CHAPTER 1

Male Adolescent Friendships: Relationship Dynamics that Predict Adult Adjustment

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INTRODUCTION

One of the most compelling questions in social developmental research is what role peers play in social and emotional adaptation (Hartup, 1983; Piaget, 1954; Sullivan, 1953). The question can be divided into two, more specific inquiries. First, to what extent does acceptance by peers influence social development? Second, do friendship dynamics shape individual social development trajectories?

With respect to the first inquiry, there is evidence that rejection by peers uniquely undermines children’s social development (e.g., Nelson & Dishion, 2004). We have found that peer rejection seems to structure peer networks, with respect to the aggregation of deviant youth into peer groups (Dishion, Patterson, Stoolmiller, & Skinner, 1991). In fact, we recently found that peer rejection was uniquely predictive of gang involvement two years later, controlling for academic skills and antisocial behavior (Dishion, Nelson, & Yasui, 2004).

Thus, the inquiries into the unique role of peer acceptance and the influence of friendships in the social development of youth are not unrelated.
Extensive research supports the idea that deviant friendships can promote delinquent and problem behavior (Brendgen, Vitaro, & Bukowski, 2000; Elliott, Huizinga, & Ageton, 1985; Tremblay, Masse, Vitaro, & Dobkin, 1995; Vitaro, Gendreau, Tremblay, & Oligny, 1998). In fact, as youth become involved in groups such as gangs, even the most antisocial escalate their deviant behavior (Cadwallader & Cairns, 2002; Cairns, Cadwallader, Estell, & Neckerman, 1997; Craig, Vitaro, Gagnon, & Tremblay, 2002; Hill, Howell, Hawkins, & Battin-Pearson, 1999).

Over the past ten years, we have been interested in studying the social interaction mechanism that drives the formation of deviant friendships. Specifically, we tested the proposition that friends’ contingent positive reactions to deviant talk influence the development of adolescent problem behavior (Dishion, Spracklen, Andrews, & Patterson, 1996); we referred to this as deviant friendship process, or more simply, deviancy training. Formal testing of this idea requires the collection of direct observations of friendship interactions that capture antecedents and consequences, such as deviant talk and laughter. Contingencies between two repeating events can be quantified by a Z score (Bakeman & Gottman, 1986; Bakeman & Quera, 1995; Gottman & Roy 1990; Sackett, 1979). When two events reliably covary in time, the Z-score index is somewhere above 1.96. It is often the case that research on relationships examines a sequence of lag 1, examining the contingency between events that are contiguous in time (tn and t_{n+1}).

Using this approach, we found support for the hypothesis that friends mutually influence one another through contingent laughter to deviant talk. We also discovered that not only did antisocial boys respond more positively to deviant talk, they also did not reinforce normative talk. In general, adolescents tended to match their level of deviant talk to the relative rate of reinforcement, a principle referred to as matching law (for a review, see McDowell, 1988).

This deviant friendship process has been found to contribute to escalations in drug use, delinquency, and violent behavior (Dishion, Andrews, & Crosby, 1995; Dishion, Eddy, Haas, Li, & Spracklen, 1997; Dishion et al., 1996). Patterson, Dishion, and Yoerger (2000) examined the link between early involvement in deviant peer groups and young adult problem behavior (i.e., substance use, high-risk sexual behavior, and repeated offending), and found that deviancy training in adolescent friendships mediated the relation between early adolescent involvement in a deviant peer group and young adult problem behavior. More recently, we examined the relation between deviancy training in early and late adolescence and the progression from substance use exploration to young adult substance abuse (Dishion & Owen, 2002). These data suggested that it was the deviancy friendship process in the early adolescent friendship that seemed to be prognostic of a pathogenic progression in substance use. Friendship dynamics in late adolescence (age 17–18) did not predict young adult substance use, once controlling for earlier substance use.
What is surprising is the lack of longitudinal research documenting interpersonal transactions associated with positive adjustment, despite the strong theoretical framework for suggesting such a role for peers (e.g., Piaget, 1954; Sullivan, 1953). For years, peer relationship research focused on the lack of social skills as a characteristic of delinquent and behavior problem children. However, research revealed that social skill deficits were best conceptualized as a proxy for a general pattern of social maladaptation associated with early-onset antisocial behavior and arrested socialization (Moffitt, 1993; Patterson, 1982). By and large, we know that delinquent, aggressive youth are less socially skilled in their friendships by virtue of being more often coercive and directive (Austin & Draper, 1984; Coie & Kupersmidt, 1983; Dishion et al., 1995; Dodge, 1983).

The study of normative patterns of friendship formation is fundamental for constructing a model of the contribution of peers to social development. Seminal work by Berndt (Berndt, 1981, 1989; Berndt, Hawkins, & Jiao, 1999), for example, documents the growth of sharing, prosocial behavior, and its increasing stability as children get older. Unfortunately, there is scarce evidence to suggest that individual differences in positive dimensions of friendship interactions are predictive of positive developmental trajectories. The best that we can say is that having supportive friendships during adolescence is likely to be associated with positive adult adjustment, even when controlling for childhood indices of adjustment (Bagwell, Newcomb, & Bukowski, 1998). No study yet has identified a dynamic construct from direct observations of friendship interactions that could be developmentally sensitive and explain individual differences in long-term positive outcomes (i.e., a positive counterpart to deviancy training).

One of the more promising constructs defining positive social development is the concept of regulation behavior (Eisenberg, 1998). Intrapersonal mechanisms such as inhibitory control or effortful attention control are linked strongly to advances in prosocial behavior in children (Eisenberg & Fabes, 1998; Rothbart & Bates, 1998). It would make sense that close relationships with conspecifics provide a ‘training opportunity’ for fine-tuning one’s ability to regulate within a relationship dyad. Adjusting one’s wants and wishes to accommodate those of a friend, listening and caring about the thoughts and feelings of another, and understanding another’s point of view certainly require a certain level of ‘self-regulation’ in the service of ‘dyadic regulation.’ One would think that close and enduring friendships provide a unique context for the development of social and relationship skills. It does not seem particularly risky to hypothesize that Dyadic Regulation, as learned in friendships, would be predictive of adjustment and satisfaction in adult work, play, and love; as these three domains demand extensive interpersonal skill and sensitivity.

Given the relative neglect in studying the long-term contributions of positive and negative friendship aspects to child and adolescent social development (Hartup, 1996), we propose to disentangle the unique roles of deviancy training
and Dyadic Regulation in predicting young adult social and emotional adjustment. In this study, we used advanced statistical modeling to examine two dimensions of male adolescents’ friendships, as assessed via videotaped observations of participants at 14, 16, and 18 years of age. Figure 1.1 provides a summary of our hypotheses, suggesting that both dimensions of adolescent friendship will be prognostic of young adult outcomes.

The goal of the present study is to determine the extent that friendship processes (i.e., deviant vs. regulated interactions) (a) change across time, and (b) influence adult adjustment. Composite scores of antisocial behavior, drug use, arrests, relationship quality, health/happiness, and success at age 22–23 were used as adult outcome variables. These scores also were combined into metaconstructs: adult maladjustment and adult positive adjustment. Specifically, we hypothesize:

1. Friendships will provide a context for the development of social skills, as evidenced by an increase in Dyadic Regulation over the course of adolescence.
2. Deviant friendship process in adolescence will be predictive of maladjustment in adulthood.
3. Dyadic Regulation in adolescence will be predictive of positive adjustment in young adulthood.
4. Youth who are high in Dyadic Regulation and low in deviancy training will be the most well adjusted with respect to low rates of antisocial behavior and high levels of personal satisfaction and success.

METHOD

Participants

This study used data from the Oregon Youth Study (Capaldi & Patterson, 1987) sample of boys, who were between the ages of 9 and 10 at the time data...
collection began (the 1983–84 school year) and attended schools in a high-crime area of a medium-sized city in the Pacific Northwest. From all the 4th-grade classes invited to participate, 206 boys were recruited to the study (74.4% of invitees). Capaldi and Patterson (1987) found that the boys who were recruited did not differ significantly from those who did not participate on any of the clinical scales of the teacher version of the Child Behavior Checklist (CBCL; Edelbrock & Achenbach, 1984). Overall, the recruited families were of slightly lower socioeconomic status than average (according to national norms) and predominantly White. More than 20% of parents were unemployed and more than 20% were on some form of welfare or financial assistance in the first year of the study. Initially, 42% of the families had two biological parents, 32% were single-parent families, and 26% were step-parent families (Patterson, Reid, & Dishion, 1992). Data used in this article were collected between 1983 and 1998, when the boys were between the ages of 9 and 24.

Data Collection Procedures

Boys were assessed yearly from age 9 to adulthood using parent and son interviews, questionnaires (completed by the child, parent, peers, and teachers), in-home assessments, school data, and court records. Both parents and teachers completed the CBCL each year. The child and parent interviews, which took place at the research center each year, gathered information about parenting, child behavior, and peer behavior. Table 1.1 provides an overview of the measures and timing of the data collection utilized in the present study.

Videotaped Observations

Boys participated in peer interaction tasks at ages 14, 16, and 18. During the parent and child interview portion of these assessments, the boys and parents

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<tr>
<td>Multiagent Measure</td>
<td>Videotaped Friendship Interactions</td>
<td>Multiagent Measures</td>
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<td>OSLC* Construct</td>
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- **Antisocial Teacher Report**
  - Coder-Dyad Antisocial
  - Coder-Dyad Drug Talk
  - Observed-Dyad Rule-Breaking Talk
  - Coder-Dyad Interpersonal Regulation
  - Observed-Dyad Calm Conversation
  - Observed-Dyad Directives (Reverse)

- **Teacher Report**
  - Deviant Peer Process
  - Antisocial Behavior
  - Drug Use
  - Arrests
  - Good Adjustment
  - Achievement
  - Health, Happiness
  - Positive Relationships

Note. *OSLC = Oregon Social Learning Center.
independently identified the three male friends with whom the boys spent the most time (rank-ordered). The male friend identified as being the most frequent companion by both the parent and study boy was identified for recruitment into the friendship study. At ages 14, 16, and 18, the recruitment rate averaged 89% across the three assessment waves (91%, age 14; 88%, age 16; 86%, age 18). For all recruited friends, a home visit was made to discuss the study and to obtain informed consent from each friend and his parents.

At each time point, the boys brought a friend to the lab and they were videotaped interacting across a 25-minute session. During that time, the boys were instructed to plan an activity together and discuss four problems (two per boy) they were having with parents and peers. The problem-solving tasks were counterbalanced.

As discussed above, the videotapes were coded by two groups of independent coding teams, focusing on different aspects of the interaction. The Peer Process Code focused on the interpersonal process of the friendship interaction, and the Topic Code focused on the deviance of the discussion topic. Both coding systems relied on coded speakership and used an event recorder to obtain the sequencing and duration of the relationship interaction. Coded speakership refers to a process of coding interaction data where the observer makes judgments regarding the person in the interaction who is talking. Occasionally two people in a relationship will speak at the same time, but their data are rendered as sequential when coding speakership. Event recorders are hand-held computers that allow the automatic entry of behavior codes, as well as a record of who is the initiator and recipient of the behavior.

Peer Process Code

The Peer Process Code was developed by Dishion et al. (1989) for the purpose of coding the videotaped friendship interactions studying adolescence (see Dishion et al., 1995). The coding system was developed with a focus on assessing the interpersonal process of a close relationship. Codes were systematically created to represent verbal, nonverbal, and physical interpersonal behaviors as well as those that were deemed to be experienced as positive, neutral, or negative. The positive or negative impact dimension was based on a series of studies that assessed the subjective ratings of behaviors coded within similar coding systems (see Hoffman, Fagot, Reid, & Patterson, 1987). Verbal codes included Positive Verbal, Endearments, Talk, Negative Verbal, Verbal Attack, Commands, Requests, Coercive Commands. Physical codes included Positive Physical, Negative Physical (hit or push), and Object Manipulation (giving or taking of an object in the session). Nonverbal codes were coded as either positive, neutral, or negative.

Behaviors were entered with an event recorder, with each entry defining the initiator (one digit), the content (two digits), the recipient (one digit), and the affective valence. Affective valence was recorded by entering one digit (among
six), indicating anger–hostility (two levels), depression, neutral, and positive affect (two levels). The 24 codes used in this system were clustered into four, a priori summary scores: Negative Engagement, Directives, Converse, and Positive Engagement.

Negative engagement represented all codes presumed to have a negative interpersonal impact (e.g., criticisms, verbal attacks, name calling, coercive threats), as well as any neutral or positive content codes recorded in negative affect. A Directives score was indicated by two content codes describing the adolescent’s attempt to direct or guide the behavior of his friend. Positive engagement included all positive content codes (compliments, positive nonverbal gestures, endearments), as well as neutral codes recorded in positive affect. Finally, Converse included only one code (talk) recorded in neutral valence. Thus, friendship interactions coded in Converse were typically calm, regulated discussions of mutual interest. Much of the interaction in both families and friendships is coded talk, which was the motivation for creating the Topic Code describing the content of the discourse.

**Topic Code**

The Topic Code was designed to capture variability in the boys’ discussion topics (Poe, Dishion, Griesler, & Andrews, 1990). In contrast to the Peer Process Code, the Topic Code measures the extent to which antisocial boys selectively reinforced deviant talk.

To assess deviant talk, we took a broadband approach to topic classification: if two coders could agree that a discussion was in violation of conventional norms, it was coded as rule-breaking talk, which consisted of any reference to violations of legal or conventional norms, any inappropriate behavior during the taped interaction, and any activities violating the instructions given for the task. All other talk was coded as normative: if two boys were talking about the dangers of drug use, it would be coded as normative talk. In contrast, if the two boys were discussing their own drug use, it would be coded as rule-breaking talk. Because of the contextual nature of such topics, we found it necessary to simplify the coding of discussion topics by having only two possible topics.

For this study, we examined the average duration of rule-breaking talk, incorporating it with two coder impressions scales describing drug use and antisocial talk, to form a deviant peer process construct described below. We also used the proportion of time spent conversing (as defined by the Peer Process Code) and the proportion of time spent issuing directives (reversed) to help define the Dyadic Regulation construct described below.

**Coder Impression Scales**

Following the Peer Process Coding, observers completed an inventory assessing their global impressions of the friendship interaction from the 25-minute
videotaped interaction. As in previous research, two scales were created from this inventory and used for the Deviant Peer Process construct: drug talk and antisocial behavior. One scale used in the Dyadic Regulation construct was created from this inventory measuring coder impression of the dyad’s interpersonal regulation.

Constructs

The two constructs, Deviant Peer Process and Dyadic Regulation, were created to describe the friendship interactions at each of the three time points (ages 14, 16, and 18). The Deviant Peer Process score was based on the coding from the Topic Code and the coder impressions of drug talk and antisocial behavior during the friendship interaction. The Dyadic Regulation score was based on the Peer Process Code and coder impressions of interpersonal regulation during the friendship interaction. The psychometric characteristics of each construct are summarized in Table 1.2.

Dyadic Regulation

This score represents the extent to which the two adolescents were normatively engaged with one another with respect to listening, turn taking, politeness, and Dyadic Regulation. Three scores comprised this construct, two from the direct observations of calm conversation and a third from the coder impressions. The construct had a reliability ranging from 0.56 to 0.74 across waves.

An average of 70% of the dyadic interactions were coded in Converse. Being able to hold a conversation is thought to be a key feature of friendship Dyadic Regulation. Thus, the average duration of Converse served as one indicator of Dyadic Regulation. This score reflects the average duration of a Converse episode, coded at the dyad level. Specifically, a study boy Converse (20-s) followed by a peer Converse (20-s) would reflect a 40-s dyadic Converse event.

Being directive with a friend is considered to be a social skill deficit and a sign of a dysregulated friendship. The Directives score reflects the average duration of Directives over the course of the 25-minute videotaped observation. This score reflects the average duration of a Directives episode, coded at the dyad level, as explained above for Converse. For use in the Dyadic Regulation construct, the score was multiplied by -1 so that a high score represents fewer directives.

The interpersonal regulation score reflects the coder’s impression of the prosocial nature of the friendship with respect to mutual concern, responsiveness, and regulation. Seven items across the three waves were used: eye contact, social skills, concern, responsiveness, turn taking, derogatory behavior (reversed), and hyperactivity (reversed). Scores were averaged across the target child and his peer. The internal consistency ranged from 0.79 to 0.82
Table 1.2 Internal consistency of peer process constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Wave 5</th>
<th>Wave 7</th>
<th>Wave 9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>α</td>
<td>α</td>
<td>α</td>
</tr>
<tr>
<td>Dyadic Regulation</td>
<td>0.71</td>
<td>0.74</td>
<td></td>
</tr>
<tr>
<td>Converse</td>
<td>0.45</td>
<td>0.32</td>
<td>0.49</td>
</tr>
<tr>
<td>Coder Impressions</td>
<td>0.63</td>
<td>0.37</td>
<td>0.52</td>
</tr>
<tr>
<td>Directives (R)</td>
<td>0.51</td>
<td>0.40</td>
<td>0.62</td>
</tr>
<tr>
<td>Deviant Peer Process</td>
<td>0.70</td>
<td>0.77</td>
<td>0.71</td>
</tr>
<tr>
<td>Drug Talk</td>
<td>0.52</td>
<td>0.64</td>
<td>0.59</td>
</tr>
<tr>
<td>Antisocial Talk</td>
<td>0.46</td>
<td>0.55</td>
<td>0.48</td>
</tr>
<tr>
<td>Rule-breaking</td>
<td>0.51</td>
<td>0.60</td>
<td>0.45</td>
</tr>
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</table>
across waves and the correlation between the target child’s scores and the peer’s scores ranged from 0.80 to 0.85.

Deviant Peer Process. The Deviant Peer Process construct consisted of three variables from the peer interaction task: drug talk, antisocial talk/behavior, and duration of rule-breaking talk. The construct had a reliability ranging from 0.61 to 0.70 across waves and item-total correlations ranging from 0.45 to 0.64. The construct was developed using methods detailed by Capaldi and Patterson (1989).

A score representing the time a dyad spent either talking or behaving in a rule-breaking fashion was generated using the topic coding system for the peer interaction task. Rule-breaking talk consisted of any reference to violations of legal or conventional norms, any inappropriate behavior during the taped interaction, and any activities violating the instructions given for the task. Coder reliability analyses for the topic code yielded mean agreements over 90% and kappas over 0.65. The actual score used in these analyses was the average duration (in seconds) of a dyad’s rule-breaking talk.

We used coder impressions to create a drug talk score. Coders answered 12 questions about whether the adolescent or his peer had referred to use of specific substances during the peer interaction task. Each question asked about a specific substance: alcohol, tobacco, marijuana, cocaine, hallucinogens, and methamphetamine. The six questions for each adolescent were averaged, and the mean of the two boys’ scores was taken. Correlations between the two boys’ drug talk scores ranged from 0.87 to 0.97.

We also used coder impressions to create an antisocial talk score. Coders answered questions about both the boy and his peer, judging how much the two engaged in antisocial behavior, how much they engaged in prosocial behavior, how much the peer encouraged antisocial behavior from the target boy, and how much the peer encouraged prosocial behavior. The mean of these four items was taken.

Young Adult Outcomes

Young adult (age 23–24) outcomes included measures of adult positive adjustment and adult maladjustment. Because this study investigated both positive and negative early peer experiences, we wanted to measure both adaptive and maladaptive outcomes. Constructs measuring health and happiness, work and school success, and relationship quality combined to form a metaconstruct of adult positive adjustment. Constructs measuring drug use, antisocial behavior, and arrests combined to form a metaconstruct of maladjustment. We created all constructs using a method of including all face valid items within a rating scale (e.g., interviewer impressions), retaining items that did not detract from the reliability of the scale, then combining scales and retaining scales that did not detract from the reliability of the construct. The psychometric properties of the six constructs and their metaconstructs are summarized in Table 1.3.
Adult Health and Happiness

Adult health and happiness was conceptualized as an index of mental health and contentment. The construct consisted of five scales: two self-report scales of life satisfaction and self-report of self-esteem, and interviewer and parent impressions of the target adolescent’s happiness. The construct was internally consistent with an alpha of 0.74.

Adult Success

Adult success was conceptualized as an index of engagement in work and education and ratings of conscientiousness. The construct consisted of eight scales: self-report of months spent in school or at work, level of education, engagement in school or work, success, the Neuroticism-Extraversion-Openness (NEO) conscientiousness scale (Costa & McRae, 1985; Saucier & Goldberg, 2003), coder and interviewer impressions of work or school engagement, and peer impressions of school or work involvement. The construct was internally consistent with an alpha of 0.76.

Adult Relationship Quality

Adult relationship quality was conceptualized as an index of social skills, problem-solving and conflict resolution skills, and reports of relationship
quality, all derived from the Oregon Youth Study assessment of intimate heterosexual relationships and same gender relationships at age 23–24 (Capaldi, Dishion et al., 2001), as well as a measure of agreeableness. The construct consisted of eight scales: two self-report scales of satisfaction with relationships, self-report of verbal conflict, the NEO self-report Agreeableness scale (Costa & McRae, 1985; Saucier & Goldberg, 2003), interviewer impressions of dyadic social skills, peer report of relationship with the target child, and two dyadic ratings of level of conflict in their relationship. The construct was internally consistent with an alpha of 0.75.

**Adult Drug Use**

Adult drug use was conceptualized as an index of adult substance-use patterns. The construct consisted of two self-report scales: self-report of alcohol and marijuana use patterns and frequency, and self-report endorsement of using drugs or drinking too much alcohol. The construct was moderately internally consistent with an alpha of 0.58.

**Adult Antisocial Behavior**

Adult antisocial behavior was measured similarly to antisocial behavior in 10th grade. The construct consisted of five scales: one self-report item measuring guilt after breaking rules, the externalizing scale from the young adult self-report, the self-report Elliot Behavior Checklist, the externalizing scale from the parent version of the CBCL, and interviewer impressions of the adolescent’s antisocial behavior. The construct was moderately internally consistent with an alpha of 0.61.

**Adult Arrests**

Adult arrests were measured using court records. All arrests between 11th grade and young adulthood (juvenile and adult) were summed to create this measure.

**Analysis Strategy**

In order to examine the effect of Deviant Peer Process and Dyadic Regulation on young adult outcomes, we conducted four sets of analyses. First, we ran confirmatory factor analyses of the two peer process constructs to test their internal consistency and independence. Next, we used latent growth modeling to investigate separately the effect of each construct on young adult adjustment. Finally, we tested the relative influence of and interaction between Deviant Peer Process and Dyadic Regulation in predicting outcomes.
RESULTS

Confirmatory Factor Analyses

To test the independence of Deviant Peer Process and Dyadic Regulation, we ran confirmatory factor analyses of the two constructs at each assessment period (age 14, 16, and 18). As can be seen in Figure 1.2, which displays the results for all three assessments, Deviant Peer Process and Dyadic Regulation are not independent, but the models do fit well as specified when the two constructs are allowed to covary. The negative relationship between the two constructs indicates, as one would expect, that boys who have high Deviant Peer Process tend to be low on Dyadic Regulation. Table 1.4 displays the correlation matrix for the two constructs across assessments.

Latent Growth Modeling

To investigate the development of Deviant Peer Process and Dyadic Regulation across time and their effect on young adult outcomes, we used a latent growth modeling procedure. Because we wanted to investigate the two constructs’ independent effects on the outcomes, we ran two sets of models: one with Deviant Peer Process and one with Dyadic Regulation. In both cases, we first specified the model for the peer process construct across the three assessment points, testing a linear growth model and setting the intercept at the first assessment point. Next, we added childhood antisocial behavior as a predictor (i.e., to test for peer process’ influence above and beyond a known predictor of young adult outcome) and ran two models, one predicting young adult maladjustment (i.e., the metaconstruct of antisocial behavior, drug use, and arrests) and one predicting young adult positive adjustment (i.e., the metaconstruct of success, health and happiness, and relationship quality). Zero-order correlations between the constructs and young adult outcomes are displayed in Table 1.5.

Base Models

Both the Deviant Peer Process and Dyadic Regulation linear growth models fit the data well ($\chi^2(1) = 0.42$ and 1.37, respectively; $p > 0.20$, RMSEA < 0.05). For the Deviant Peer Process model, both the intercept and slope had significant variances and means. Deviant Peer Process increased across time and its mean level and growth varied between participants; intercept and slope were significantly negatively correlated: participants who had low Deviant Peer Process at the first assessment grew more than those who had high Deviant Peer Process at the first assessment (possibly indicating a ceiling effect). For the Dyadic Regulation model, both the intercept and slope had significant means, but only the intercept had significant variance. Participants varied on their
Figure 1.2 Confirmatory factor analyses
initial levels of Dyadic Regulation, but did not vary significantly in that growth across time. Dyadic Regulation slope was significantly negatively correlated. Just as with Deviant Peer Process, participants who had low levels of Dyadic Regulation initially increased their Dyadic Regulation more across time than those who began with higher levels (see Figure 1.3 for both models). This finding is consistent with the notion of arrested social development of antisocial children. It is clear from these data, however, that boys characterized as antisocial ‘catch up’ to their normative counterparts by late adolescence.

**Prediction of Young Adult Positive Adjustment and Maladjustment from Deviant Peer Process**

As explained above, we added childhood antisocial behavior (a construct measured via multiple agents and multiple measures at age 9) to the base model as a predictor, and young adult maladjustment or positive adjustment as the

**Table 1.4** Bivariate Correlations between Deviant Peer Process (DPP), Dyadic Regulation (DR)

<table>
<thead>
<tr>
<th></th>
<th>DR 5</th>
<th>DR 7</th>
<th>DR 9</th>
<th>DPP 5</th>
<th>DPP 7</th>
<th>DPP 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR 5</td>
<td>1.00</td>
<td></td>
<td></td>
<td>−0.45**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DR 7</td>
<td>0.46**</td>
<td>1.00</td>
<td></td>
<td>−0.45**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DR 9</td>
<td>0.27**</td>
<td>0.29**</td>
<td>1.00</td>
<td></td>
<td>−0.36**</td>
<td></td>
</tr>
<tr>
<td>DPP 5</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPP 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.51**</td>
<td>1.00</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>0.39**</td>
<td>0.50**</td>
</tr>
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*Note. List-wise deletion; n=160 *p < 0.05 **p < 0.01

**Table 1.5** Bivariate correlations between Deviant Peer Process (DPP), Dyadic Regulation (DR), and Young Adult Adjustment

<table>
<thead>
<tr>
<th></th>
<th>Success</th>
<th>Health, Happiness</th>
<th>Positive Relationship</th>
<th>Antisocial</th>
<th>Drug Use</th>
<th>Arrests</th>
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<tr>
<td>DPP 5</td>
<td>−0.19*</td>
<td>−0.06</td>
<td>−0.12</td>
<td>0.22**</td>
<td>0.21**</td>
<td>0.25**</td>
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<tr>
<td>DPP 7</td>
<td>−0.32**</td>
<td>−0.31**</td>
<td>−0.28**</td>
<td>0.32**</td>
<td>0.12</td>
<td>0.33**</td>
</tr>
<tr>
<td>DPP 9</td>
<td>−0.32**</td>
<td>−0.23**</td>
<td>−0.26**</td>
<td>0.39**</td>
<td>0.17*</td>
<td>0.24**</td>
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<td>DR 5</td>
<td>0.13</td>
<td>0.09</td>
<td>0.06</td>
<td>−0.16*</td>
<td>−0.07</td>
<td>−0.16*</td>
</tr>
<tr>
<td>DR 7</td>
<td>0.18*</td>
<td>0.04</td>
<td>0.10</td>
<td>−0.09</td>
<td>0.02</td>
<td>−0.17*</td>
</tr>
<tr>
<td>DR 9</td>
<td>0.21**</td>
<td>0.20*</td>
<td>0.19*</td>
<td>−0.19*</td>
<td>0.04</td>
<td>−0.12</td>
</tr>
</tbody>
</table>

*Note. Listwise deletion; n = 157
*p < 0.05 **p < 0.01
outcome. Paths from antisocial behavior to slope, intercept, and outcome were allowed, as were paths from intercept and slope to outcome (see Figure 1.4). The model predicting maladjustment from Deviant Peer Process fit the data well, $\chi^2(3) = 3.06, p > 0.05$, RMSEA = 0.01. Antisocial behavior positively predicted initial levels of Deviant Peer Process; both initial levels and growth across time predicted young adult maladjustment. No other paths were significant, indicating that the relationship between childhood antisocial behavior and negative outcome (zero-order correlation = 0.36) was mediated by Deviant Peer Process.

The model predicting positive adjustment from Deviant Peer Process did not fit the data as well, $\chi^2(3) = 11.45, p < 0.05$, RMSEA = 0.13. In this model, antisocial behavior again positively predicted initial levels of Deviant Peer Process; and both initial levels and growth across time negatively predicted young adult positive adjustment. As before, no other paths were significant, indicating that the relationship between childhood antisocial behavior and
positive outcome (zero-order correlation = −0.32) was mediated by Deviant Peer Process.

**Prediction of Young Adult Adjustment and Maladjustment from Dyadic Regulation**

The same models were run using Dyadic Regulation in place of Deviant Peer Process (see Figure 1.5).

The model predicting maladjustment from Dyadic Regulation fit the data well, $\chi^2(3) = 2.02, p > 0.05$, RMSEA < 0.01. Antisocial behavior negatively predicted initial levels of Dyadic Regulation and positively predicted young adult maladjustment. Neither initial levels nor growth of Dyadic Regulation across time predicted young adult maladjustment.

The model predicting positive adjustment from Dyadic Regulation also fit the data well, $\chi^2(3) = 3.06, p > 0.05$, RMSEA = 0.01. In this model, antisocial behavior again negatively predicted initial levels of Dyadic Regulation, but no other paths were significant.

**Relationship Between Deviant Peer Process and Dyadic Regulation**

To test the relative effects of Deviant Peer Process and Dyadic Regulation on outcomes, we also ran two hierarchical regressions. In the first regression, we predicted young adult maladjustment, entering childhood antisocial behavior in the first step, Deviant Peer Process slope and average in the second step, and Dyadic Regulation slope and average in the third step. Both the first and
second steps contributed significantly to the model, $R^2$ change $= 0.09$, $F$ change $(1, 184) = 18.68$, $p < 0.001$; and $R^2$ change $= 0.06$, $F$ change $(2, 182) = 6.03$, $p < 0.01$, respectively. The third step, in which Dyadic Regulation was added, did not contribute to the model. Specifically, antisocial behavior and average level of Deviant Peer Process significantly predicted young adult maladjustment.

In the second regression, using the same steps to predict young adult positive adjustment, both the first and second steps again contributed significantly to the model, $R^2$ change $= 0.08$, $F$ change $(1, 180) = 15.32$, $p < 0.001$; and $R^2$ change $= 0.07$, $F$ change $(2, 178) = 6.76$, $p < 0.01$, respectively. The third step, in which Dyadic Regulation was added, again did not contribute to the model. Specifically, antisocial behavior and average level of Deviant Peer Process again significantly predicted young adult maladjustment.

We ran a final set of models (i.e., the two models predicting maladjustment and positive adjustment, respectively), adding a fourth step predicting outcome from the interaction between average levels of Deviant Peer Process and Dyadic Regulation (standardized prior to creating the interaction term in order to center the interaction). The interaction term did not significantly contribute to either model.

**CONCLUSIONS AND FUTURE DIRECTIONS**

It was of some surprise to us that we were unable to identify a positive friendship dynamic that uniquely predicted positive or negative adjustment outcomes in young adulthood. Given the extensive measurement strategy, including direct...
observation, one would think that at least one or two of the prosocial friendship indices would be predictive. It is fundamental to our conceptualization of peer relationships that they occupy a unique 'developmental niche' in which youth have the opportunity to co-regulate with an interactive partner of equal status, and to learn and practice skills that are later crucial for negotiating healthy relationships fundamental to work, love, and play in the adult years.

One potential oversight in our collective thinking about the role of friendship in social and emotional development is the mixing of an individual difference perspective with a developmental one. It is clearly true that friendships over the course of adolescence appear to become increasingly engaging, regulated, and less directive from early to late adolescence. This is perhaps true for everyone, regardless of the quality of the friend. In fact, our data suggest that early-onset antisocial youth have somewhat lower initial levels of prosocial behavior with friends in early adolescence, but completely catch up by late adolescence. Paradoxically, adolescent friendships may be especially important for youth who are lower in social status and in marginal family situations. This seems true in some respects, as we found that early-onset antisocial youth spend increasing amounts of time with friends, whereas well-adapted youth spend less, from early to late adolescence (Dishion, Nelson, Winter, & Bullock, 2004).

What we often have neglected in our thinking about the role of friendship in social and emotional development is the salient role of norms, values, and attitudes. If one thinks of adolescence as a time when youth emerge with an autonomous life course, then it would make sense that an important function of adolescent peer groups is to sort out within a social niche that which resonates with respect to a set of norms and behaviors that define such a trajectory. What is interesting is that deviance, within human culture, appears to be a very salient feature of these friendship dynamics. Nearly all adolescent friendships 'dabble' in deviance, yet some are highly organized in their deviance discussions (see Dishion, Nelson, Winter, et al., 2004). It is as if deviance serves as an alternative path to adulthood, less than the socially sanctioned achievements of school and occupational status. Previous research suggests that friendships high in deviancy training certainly have more fun, if parties, substance use, and sexual activity are defined as fun. Moreover, they predict early mating and prolific parenting.

This broad view of deviance in adolescence as a functional adaptation that has survival value for youth who understand all too well their long-term marginal social status is referred to as the premature autonomy hypothesis (Dishion, Nelson, & Bullock, 2004; Dishion, Poulin, & Medici Skaggs, 2000). We assume that in very early adolescence, the public school setting often defines the socially marginal status of many youth. Deviance emerges at this time as a pattern of behavior that brings this heterogeneous group together, hence, the term confluence (Dishion, Patterson, Reid, & Griesler, 1994). This process of social augmentation has been documented at the level of network analysis, where we find that initial levels of peer rejection interact with levels of peer liking (multiplicative term) to predict growth in the homogeneity in deviance of one’s social clique, which in turn predicts increasing levels of deviance (Dishion, Light, & Yasui, 2004).
With this broader perspective in mind, it is not surprising that we find that these brief, videotaped interactions yield such powerful predictions. In general, we find that both initial level of deviant talk and growth in deviant talk, in the context of friendships, is related to lower levels of achievement and happiness and to higher levels of negative adult outcomes. From this evolutionary point of view, the tension of a paradox is reduced, in that, if deviance is functional from both a microsocial (i.e., elicits laughter) and a macrosocial (i.e., sex and parties) level, then the youths’ neglect of potential long-term negative side effects is understandable. Similar decisions are made all the time, when youth and adults develop behavior patterns that are, in the short run, enjoyable, but in the long run, detrimental to health.

AUTHORS’ NOTE

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