described situation. The reader on the tape then asked the participant to imagine what might happen if he responded in a specific aggressive manner.

The interview included three of each of the following types of outcome expectancy vignettes: reactive context vignettes and two types of proactive context vignettes, instrumental context and bullying context (see Table 1). The reactive context vignettes involved situations where the participant imagined reacting aggressively to the actions of a hostile peer. The proactive context vignettes involved situations where the protag-
onist had an opportunity to engage in unprovoked aggressive behavior against another peer. In the proactive–instrumental context vignettes, the imagined aggressive behavior involved taking something from a peer that the participant wants. In the proactive–bullying context vignettes, the aggressive behavior involved no apparent tangible gain.

After each vignette was presented, the interviewer read several questions about possible outcomes, to which the participant responded yes or no (see Table 2 for sample questions). The number of questions was either seven or eight according to vignette type. The reactive context vignettes and the proactive–instrumental context vignettes were followed first by a question regarding the anticipated instrumental success of the aggressive act. This question did not apply to the proactive–bullying context vignettes. Questions 2 through 8 were identical across vignette type, assessing expectancies regarding the likelihood that, after the aggressive act, the participant would be liked by the victim, would be respected by the victim, would be liked by peers, would be respected by peers, would feel good about the aggressive act, would be physically harmed, or would be formally sanctioned.

Affirmative responses to the first six questions and negative responses to the last two questions received a score of 1, and other responses received a score of 0. First, scores for the seven or eight questions within each vignette were averaged for that vignette, resulting in an outcome expectancy score for each vignette, potentially ranging from 0 to 1. Second, the averaged scores for each vignette were summed across vignettes within vignette type, resulting in a reactive context score, a proactive–instrumental context score, and a proactive–bullying context score, each with a potential range from 0 to 3. Finally, scores for each outcome type were computed by averaging the score for the question of interest across all possible vignettes, resulting in eight different outcome type scores, each with a potential range from 0 to 1 (an instrumental success score, a victim respect score, etc.).

**Results**

**Factor Analysis of the Aggression Measure**

A principal components factor analysis of the aggression measure with an oblique (oblimin) rotation was conducted to ensure that the proactive and reactive subscales represented coherent yet distinct constructs. A two-factor solution was obtained, with reactive and proactive items loading on separate factors. Details of the results of this analysis can be obtained from the Catherine M. Smithmyer.

**Descriptive Statistics and Reliabilities of the Measures**

Table 3 includes the means, standard deviations, and ranges of the reactive and proactive aggression scores and each of the outcome expectancy scores. In addition, coefficient alpha is included to provide information on the internal consistency of the scores. Table 4 includes simple correlations between each of the subtypes of aggression and each of the outcome expectancy scores. The correlation between the reactive and proactive aggression scores was .63.

**Table 2. Sample Outcome Expectancy Questions**

Sample Instrumental Success Questions
1. Do you think that he would stop trying to cut in front of you or not?
2. Do you think that he would trade shirts with you or not?

Standard Questions
3. Do you think that he would respect you after that or not?
4. Do you think that he would like you after that or not?
5. Do you think that other students would respect you after that or not?
6. Do you think that other students would like you after that or not?
7. Do you think that you would feel good about what you did or not?
8. Do you think that you would end up getting hurt or not?
Relations Between Outcome Expectancies and Aggression

Regression analyses were planned to examine the relations between each of the 12 outcome expectancy scores, on the one hand, and proactive and reactive aggression, on the other. These analyses were conducted to test whether the relations between proactive aggression and outcome expectancies were significant after controlling for the effects of reactive aggression and vice versa. It was hypothesized that the relations between proactive aggression and outcome expectancies would be significant, whereas the relations between reactive aggression and outcome expectancies would not.

All \( F \) values reported pertain to the partial correlation coefficient obtained when one subtype of aggression was examined in the context of a model that included the other subtype as a continuous covariate. Interaction terms were included in the analysis but were not expected to be significant. In a preliminary analysis, we correlated each subtype of aggression and each outcome expectancy score with age and with a dummy-coded ethnicity variable. Because none of these correlations approached significance, age and ethnicity were not included as covariates in the analyses.

First, the regression predicting overall outcome expectancies from proactive aggression, after statistically controlling reactive aggression, revealed a significant relation between proactive aggression and outcome expectancies (see Table 5). This result indicates that high levels of proactive aggression are associated with the tendency to expect more positive outcomes for aggressive acts, even with the confound of the correlated construct of reactive aggression removed. However, the relation between reactive aggression and outcome expectancies, after statistically controlling proactive aggression, did not approach significance.

Second, we predicted outcome expectancy scores for each of the three vignette types—reactive-aggressive context, proactive–instrumental aggressive context, and proactive–bullying aggressive context—from proactive and reactive aggression scores. As hypothesized, outcome expectancy scores for all three vignette types were significantly and positively related to proactive aggression when reactive aggression was controlled (see Table 5). This result indicates that high levels of proactive aggression are associated with the tendency to expect more positive outcomes for aggressive acts, even with the confound of the correlated construct of reactive aggression removed. However, the relation between reactive aggression and outcome expectancies, after statistically controlling proactive aggression, did not approach significance.

On the other hand, the analogous regressions using reactive aggression (with proactive aggression con-
Our design allowed us to investigate whether proactive aggression was related to outcome expectations not only for proactive–instrumental aggressive acts but also for proactive–bullying and even reactive aggressive acts. It also allowed us to investigate the possibility that reactive aggression might be related to outcome expectancies for some types of aggressive acts, such as reactive aggressive acts. As hypothesized, proactive aggression was associated with a tendency to anticipate positive outcomes for aggressive behavior, regardless of whether the imagined aggressive act was a reaction to a hostile provocation or whether it was an unprovoked act of instrumental aggression or of bullying aggression. The finding that proactive aggression was related to outcome expectancies even for reactive–aggressive acts further solidifies support for the original hypothesis.

However, the analogous regressions predicting outcome expectancies for each of the three vignette contexts from reactive aggression (with proactive aggression controlled) all yielded nonsignificant results. Thus, as expected, these findings offer no support for the possibility that reactive aggression might be related to outcome expectancies in specific contexts (e.g., when the imagined aggressive act is a reactive–aggressive act.)

Of the eight outcome types (e.g., peer respect), four were significantly related to proactive aggression with reactive aggression controlled, but none were related to reactive aggression with proactive aggression controlled (see Table 6). Specifically, these results indicate that proactive aggression is associated with the expectation of instrumental success in aggressive acts, with the expectation of peer approval (liking and respect) after the aggressive act, and with the expectation of feeling good about the aggressive act.

### Discussion

As hypothesized, proactive aggression, with reactive aggression controlled, was positively related to the tendency to expect positive outcomes for aggressive acts. As expected, no such conclusion was supported for reactive aggression. Although Crick and Dodge (1996) demonstrated a relation between proactive aggression and outcome expectancies, our study was the first to demonstrate that this relation is unique to proactive aggression by statistically controlling reactive aggression.

Our study was also the first to test the existence and uniqueness of the relation between proactive aggression and outcome expectancies separately in the context of different types of aggressive acts. This feature of our design allowed us to investigate whether proactive aggression was related to outcome expectancies not only for proactive–instrumental aggressive acts but also for proactive–bullying and even reactive aggressive acts. It also allowed us to investigate the possibility that reactive aggression might be related to outcome expectancies for some types of aggressive acts, such as reactive aggressive acts. As hypothesized, proactive aggression was associated with a tendency to anticipate positive outcomes for aggressive behavior, regardless of whether the imagined aggressive act was a reaction to a hostile provocation or whether it was an unprovoked act of instrumental aggression or of bullying aggression. The finding that proactive aggression was related to outcome expectancies even for reactive–aggressive acts further solidifies support for the original hypothesis.

The differentiation of proactive and reactive aggression on the basis of specific social cognitive processes, such as outcome expectancies for aggression, has clinical implications, and our findings are particularly clinically relevant because of the inclusion of severely aggressive youth in our sample. The effectiveness of interventions to reduce aggression would most likely be enhanced by matching proactive–aggressive and reactive–aggressive youth to interventions based on the specific deficits associated with each type of aggression. For example, an intervention described by Hudley and Graham (1993), designed to change aggressive

### Table 5. Regressions of Overall Outcome Expectancies and of Outcome Expectancies for Each Vignette Type on Proactive and Reactive Aggression

<table>
<thead>
<tr>
<th>Variable</th>
<th>( B )</th>
<th>( SE )</th>
<th>( \beta )</th>
<th>( F )</th>
<th>( \Delta R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Outcome Expectancies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Proactive with Reactive Controlled</td>
<td>.55</td>
<td>.19</td>
<td>.39</td>
<td>8.38</td>
<td>.09*</td>
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<tr>
<td>Reactive with Proactive Controlled</td>
<td>−.18</td>
<td>.19</td>
<td>−.13</td>
<td>0.92</td>
<td>.01</td>
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<tr>
<td>Outcome Expectancies for Proactive-Instrumental Vignette</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Proactive with Reactive Controlled</td>
<td>.20</td>
<td>.08</td>
<td>.35</td>
<td>6.82</td>
<td>.07**</td>
</tr>
<tr>
<td>Reactive with Proactive Controlled</td>
<td>−.05</td>
<td>.08</td>
<td>−.08</td>
<td>0.39</td>
<td>.00</td>
</tr>
<tr>
<td>Outcome Expectancies for Proactive-Bullying Vignette</td>
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<td></td>
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<tr>
<td>Proactive with Reactive Controlled</td>
<td>.17</td>
<td>.07</td>
<td>.33</td>
<td>5.95</td>
<td>.07*</td>
</tr>
<tr>
<td>Reactive with Proactive Controlled</td>
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<td>.07</td>
<td>−.18</td>
<td>1.66</td>
<td>.02</td>
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<tr>
<td>Outcome Expectancies for Reactive Vignette</td>
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<tr>
<td>Proactive with Reactive Controlled</td>
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<td>.07</td>
<td>.33</td>
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<td>.06*</td>
</tr>
<tr>
<td>Reactive with Proactive Controlled</td>
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<td>.07</td>
<td>−.08</td>
<td>0.36</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note: \( N = 86 \).

*Full-model (with both reactive and proactive variables) \( F(1, 83) = 4.82, R^2 = .10, p < .01 \). **Full-model \( F(1, 83) = 3.03, R^2 = .07, p < .06 \). ***Full-model \( F(1, 83) = 3.58, R^2 = .08, p < .04 \).

* \( p < .05 \). ** \( p < .01 \).
boys’ tendency to make attributions of hostile intent, may be more effective in treating reactive aggression than proactive aggression.

However, proactive aggression may be treated more effectively with interventions that involve learning to anticipate the consequences of aggressive behavior, such as the consequential thinking component of the Spivack and Shure Interpersonal Cognitive Problem-Solving intervention (Spivack & Shure, 1982). Likewise, interventions designed to alter the contingencies—rewards or punishments—associated with aggression might be more effective in the treatment of proactive aggression than reactive aggression, because providing negative outcomes for aggression and preventing positive outcomes should alter outcome expectancies. If this is the case, it may be that behavior modification programs based on the use of rewards and consequences for conduct disordered youth and the point-and-level systems used with juvenile offenders are more effective for the treatment of proactive aggression, compared to reactive aggression.

Our study provides useful clinical information by being the first to investigate what types of outcomes matter in the relation between proactive aggression and outcome expectancies, particularly to incarcerated youth. Interventions that aim to alter outcome expectancies in aggressive adolescents, either by teaching consequential thinking or by directly controlling outcomes, are more likely to be effective if they address the specific types of outcomes that are important to these adolescents.

That proactive aggression appears to be motivated by expectations of instrumental success is no surprise, as these outcomes are often the most visible gains from proactive aggression and have been found to relate to generalized aggression in the past. This finding is consistent with the view that proactive aggression is goal-oriented in nature.

Social outcome expectancies involving peer approval play an important role in proactive aggression. Given the tendency of antisocial and delinquent youth to associate with deviant peers and the fact that adolescents often aggress in groups, the conclusion that expectations of peer approval play an important role in proactive aggression appears to be warranted. This conclusion suggests that interventions that are designed to alter proactive–aggressive behavior by manipulating outcomes may be more successful if they are able to control social outcomes such as peer approval.

The finding that proactive aggression is associated with expecting to feel good about the aggressive act suggests a lack of empathy or remorse. This interpreta-
tion is consistent with the findings of Cornell and his colleagues (Cornell, Warren, Hawk, & Stafford, 1996), who studied adult offenders and demonstrated that instrumental aggression was associated with a lack of guilt or empathy for victims.

In addition, by studying a sample of incarcerated adolescent boys, we were able to gather descriptive information about the range of outcome expectancies for aggression that this population displays. For each of the 12 outcome expectancy scores, participants’ scores ranged from 0 (the lowest possible score) to an upper value that approached the maximum possible value. These statistics suggest that incarcerated adolescent boys display a wide range of cognitions about outcome expectancies for aggression.

Several limitations of this study should be acknowledged. First, our measure of reactive and proactive aggression (Dodge & Coie, 1987) included only three items to assess each subtype of aggression. More recently developed measures include a more expanded assessment of these constructs (Atkins et al., 1996).

Second, results should not be generalized beyond our adolescent, male, incarcerated sample. Some of the conclusions should not be assumed to hold for children who have not yet reached adolescence. This caution is particularly pertinent to findings regarding specific types of outcome expectancies, such as expecting to be respected by peers, which may gain importance only in adolescence. These findings cannot be generalized to girls, because only boys were included in the sample. The aggressive behavior of boys and girls typically manifests itself somewhat differently, with relational aggression being a more important component of female aggression than of male aggression (Crick & Grotpeter, 1995). The findings of our study also cannot be generalized to a sample of normal adolescents, due to our use of a severely aggressive sample.

References


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