



Published in final edited form as:

Child Dev. 2014 September ; 85(5): 1866–1880. doi:10.1111/cdev.12250.

What Ever Happened To The ‘Cool’ Kids? Long-Term Sequelae Of Early Adolescent Pseudomature Behavior

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Abstract

Pseudomature behavior—ranging from minor delinquency to precocious romantic involvement—is widely viewed as a nearly normative feature of adolescence. When such behavior occurs *early* in adolescence, however, it was hypothesized to reflect a misguided overemphasis upon impressing peers and was considered likely to predict long-term adjustment problems. In a multi-method, multi-reporter study following a community sample of 184 adolescents from age 13 to 23, early adolescent pseudomature behavior was linked cross-sectionally to a heightened desire for peer popularity and to short-term success with peers. Longitudinal results, however, supported the study’s central hypothesis: Early adolescent pseudomature behavior predicted long-term difficulties in close relationships, as well as significant problems with alcohol and substance use, and elevated levels of criminal behavior.

The adolescent use of behaviors such as minor delinquency or precocious romantic involvement to appear mature or ‘cool’ among peers has long been recognized both in research (Galambos, Barker et al., 2003; Moffitt, 1993) and popular culture (see e.g., Shakespeare’s *Henry IV Part 1*, James Dean’s *Rebel Without a Cause*, Tina Fey’s *Mean Girls*). Adolescent pseudomature behavior has been characterized as reflecting a desire to achieve social maturity without a concomitant level of emotional and behavioral maturity (Greenberger & Steinberg, 1986), and although such behavior has long been viewed as widespread and nearly normative, normative does not necessarily mean healthy or adaptive. Cicchetti and Rogosch (2002) have suggested that adolescents are most likely to engage in pseudomature behavior when they lack confidence in their capacity to meet the developmental challenge of managing peer relations, and several studies suggest that adolescents seeking to appear older than their chronological age may actually be less mature than their peers (Galambos, et al., 2003; Galambos & Tilton-Weaver, 2000; Tilton-Weaver, Kakihara et al., 2010). Most importantly, the pursuit of pseudomaturity in adolescence is believed to have significant long-term implications for development well into adulthood (Galambos, et al., 2000), though this latter proposition has received virtually no empirical scrutiny.

There are a variety of routes by which adolescents may seek to establish apparent maturity and attain status with peers via pseudomature behavior, ranging from the mildly destructive

to the immature but relatively harmless. A substantial proportion of minor adolescent delinquency, for example, is believed to result from teens seeking the appearance of maturity and status with peers by engaging in acts of deviance to establish that they are no longer compliant children (Lansford, Killeya-Jones et al., 2009; Moffitt, 1993). In contrast, teens can also gain the appearance of maturity in more benign, if still immature ways. For example, they may seek to associate with peers who are superficially more attractive—as both physical attractiveness and its pursuit are associated with perceived maturity by adolescents, and having a coterie of attractive friends can convey the appearance of social sophistication and success (Harter, 2012; Johnson & Collins, 1988). Precocious romantic activity provides still another venue through which early adolescents can seek to establish the appearance of maturity via behavior that is typically associated with later adolescence and adulthood. Although involved romantic activity becomes more normative and healthy later in adolescence and early adulthood, it can be problematic early in adolescence even when it stops well short of sexual intercourse (Neeman, Hubbard et al., 1995; Thomas & Hsiu, 1993; Zimmer-Gembeck, Siebenbruner et al., 2001). Each of these behaviors—minor deviance, a focus on physical appearance in choosing friends, and precocious romantic activity—is clearly distinct; yet each shares in common the potential to provide a veneer of maturity to the early adolescent seeking to enhance status with his or her peers.

Pseudomature behavior has been cross-sectionally associated with greater popularity among peers (Maggs, Almeida et al., 1995; Miller, Lansford et al., 2009). Over time, however, the pursuit of status via pseudomature behavior seems likely to become problematic in several ways. As peers grow from adolescence into adulthood and gain real maturity along the way, they are less likely to find pseudomature behavior in others attractive. To the extent that pseudomature behavior supplants other, more positive and adaptive ways of interacting with peers, it may leave teens less socially skilled and less competent in peer relationships. This perspective suggests that the observed link between pseudomature behavior and popularity will fade as adolescence progresses and that reliance upon pseudomature behavior early in adolescence might ultimately predict lower levels of competence in social relationships in the longer-term, although neither of these premises has ever been empirically tested. Similarly, individuals who are intensely focused on status-seeking in their behavior and their friend selection in early adolescence may continue to view social status as a primary determinant of relationship success or failure as they enter new relationship domains (i.e., sustained romantic relationships) in adulthood. This in turn is likely to reinforce an inherently shallow view of these increasingly important relationships.

Of even greater potential concern, we might expect that the behavior needed to pursue the appearance of maturity and gain status with peers will evolve in problematic ways over time. Cumulative continuity theory, for example, suggests that such continuities will often be maintained and even extended when an early behavioral pattern changes future social contexts and outcomes so as to make similar or more extreme future behaviors more likely (Caspi, Bem et al., 1989; Rutter & Sroufe, 2000). Early reliance upon minor acts of delinquency to impress peers may thus lead to a greater likelihood of associating with deviance-prone peers, who in turn would only be impressed by more and more serious acts of deviance over time. The adolescent who comes to depend upon pseudomature behavior to gain peer status may gradually need to shift, for example, from minor forms of delinquency,

such as vandalism and shoplifting, to more serious acts of criminal behavior to impress even a subset of older peers. Similarly, whereas minor levels of alcohol or substance use may impress a subgroup of peers in early adolescence, by early adulthood such behavior would gain little notice, and it may take heavy drinking and more serious substance use to try to impress adult peers.

Cumulative continuity might also operate via a ‘crowding out’ effect in which the pursuit of pseudomature behavior takes precedence over the development of more adaptive means of establishing satisfying social relationships. For example, early romantic involvement, even absent sexual intercourse, has been linked to future psychosocial difficulties (Davila, 2008; Szewedo, Chango et al., 2012), and one potential explanation is that this involvement replaces time that would otherwise be spent negotiating and developing healthy, same gender peer relationships (Laursen & Williams, 1997; Zani & Jackson, 1993; Zimmer-Gembeck, 1999). Similarly, to the extent a teen achieves a degree of status with peers by simply associating with physically attractive friends, that teen may not need to work as hard at developing the kinds of support and negotiation skills that have been found to predict peer competence in the long term (Allen, Porter et al., 2006; Leadbeater, Hellner et al., 1989). From this perspective, early adolescent pseudomature behavior may engender a long-term propensity to attain social status via less adaptive means, with consequences extending from difficulties managing peer relationships adaptively to serious deviant behavior.

Although there are numerous reasons for concern about the long-term implications of the early adolescent pursuit of pseudomaturity, to this point, much of our thinking about pseudomature behavior in adolescence—from its roots, to its evolution over time, to its long-term implications—remains largely speculative. For example, although we know that certain problematic behaviors, such as early substance use and minor delinquent activity, co-evolve with peer status during adolescence (Allen, Porter et al., 2005; Mayeux, Sandstrom et al., 2008), we do not even know whether such pseudomature behavior is actually linked to a heightened desire to attain status with peers (e.g., valuing of popularity) as has been posited (Greenberger, et al., 1986). More significantly, we know almost nothing about the longer-term implications of this early adolescent behavior for late adolescent and early adult functioning. Early adolescent pseudomaturity typically involves behavior that is only mildly deviant or problematic (e.g., minor vandalism, but not felonious burglaries; romantic involvement, but not early sexual intercourse). Yet, if reliance upon pseudomature behavior in early adolescence diverts energy from more adaptive social-developmental pursuits and leads down a path to more serious difficulties in future functioning, then even these seemingly minor behaviors may warrant significant concern as markers of long-term risk. In essence, pseudomature behavior may not simply predict future problems, but may also predict the *development* of more serious adjustment problems over long periods of time, even after accounting for baseline levels of adjustment and problematic behavior in early adolescence.

To address these concerns, this study followed a community sample of adolescents and their peers intensively across a 10-year period, from early adolescence to early adulthood, examining several core predictions regarding the nature and implications of early adolescent pseudomature behavior, specifically, that:

1. A constellation of behaviors—minor delinquent activity, precocious romantic involvement and a focus on physical appearance in friendships—will each be linked to early adolescents' strong desire for status among peers.
2. This constellation will be linked to greater peer popularity in the short-term, but this link will fade as adolescence progresses and peers mature.
3. Early adolescents engaging in high levels of pseudomature behavior will continue to be preoccupied with social status in new social venues (i.e., romantic relationships) as development progresses into early adulthood.
4. Early adolescent pseudomature behavior will predict higher levels of future problems with alcohol and substance use and serious deviant behavior, even after accounting for early signs of such behavior.
5. Early adolescent pseudomature behavior will predict lower levels of competence with peers in early adulthood, even after accounting for baseline levels of peer competence.

Methods

Participants

This report is drawn from a larger longitudinal investigation of adolescent social development in familial and peer contexts. Participants included 184 seventh and eighth graders (86 male and 98 female) followed over a 10-year period from ages 13 to 23.

Adolescents were initially recruited from the 7th and 8th grades of a public middle school drawing from suburban and urban populations in the Southeastern United States. Students were recruited via an initial mailing to all parents of students in the school along with follow-up contact efforts at school lunches. Families of adolescents who indicated they were interested in the study were contacted by telephone. Of all students eligible for participation, 63% agreed to participate either as either target participants or as peers providing collateral information. All participants provided informed assent before each interview session, and parents provided informed consent. Interviews took place in private offices within a university academic building.

Adolescents were first assessed annually over a three-year period in early adolescence (at ages 13.35 ($SD = .62$) at Wave 1; 14.29 ($SD=.75$) at Wave 2; and 15.22 ($SD = .80$) at Wave 3). At each age, adolescents' nominated their closest, same-gendered friend to be included in the study as well as an additional two peers from within their extended circle of friends and acquaintances. The primary sample of target adolescents was racially/ethnically and socioeconomically diverse: 107 adolescents (58%) identified themselves as Caucasian, 53 (29%) as African American, 15 (8%) as of mixed race/ethnicity and 9 (5%) as being from other minority groups. Adolescents' parents reported a median family income in the \$40,000 - \$59,999 range.

Follow-up data were obtained for 175 (95.1%) of the original 184 participants at ages 20 to 23 in early adulthood. In addition to participant-provided data, current early adult close friends provided data at follow-up for 116 participants.

Attrition Analyses

Attrition analyses examined missing data for each type of data obtained in the follow-up. Analyses indicated that adolescents for whom follow up data was not available in early adulthood differed from those for whom data were available only in terms of having lower levels of popularity and higher levels of minor deviant behavior at age 15. Those adolescents who did not have data available from close friends in early adulthood differed from those who did have such data only in having higher initial family income.

To best address any potential biases due to attrition in longitudinal analyses, full information maximum likelihood (FIML) methods were used, including all variables that were linked to future missing data (i.e., where data were not missing completely at random). Because these procedures have been found to yield the least biased estimates when all available data are used for longitudinal analyses (vs. listwise deletion of missing data) (Arbuckle, 1996), the entire original sample of 184 was utilized for these analyses. This full sample thus provides the best possible estimates of variances and covariances in measures of interest and was least likely to be biased by missing data. Alternative longitudinal analyses using just those participants without missing data (i.e., listwise deletion) yielded results that were substantially identical to those reported below. In sum, analyses suggest that attrition was very low in terms of target adolescent participation, and even where higher (i.e., in terms of obtaining collateral peer data), was only linked to one baseline measure which was included in analyses and thus not likely to have distorted any of the findings reported.

Procedure

In the initial introduction and throughout all sessions, confidentiality was assured to all study participants and adolescents were told that no one would be informed of any of the answers they provided. Participants' data were covered by a Confidentiality Certificate issued by the U.S. Department of Health and Human Services, which protected information from subpoena by federal, state, and local courts. Transportation and childcare were provided if necessary. Adolescent/adult participants, their parents, and collateral peers were all paid for participation.

Measures

Minor deviant behavior (ages 13–15) was assessed with an instrument initially validated and normed in a longitudinal study of a national probability sample of adolescents (Elliott, Huizinga et al., 1989). Minor deviant behavior was measured as the total number of times in the prior six months that youths reported engaging in each of 8 non-overlapping classes of behavior that are considered minor offenses or “status” offenses for youth (i.e. they warrant attention from the criminal justice system as delinquent acts, though they would not necessarily be considered as significant criminal behavior in adults). For example, these behaviors include damaging or destroying property belong to one's parents, sneaking into a movie without paying, and theft of items worth less than \$5.00, or theft of items from

parents or family members. Scores were summed then averaged across the three ages to produce the overall score.

Precocious romantic behavior (ages 13–14) was assessed via a single item repeated across two years of the study asking, “How many people have you ever ‘made out’ with (kissed a long time and touched)?” Participants answered on a 5-point scale ranging from 0 – “None,” to 5 – “More than 10”. At age 14, the item was changed to refer to behavior in the past year. Responses were highly correlated across ages 13 and 14, $r = .71$, and were thus summed then averaged across the two years of the study.

Selection of Attractive Peers (ages 13–15) was assessed by coding the physical attractiveness of target participants’ closest friend from videotaped observations of the target participant and his or her closest same gender friend engaged in social interactions at ages 13, 14, and 15. At all ages, half of the TV screen was covered, so as to show only the close friend. The audio was also muted so as to remove any effect of discussion content (although discussions had typically not really begun in the first ten seconds that were coded). Dynamic physical attractiveness (i.e., capturing both static appearance as well as movement and expressive behavior) was reliably coded using a naïve rater strategy (Kopera, Maier et al., 1971; Patzer, 1985; Riggio, Widaman et al., 1991). In a naïve coding system coders are told to apply a lay understanding of the meaning of a given construct/term. In this case, lay coders were told to rate attractiveness based on their own understanding of the common meaning of the term ‘physical attractiveness’. Naïve coding systems are designed to capture typical lay notions of constructs, and attain reliability by compositing ratings from multiple raters, and in this case yielded highly reliable ratings at ages 13 (ICC = .93), 14 (ICC = .89) and 15 (ICC = .87). The coding team ($n = 8$) was ethnically diverse and included both males and females. Assessments of physical attractiveness across these ages were averaged to create an index of average attractiveness of a participant’s closest friends (who could differ across these ages). Internal consistency of the combined measure across ages was good, Cronbach’s $\alpha = .77$

Valuing of Popularity (Age 13) was assessed via a 3-item, 5-point Likert-type scale, asking questions such as “How important is it to you to be popular with a lot of different kind of kids?” Internal consistency for this measure was moderate, though within an expectable range for a measure with three-items, Cronbach’s $\alpha = .63$.

Sociometric Popularity (Ages 13–15). Adolescent popularity was assessed using a limited nomination sociometric procedure at each age from 13 to 15. Each adolescent, their closest friend at a given age (friends could differ across ages), and two other target peers were asked to nominate up to 10 peers in their grade with whom they would “most like to spend time on a Saturday night.” The raw number of ‘like’ nominations each teen received was standardized within grade level as a measure of desirability as a social companion in the broader peer group following the procedure described in Coie et al (1982). This study used grade-based nominations (e.g., students could nominate anyone in their grade at school) rather than classroom-based nominations due to the age and classroom structure of the school that all participants attended. As a result, instead of friendship nominations being done by 15 to 30 children in a given classroom, each teen’s nominations were culled from

among 72 to 146 teens (depending on the teen's grade level). All participating students in a given grade were thus potential nominators of all other students in that grade, and an open nomination procedure was used (i.e. students were not presented with a roster of other students in their school, but wrote in names of liked and disliked students). Students used this procedure easily, producing an average of 9.25 liking nominations (out of 10). The large number of raters for each teen (in essence, each teen received a yes/no nomination from each nominator in his/her grade), makes this large subsample of nominators likely to yield fairly reliable estimates of popularity for each teen (Prinstein, 2007). This approach to assessing social acceptance has been found previously to be related to adolescent attachment security, qualities of positive parental and peer interactions, and short-term changes in levels of deviant behavior and to display high test-retest reliability ($r = .77$) over a one-year period (Allen, et al., 2005; Allen, Porter et al., 2007; McElhaney, Antonishak et al., 2008).

Alcohol and Marijuana Use. (Age 13–15; Age 21–23). Participant alcohol and marijuana use was assessed with the Alcohol and Drug Use Questionnaire (Johnston, O'Malley et al., 1987), a self-report measure that includes items assessing the frequency of participant use of alcohol and/or marijuana in the past 30 days. This measure is based on the "Monitoring the Future" surveys (Johnston, et al., 1987). Johnston and colleagues (1987) found high reliability from year to year and consistency between related measures within the same questionnaire administration. Construct validity in their research was demonstrated as self-reported substance use was related to attitudes, beliefs, and related behaviors and under-reporting appeared to be minimal. Scores for each year from age 13–15 and from age 21–23 were summed then averaged to produce alcohol use scores for early adolescence and early adulthood, respectively.

Problems Due to Alcohol and Substance Use (Age 21–23) were assessed with the Core Alcohol and Drug Survey (Presley, Meilman et al., 1994). This survey asks respondents to note whether they've experienced any of 20 different problems due to drinking or drug use during the past year, ranging from having a hangover to being hurt or injured, to being arrested for driving under the influence. A total problems score is created as the sum of responses to these 20 dichotomous items. It has previously been administered nationally to more than 50,000 college-age students each year (Presley, et al., 1994). The number of problems reported in each year from age 21–23 was summed then averaged to produce a total problems score, which was highly reliable, Cronbach's $\alpha = .93$.

Participant Criminal Behavior (Ages 13–15, 21–23) was measured as the total number of times youths reported engaging in each of 37 non-overlapping classes of significant illegal behavior (designed to assess all significant classes of criminal behavior, except for drug use) during the previous six months. When obtained by sensitive interviewers who have first established rapport with interviewees, self-reports of problem behaviors have long been found: a) to correlate significantly with reports obtained from independent observers and official records; b) to be adequately reliable; and c) to eliminate systemic biases present in official records of deviant behavior (Elliott, et al., 1989; Huizinga & Elliott, 1986). Ratings were summed and averaged to yield rates of criminal behavior across ages 13 to 15 and ages 21 to 23.

Close Friendship Competence (Ages 13–15). The participant's closest friend completed a modified version of the Adolescent Self-Perception Profile (Harter, 1988) to assess the target teen's overall competence in forming and maintaining close friendships. The measure was modified so that peers completed four items as they thought they best described the target teen's behavior as a close friend. Scores from each age were summed then averaged to produce an overall rating which had good internal consistency, even given that friends who provided ratings could change from year to year (Cronbach's $\alpha = .72$). This approach has been found to yield valid assessments of target teens' close friendship competence in other studies relating competence to outcomes such as adolescent attachment security (Allen, Moore et al., 1998).

Peer-rated Social Competence (Age 22) was assessed via the Positive Peer Relations scale from the Young Adult Adjustment Scale (Capaldi, King et al., 1992). In this measure, peers rate participants using six items answered on a 1 (not true) to 5 (very true) scale tapping items such as "has friends he/she really enjoys being with," "gets along well with friends or acquaintances," and "gets along well with his/her girlfriend/boyfriend(s)." Internal consistency was good, Cronbach's $\alpha = .75$.

Perception of Social Status as the Reason for Relationship Dissolution (Age 22–23) was assessed via the Adolescent Attributions for Romantic Dissolution measure (Connolly, Bravo et al., 2013). Items asked the extent to which the participant believed that the most recent breakup of a romantic relationship occurred because his or her partner felt the participant was 'not popular enough,' was 'not part of the right crowd,' or that the relationship was making the participant's partner less popular. Respondent's answered three items, repeated each year at ages 22 and 23 on a 4-point Likert scale ranging from 1 (Not at all) to 4 (Very much). Responses were summed then averaged across years and internal consistency for the resulting scale was good, Cronbach's $\alpha = .74$.

Results

Preliminary Analyses

Means and standard deviations for all substantive variables examined in the study are presented in Table 1. Initial analyses examined the role of gender and family income in early adolescence on the primary measures examined in the study. Several variables of substantive interest in the study were related to both adolescent gender and income in the adolescent's family of origin, hence these factors were considered as covariates in analyses below. We also examined possible moderating effects of gender and family income on each of the relationships described in the primary analyses below. All moderating effects analyzed were obtained by creating interaction terms based on the product of centered main effect variables. No moderating effects were found beyond what would be expected by chance, thus indicating that results described below did not reliably differ between males and females or between adolescents from high vs. low income families.

For descriptive purposes, Table 1 also presents simple correlations among all primary constructs examined in the study. These analyses indicate numerous simple correlations between early adolescent pseudomature behaviors (i.e., minor deviance, selection of

attractive peers, precocious romantic behavior), and initial (but not later) levels of popularity, and between these early pseudomature behaviors and later negative outcomes, all of which are explored further below.

Primary Analyses

For all primary analyses, Mplus (version 6.12) (Muthén & Muthén, 2012) was employed for assessment of key relations in hierarchical models, using full information maximum likelihood handling of missing data and robust estimation procedures to accommodate non-normality in some outcome measures. Adolescent gender and family income were entered in a first step as predictors, followed by substantive predictors.

Hypothesis 1: A constellation of behaviors—minor delinquent activity, precocious romantic involvement and a focus on physical appearance in friendships—will each be linked to early adolescents' strong desire for peer approval.

After entering demographic factors as described above, the degree to which adolescents placed a high value upon attaining peer approval was examined as a statistical predictor of each of the three proposed pseudomature behaviors. Valuing of popularity was a significant predictor of each of these behaviors after accounting for gender and income ($\beta = .15, p = .01$; $\beta = .20, p = .004$; $\beta = .16, p = .04$, for minor delinquency, attractiveness of close peer, and precocious romantic activity respectively). We also examined prediction of precocious romantic activity, after first accounting for presence or absence of a history of having had sexual intercourse, and the prediction remained ($\beta = .17, p = .005$), indicating that the link between these two constructs was not accounted for by teens who were engaged in early sexual intercourse.

Creation of a Single Pseudomature Behavior Variable—For further analyses, we created an overall index of pseudomature behavior by standardizing the annual assessments of minor delinquent acts, selection of attractive friends, and precocious romantic activity, and summing them into a resulting index with good internal consistency (Cronbach's $\alpha = .75$). This overall pseudomature behavior variable was used in all further analyses.

Hypothesis 2: Early adolescent pseudomature behavior will predict popularity in the short-term but this relation will fade over time.

Latent growth curve analyses were used to next examine the extent to which adolescent pseudomature behavior across early adolescence was linked to both baseline levels (at age 13) and change over time (from age 13 to age 15) in adolescents' popularity with peers. Results, presented in Table 2, based on a highly significant overall linear growth model, $\chi^2_{(3)} = 249.5, p < .001$, indicate that pseudomature behavior was associated with higher levels of popularity among peers at age 13, as predicted. However, over the following years, pseudomature behavior was associated with a significant relative decline in levels of popularity. This indicates that, as hypothesized, pseudomature behavior was indeed linked to higher status with peers early in adolescence, but that as development progresses and peers mature, this link steadily fades out, and was no longer present by age 15 (see Figure 1). These findings are also consistent with initial correlations presented in Table 1, showing that

pseudomature behavior was linked to popularity at age 13, but that this link was no longer significant by age 15.

Hypothesis 3: Early adolescent pseudomature behavior will predict perceived early adult romantic partner focus on social status.

Analyses next assessed the extent to which a pattern of pseudomature behavior in early adolescence would predict a perceived emphasis on the importance of the social status in romantic partners' decision making about romantic relationships in early adulthood. Results, presented in Table 3, show that after accounting for gender and income at baseline, higher levels of pseudomature behavior at age 13 to 15 predicted participants' belief that romantic partners were ending relationships with them because of their own (the participants') lack of adequate social status.

Hypothesis 4: Early adolescent pseudomature behavior will predict future use of and problems with alcohol and marijuana and serious deviant behavior in early adulthood.

Analyses next examined the extent to which early adolescent pseudomature behavior would predict future use of alcohol and marijuana and problems associated with use. After entering demographic covariates, analyses next entered baseline levels (at ages 13–15) of early adolescent use of alcohol and marijuana, so as to permit examination of predictions from pseudomaturity that were above and beyond any observed continuities in alcohol and marijuana use over time. As expected, early levels of use were significantly related to later use at ages 21–23. Early adolescent pseudomature behavior was then entered as the final step in models, and was found to be a significant additional predictor of later use, accounting for significant incremental variance in use ($R^2 = .098, p < .001$), even after baseline levels of use. In the final model, after entering pseudomature behavior as a predictor, baseline levels of use fell to non-significance as a predictor of future use. Results are presented in Table 4.

Very similar results were obtained when examining predictors of problems associated with alcohol and marijuana use in early adulthood, as also seen in Table 4. Again, baseline levels of use were a significant predictor when first entered into models, but pseudomature behavior added significant variance to these predictions ($R^2 = .129, p < .001$), and after entering pseudomature behavior into models, baseline levels of substance use were no longer a significant predictor.

A similar pattern of findings was obtained with respect to serious criminal behavior in early adulthood, as depicted in Table 5, with such behavior being predicted from early adolescent pseudomature behavior, even after accounting for levels of such criminal behavior in early adolescence.

Hypothesis 5: Early adolescent pseudomature behavior will predict lower levels of competence with peers in early adulthood.

Finally, analyses assessed the extent to which a pattern of pseudomature behavior in early adolescence would predict lower competence in peer relationships in early adulthood at age 22, as reported by a close peer of the early adult participant. Results, presented in Table 6,

show that after accounting for gender and income at baseline, and accounting for baseline ratings of peer-reported close friendship competence in early adolescence, higher levels of pseudomature behavior at age 13 to 15 predicted lower peer ratings of participants' close friendship competence in early adulthood.

Discussion

This study found that a constellation of pseudomature behaviors in early adolescence predicted significant difficulties in social functioning up to ten years later, in early adulthood. The findings support the proposition that early adolescent attempts to gain status via pseudomature behavior are not simply passing annoyances of this developmental stage, but rather may signal movement down a problematic pathway and away from progress toward real psychosocial competence. The early adolescent behaviors examined—minor forms of delinquency, early romantic behavior, and a focus on physical appearance in seeking out friends—are often considered to be nearly normative and only modestly problematic aspects of adolescence, and are widespread by mid-adolescence (Greenberger, et al., 1986; Moffitt, 1993); however, when they appear early in adolescence these seemingly minor behaviors predict far greater future risk than has heretofore been recognized.

In terms of competence with peers, pseudomature behavior in early adolescence predicted not only declining popularity with peers across adolescence but lower levels of peer competence, as rated by peers, in early adulthood. One potential explanation for these findings is provided by cumulative continuity theory (Caspi, et al., 1989; Rutter, et al., 2000). This theory suggests that efforts to attain status with peers via superficial, pseudomature behaviors might lead to future difficulties because these pseudomature behaviors replace efforts to develop positive social skills and meaningful friendships and thus leave teens less developmentally mature and socially competent over time. Early pseudomature behavior also predicted higher adult levels of more serious criminal behavior, alcohol and drug use, and problems associated with such use. Cumulative continuity theory again suggests an explanation in which early pseudomature behavior may alter critical contexts in which adolescents are developing so as to lead to more serious criminal behavior in the future. For example, if pseudomature behavior leaves early adolescents more likely to associate with deviant teens and more likely to believe that relying upon deviant behaviors is a useful way of impressing peers, then such behavior would likely place teens at greater risk of engaging in more serious deviant behavior going forward.

Importantly, the predictions to future problematic behaviors were not a reflection of simple continuities over time in levels of deviance. Two of the three behaviors in the pseudomature cluster examined in this study were not even considered deviant. More importantly, early adolescent pseudomature behavior had value in predicting future criminal behavior and alcohol and marijuana use problems *over and above* early adolescent markers of such problems. With respect to alcohol and marijuana use, early adolescent pseudomature behavior was actually a better predictor of future such substance use problems in adulthood than were even early adolescent levels of such use. In fact, after accounting for pseudomature behavior, early adolescent levels of substance use became insignificant as

predictors of future use, suggesting that to the extent that pseudomature behavior and substance use were correlated in early adolescence, it was pseudomature behavior which took on the primary role in statistically predicting future substance use—a striking degree of heterotypic continuity for a behavior that typically displays considerable homotypic continuity over time (Blozis, Feldman et al., 2007; Guttmanova, 2011). This finding indicates just how potentially important this social pathway toward future difficulties may be in identifying individuals at-risk for long-term problems with alcohol and substance use. These findings also suggest that the constellation of pseudomature behaviors examined was capturing something other than a simple propensity toward deviant behavior. These findings further supports a cumulative continuity interpretation of results, in which pseudomature behavior is potentially altering key social contexts and behavioral patterns in ways that lead to greater future difficulties, even after accounting for the relatively minor nature and modest stabilities of the pseudomature behaviors themselves.

In spite of the substantial long-term negative correlates of pseudomature behavior, the allure of such behavior to early adolescents was also easy to see within these data. Prior research has suggested that adolescents engaging in pseudomature behaviors tend to feel older, at least in the short term (Arbeau, Galambos et al., 2007; Galambos, Albrecht et al., 2009). The present study highlights an additional motivating force behind such behavior: At age 13, engaging in pseudomature behavior was associated with greater social preference among peers—in the sense that peers were more likely to say they would like to spend time with participants—thus providing a powerful short-term reinforcement. Early adolescents engaging in these behaviors did indeed appear to fit the stereotype of the ‘cool’ kid—achieving the appearance of maturity, social status, and desirability as companions among their peers. Notably, the adolescents who engaged most in pseudomature behavior were also those who most highly valued being popular (i.e., for whom popularity and status among peers were most important). This status-seeking link is important, in that it suggests that at a formative point in social development, some early adolescents are learning to establish connections with their peers by engaging in pseudomature behaviors so as to impress those peers, rather than by learning to connect successfully with them via more adaptive means. Each of the pseudomature behaviors assessed was linked to teens placing a high value, even relative to their peers, upon being popular.

Although the status value of pseudomature behavior has been previously suggested with regard to delinquent activity (Moffitt, 1993), this is the first study to empirically document status-seeking as an important facet of pseudomature behavior, and to extend this conceptualization to pseudomature behaviors other than delinquent activity. Given emerging findings that early adolescent popularity—whether measured as perceived popularity or as actual sociometric status—is linked to deviant and problematic behavior during this period (Allen, et al., 2005; Balsa, Homer et al., 2011; Mayeux, et al., 2008), such behavior may have real appeal to young teens who are particularly preoccupied, relative to their peers, with social status. These findings suggest just how tricky a path these teens must negotiate if they are to seek both strong peer relationships and behavior that will be adaptive in the larger adult world (Allen, Chango et al., in press). Unfortunately for these status-seeking teens, reliance upon pseudomature behavior loses its social cachet over time, such that by age 15, early adolescents who engage in high levels of pseudomature behavior no longer

have any popularity advantage relative to their peers. Indeed, it is possible that this fading popularity advantage may be what leads these adolescents to pursue more and more extreme behaviors in an effort to attain status with at least a subset of their peers, although this explanation remains for future research to examine.

Even almost a decade later, however, social status concerns continued to play a key role in the lives of these individuals as adults, as they found themselves more likely to perceive that their romantic partners were ending relationships with them based upon their own lack of social status. One explanation for this long-term link is that teens who engage in high levels of pseudomature behavior have set themselves on a path in which they place an outsized role on the importance of social status in relationships. These teens may then be likely to perceive social status as a primary reason for the formation or dissolution of important relationships (e.g., romantic relationships) going forward, whether or not this is actually the case. Alternatively, these teens may actually be later selecting partners as adults who are similar to themselves in terms of status-seeking behavior, and may thus find that their partners actually are ending relationships with them due to status concerns. In either case, these findings make clear that the status-seeking aspect of early adolescent pseudomature behavior displays long-term continuity that extends into a new and important relationship domain even across a span of nearly a decade.

One critical qualification to these findings is that they applied to pseudomature behaviors assessed in *early* adolescence. This is important, because by mid- to late-adolescence, the behaviors assessed become common enough that long-term links to problematic outcomes become far less likely. This suggests a distinction between engaging in behaviors such as minor deviant activity or romantic behavior later in adolescence, as a result of normative adolescent drives for autonomy, social connection, and romantic relationships vs. engaging in these behaviors in early adolescence, where they may primarily reflect a desire to impress peers. Meta-analytic research on adolescent sexual behavior has yielded findings consistent with this perspective. This research has found that sexual behavior that occurs in late-adolescence reflects biological and psychosocial maturity and is distinguishable from earlier sexual activity that appears driven by less adaptive processes and which is associated with less adaptive outcomes (Zimmer-Gembeck & Helfand, 2008). For parents and others working with adolescents, the critical point is *not* that the pseudomature behaviors observed are fundamentally pathological—to the contrary romantic involvement becomes normative and healthy later in adolescence, and most adolescents engage in at least some degree of minor delinquent behavior. Rather, it is that engaging in these behaviors very *early* in adolescence, and as an apparent means of seeking peer status, is a significant marker of future risk.

Several other potential limitations also apply to these findings. First, although the longitudinal and lagged analyses conducted in this study are sufficient to reject causal hypotheses, they cannot demonstrate the presence of causal pathways. Second, one question that might be asked regarding these findings is how they relate to the pubertal status of early adolescents, which has been inconsistently linked to delinquent and romantic behavior (Galambos, et al., 2003; Graber, Seeley et al., 2004). Although no measures of pubertal status were available in this study, by the age 13–15 period during which pseudomature

behavior was observed, the vast majority of teens are well into puberty. This fact, plus the lack of consistent links between pubertal timing and delinquent and romantic behavior in the existing literature, suggest that prior differences in pubertal timing are unlikely to account for the findings observed.

Third, ‘popularity’ is now recognized as potentially referring to both preference-based measures (i.e., who do teens prefer as associates) and status-based measures (i.e., who do teens perceive as being ‘popular’). The sociometric measure used in this study was a preference-based measure, although in some respects a status-based measure might have more precisely captured the desire of teens to be and appear ‘cool’ among peers. It remains possible, for example, that teens engaging in pseudomature behavior might possibly maintain a degree of status-based popularity (i.e., perceptions by others that they are members of the ‘popular’ group) even if preference-based measures (such as used in this study, indicating other teens’ actual desire to spend time with study participants) show declining social preference over time for teens engaging in pseudomature behavior. Similarly, the measure of valuing popularity, relying solely upon lay usage of the term, did not clearly distinguish between social preference vs. social status in peer relationships. In addition, the sociometric assessment employed in this study limited raters to those from the same grade level (as do virtually all such assessments). In this case, however, the result is that if teens succeed in achieving popularity among older adolescents (but not among their age mates), our assessment would not have detected this effect. Further research could clearly benefit from efforts to clarify the role of each of these aspects of peer status, and its pursuit, in pseudomature behavior.

Fourth, the selection of physically attractive close friends was used as a proxy for appearance-consciousness in early adolescence. Future research might profitably examine other more direct indices of such a focus on appearance in either one’s peers or in oneself, to more precisely examine the importance of a focus on appearance in pseudomature efforts to impress peers. Finally, future research is also now clearly needed to explore potential pathways that might explain both how and why pseudomature behavior in adolescence develops, as well as the intervening mechanisms by which it leads to long-term problematic continuities.

Acknowledgments

This study and its write-up were supported by grants from the National Institute of Child Health and Human Development and the National Institute of Mental Health (9R01 HD058305-11A1 & R01-MH58066).

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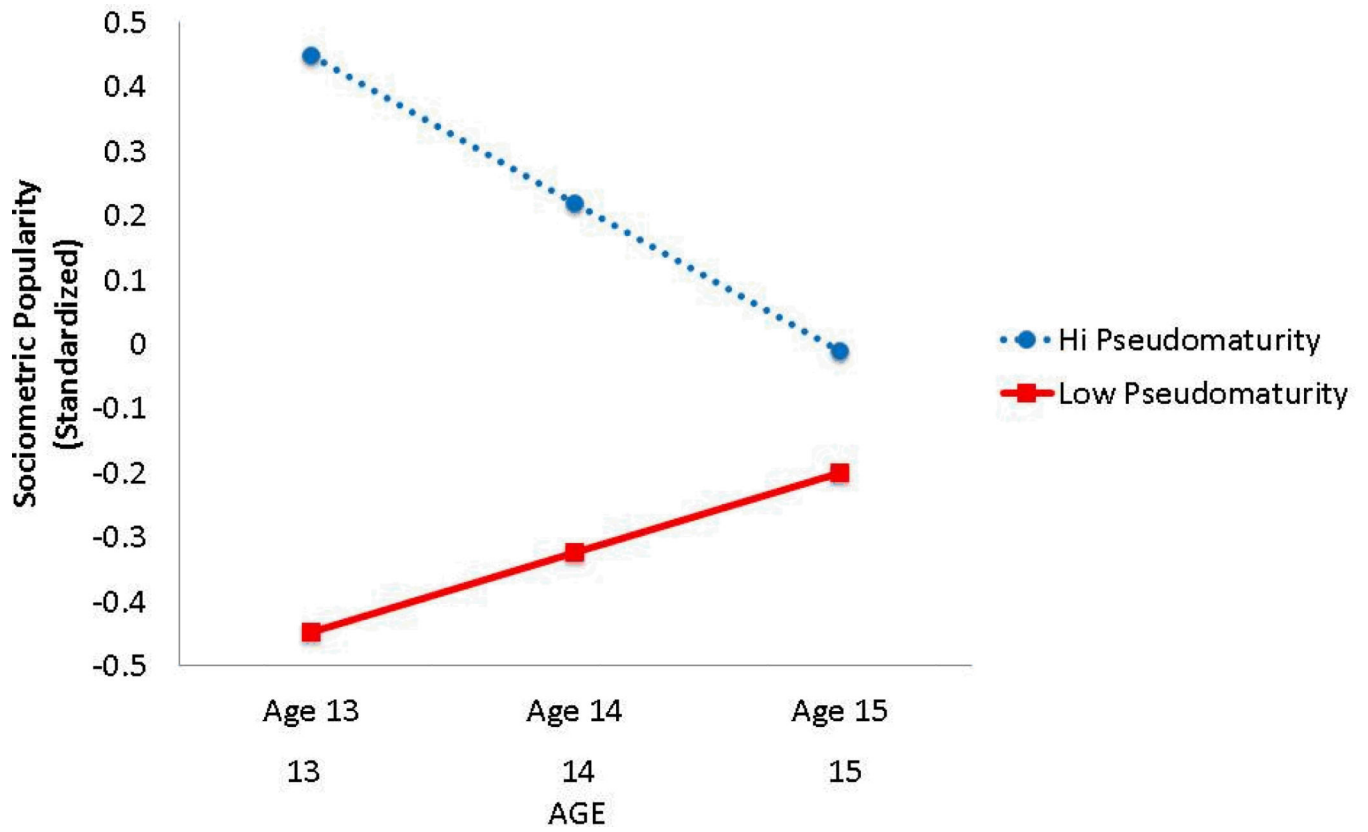


Figure 1. Changing Relationship Between Pseudomature Behavior and Popularity Over Time. Levels of popularity for high and low level (± 1 SD) of pseudomaturity are calculated from results of growth curve analyses.

Table 1

Means, Standard Deviations, and Intercorrelations of Substantive Variables

	Mean	SD	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Pseudomature Behavior (13-15)	0	1.0	.71***	.66***	.72***	.29***	.28***	.18*	.10	.22**	.58***	.48***	.50***	.46***	.27***	.07	-.17+
2. Minor Deviance (13-15)	1.15	0.24	--	.17*	.30***	.19*	.09	.05	.05	.30***	.57***	.28***	.45***	.69***	.18*	.10	-.19*
3. Selection of Attractive Peers (13-15)	3.66	0.69	--	--	.20**	.20**	.31***	.23**	.14+	.10	.18*	.29***	.26***	.00	.07	.09	.11
4. Precocious Romantic Behavior (13-15)	1.91	1.08	--	--	.20**	.20**	.17*	.08	.02	.05	.46***	.43***	.33***	.27***	.31***	-.04	-.27**
5. Valuing of Popularity (13)	6.10	1.68	--	--	--	--	.02	-.01	-.00	.10	.11	.13+	.09	.15*	-.06	.02	-.03
6. Sociometric Popularity (13)	0.96	1.35	--	--	--	--	.76***	.47***	-.07	-.07	.24***	.22**	.15*	-.09	-.08	.17*	.02
7. Sociometric Popularity (14)	0.93	1.23	--	--	--	--	--	.71***	-.04	-.04	.14+	.20**	.12	-.14+	-.10	.14	.11
8. Sociometric Popularity (15)	0.85	1.35	--	--	--	--	--	--	--	-.13	.17*	.20**	.10	-.07	-.12	.15*	.06
9. Romantic Partner Status Focus (21-22)	3.29	0.75	--	--	--	--	--	--	--	--	.01	.07	.14+	.22**	.18*	.01	-.17+
10. Alc/Marj. Use (13-15)	0.32	0.62	--	--	--	--	--	--	--	--	--	.31***	.36***	.51***	.23**	.04	-.07
11. Alc/Marj. Use (21-23)	1.24	0.93	--	--	--	--	--	--	--	--	--	--	.62***	.12	.31***	.10	-.14
12. Problems related to Subst. Use (21-23)/Career Satisfaction	2.92	2.87	--	--	--	--	--	--	--	--	--	--	--	.30***	.28***	.07	-.14
13. Criminal Behavior (13-15)	18.32	3.71	--	--	--	--	--	--	--	--	--	--	--	--	.22**	-.03	-.17+
14. Criminal Behavior (21-23)	23.58	3.74	--	--	--	--	--	--	--	--	--	--	--	--	--	.01	-.06
15. Peer-rated Close Friendship Competence (13-15)	13.41	1.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.06

	Mean	SD	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
16. Peer-rated Social Competence (22)	24.45	3.72															--

Note: Correlations are all multiplied by 100. Correlations in italics indicate the relation of individual behaviors to the broader pseudomature behavior scale to which they are arithmetically linked.

*** $p < .001$.

** $p < .01$.

* $p < .05$.

+ $p < .10$.

Table 2

Growth Curve Model Examining Link Between Changing Popularity from Age 13 to Age 15 And Early Adolescent Pseudomature Behavior

	Popularity	
	B	SE
Intercept	-.42	.38
Gender (1=M; 2=F)	.11	.16
Total Family Income (13)	.20***	.04
Time	-.05	.05
Pseudomature Behavior	.45**	.14
Time X Pseudomature Behavior	-.18*	.07

Note.

 $p < .001$.

**
 $p < .01$.

*
 $p < .05$.

Table 3

Predicting Perceived Importance of Status in Romantic Relationship Dissolution (Age 22–23) from Early Adolescent Pseudomature Behavior (Age 13–15)

	Perceived Romantic Partner Status Focus (Age 22–23)		R^2	Total R^2
	β entry	β final		
Step I.				
Gender (1=M; 2=F)	-.19***	-.14*		
Total Family Income (13)	-.06	-.09		
<i>Statistics for Step</i>			.035	.035
Step II.				
Pseudomature Behavior (Age 13–15)	.20**	.20**		
			.035**	.070*

Note.

 $p < .001$.

**
 $p < .01$.

*
 $p < .05$.

Table 4
 Predicting Young Adult Substance Use and Problems Related to Use (Age 21–23) from Early Adolescent Pseudomature Behavior (Age 13–15)

	Alcohol & Marijuana Use (Age 21–23)			Problems Related to Substance Use (Age 21–23)		
	β entry	β final	R^2 Total	β entry	β final	R^2 Total
Step I.						
Gender (1=M; 2=F)	-.26****	-.16*		-.10	.02	
Total Family Income (13)	.20**	.14*		.18**	.11	
<i>Statistics for Step</i>			.118**			.047
Step II.						
Alcohol & Marijuana Use (Age 13–15)	.24**	.02	.054**	.31****	.06	.093****
Step III.						
Pseudomature Behavior (Age 13–15)	.40****	.40****	.098****	.45****	.45****	.129**
			.270****			.269****

Note.

 $p < .001$.

**
 $p < .01$.

*
 $p < .05$.

Table 5

Predicting Young Adult Criminal Behavior (Age 21–23) from Early Adolescent Pseudomature Behavior (Age 13–15)

	Criminal Behavior (Age 21–23)			
	β entry	β final	R^2	Total R^2
Step I.				
Gender (1=M; 2=F)	-.11	-.04		
Total Family Income (13)	-.06	-.08		
<i>Statistics for Step</i>			.014	.014
Step II.				
Criminal Behavior (Age 13–15)	.17	.08	.028	.042
Step III.				
Pseudomature Behavior (Age 13–15)	.22***	.22***	.036***	.078***

Note.

 $p < .001$.

Table 6

Predicting Peer-rated Peer Relationship Quality (Age 22) from Early Adolescent Pseudomature Behavior (Age 13–15)

	Peer Relationship Quality (Age 22)			
	β entry	β final	R^2	Total R^2
Step I.				
Gender (1=M; 2=F)	.10	.04		
Total Family Income (13)	.24**	.27***		
<i>Statistics for Step</i>			.063	.063
Step II.				
Close Friendship Competence (Age 13–15)	.04	.06	.001	.064
Step III.				
Pseudomature Behavior	-.24**	-.24**	.054**	.118*

Note.

p < .001.

**
p < .01.

*
p < .05.