

Age Differences in Resistance to Peer Influence

Laurence Steinberg and Kathryn C. Monahan
Temple University

Prior research describes the development of susceptibility to peer pressure in adolescence as following an inverted U-shaped curve, increasing during early adolescence, peaking around age 14, and declining thereafter. This pattern, however, is derived mainly from studies that specifically examined peer pressure to engage in antisocial behavior. In the present study, age differences and developmental change in resistance to peer influence were assessed using a new self-report instrument that separates susceptibility to peer pressure from willingness to engage in antisocial activity. Data from four ethnically and socioeconomically diverse samples comprising more than 3,600 males and females between the ages of 10 and 30 were pooled from one longitudinal and two cross-sectional studies. Results show that across all demographic groups, resistance to peer influences increases linearly between ages 14 and 18. In contrast, there is little evidence for growth in this capacity between ages 10 and 14 or between 18 and 30. Middle adolescence is an especially significant period for the development of the capacity to stand up for what one believes and resist the pressures of one's peers to do otherwise.

Keywords: adolescence, peer pressure, peer influence

The heightened importance of peer influence is a hallmark of adolescent psychosocial functioning (Brown, 2004). Peer pressure is commonly invoked in discussions of adolescent misbehavior and is implicated in many accounts of adolescent risk taking, because most risky behavior in which adolescents engage, such as delinquency, substance use, and reckless driving, takes place in the company of peers (Chassin et al., 2004; Simons-Morton, Lerner, & Singer, 2005). Although studies of homophily (the tendency for individuals to affiliate with like-minded friends) during adolescence have yielded different estimates of the relative importance of selection versus socialization as contributors to behavioral and attitudinal similarity between adolescents and their friends (Brown, 2004), there is little doubt that peers actually influence each other and that the effects of peer influence are stronger during adolescence than in adulthood. Indeed, one recent experimental study found that exposure to peers during a risk-taking task dou-

bled the amount of risky behavior among middle adolescents, increased it by 50% among college undergraduates, and had no impact at all among adults (Gardner & Steinberg, 2005).

Two mutually compatible explanations for the increased significance of peer influence during adolescence have been offered (Brown, Clasen, & Eicher, 1986). One, which stresses changes in the salience of peers as a reference group, points to the increasingly important role that peer crowds play in defining the social landscape of early and middle adolescence. As individuals begin to sort themselves into crowds, both perceived and actual pressure to adopt the styles, values, and interests of one's friends may intensify as adolescents use social influence to regulate each other's behavior in an attempt to foster solidarity and uniformity within their group and to develop and maintain a group identity that distinguishes them from other students. This process of *normative regulation* may be an especially powerful force during middle adolescence, when upwards of 85% of American youth report membership in at least one peer crowd (Brown, 2004).

The second account focuses more on the individual than the social context. According to this view, the heightened significance of peer influence in adolescence is due mainly to changes in individuals' susceptibility to peer pressure. The increased importance of peers leads adolescents to want to alter their behavior in order to fit in; because they care more about what their friends think of them, they are more likely to go along with the crowd to avoid being rejected (Brown et al., 1986). It is possible that this heightened conformity to peer pressure during early adolescence is a sign of a sort of emotional "way station" between becoming emotionally autonomous from parents and becoming a genuinely autonomous person (Steinberg & Silverberg, 1986). In other words, the adolescent may become emotionally autonomous from parents before he or she is emotionally ready for this degree of independence and may turn to peers to fill this void. There is also some emerging evidence, albeit preliminary, that brain systems that are important in the processing of social information may

Laurence Steinberg and Kathryn C. Monahan, Department of Psychology, Temple University.

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Correspondence concerning this article should be addressed to Laurence Steinberg, Department of Psychology, Temple University, Philadelphia, PA 19122. E-mail: lds@temple.edu

undergo remodeling around the time of puberty that conceivably could lead to an increase in adolescents' awareness of and attentiveness to the opinions of their peers (Nelson, Leibenluft, McClure, & Pine, 2005; Steinberg, in press).

To date, most studies of susceptibility to peer pressure have asked adolescents to respond to hypothetical dilemmas in which they are presented with two courses of action: one that conforms with peer pressure to engage in a particular behavior (e.g., sneaking into a movie theater) and one that stands up to peer influence and refuses to conform. Respondents are then asked how they would behave and to indicate their degree of confidence in their answer. In general, most studies using this approach show that conformity to peers is higher during early and middle adolescence than during preadolescence or later (Berndt, 1979; Brown, 1990; Krosnick & Judd, 1982; Steinberg & Silverberg, 1986), although the specific age pattern varies somewhat depending on the domain of behavior studied (Sim & Koh, 2003). In particular, the heightened susceptibility to peer pressure of individuals in midadolescence is most consistently seen when the behavior in question is antisocial, such as cheating, stealing, or trespassing, and it is especially true among boys (Erickson, Crosnoe, & Dornbusch, 2000). These findings are in line with studies of delinquent acts, which are often committed by boys in groups and are more common during middle adolescence (Berndt, 1979).

Although initial work in this tradition on age differences in susceptibility to peer influence examined peer pressure to engage in prosocial and neutral, as well as antisocial, activity (e.g., Berndt, 1979), researchers' focus over the years has increasingly turned to adolescents' responses to pressures to misbehave, undoubtedly because of the negative connotation that "peer pressure" has. Yet, as several authors have pointed out (e.g., Brown, 2004; Mounts & Steinberg, 1995), adolescents' peer groups vary in their norms and values, and some young people find themselves under pressure to behave in socially desirable ways (e.g., pressure to do well in school, avoid drugs, or remain virgins). Indeed, although adolescents' susceptibility to peer pressure is most often seen when the behavior in question is antisocial, the true magnitude of adolescents' susceptibility to peer influence may be best revealed when the behavior is neutral, rather than antisocial or prosocial (Brown, 2004). Thus, the widely accepted idea that susceptibility to peer pressure follows a curvilinear trend may actually be limited to antisocial peer pressure and may not be more generally characteristic of adolescent psychosocial development. In fact, a close inspection of Berndt's (1979) findings indicates that the curvilinear developmental pattern was consistently seen only in the domain of antisocial activity; in one of the two studies reported, in fact, there were no age differences in conformity to prosocial peer pressure. The use of peer susceptibility instruments that are limited to antisocial scenarios therefore may not provide an accurate description of developmental change in susceptibility to peer influence more generally.

A second problem concerns the use of hypothetical dilemmas about specific situations to assess peer susceptibility. Some adolescents have cheated on tests, whereas others have not; some, but not all, adolescents have shoplifted, and so on. To the extent that a hypothetical scenario describes a situation that a respondent has actually been in, his or her answers may reflect what he or she had done the last time the situation arose. In contrast, if the hypothetical scenario presents a novel situation, the respondent is left to

surmise what he or she would likely do. This presents a three-fold interpretative problem. First, patterns of age differences in responses to the dilemmas may reflect age differences in the frequency of the behavior rather than age differences in susceptibility to social influence. Although some studies of susceptibility to antisocial peer pressure have controlled for individual differences in attitudes about antisocial behavior (e.g., Bixenstine, DeCorte, & Bixenstine, 1976; Sim & Koh, 2003), many have not. It is one thing to argue that actual shoplifting follows a curvilinear age pattern (which, like most criminal activity, it does); it is entirely different to argue that susceptibility to pressure to shoplift does. Second, it is likely that presenting individuals with questions about their likely behavior in antisocial situations is contaminated by a strong social desirability bias; age differences in their responses may reflect differences in individuals' beliefs about the wrongfulness of the particular behaviors queried. Given other research on age differences in social conventional reasoning (e.g., Smetana, 2006), it is not hard to imagine early and middle adolescents as more likely to flaunt their willingness to challenge authority or commit minor acts of delinquency. Finally, to the extent that responses to the dilemmas reflect either past behavior or social desirability, correlations between conventional measures of susceptibility to peer influence and other variables—whether predictors of susceptibility (e.g., parenting practices) or consequences of it (e.g., deviant behavior)—are exceedingly difficult to interpret. Do children from authoritative homes score lower on measures of susceptibility to peer pressure (a) because they are less involved in antisocial behavior (which, according to other studies [e.g., Fuligni & Eccles, 1993], they are), (b) because they are more likely to give socially desirable responses (a reasonable possibility, given their higher scores on measures of prosocial behavior), or (c) because they are genuinely more psychosocially mature? If it is the last of these possibilities that is of interest, a different sort of measure must be used.

The focus of the present report is on age differences in susceptibility to peer influence during preadolescence, adolescence, and young adulthood. The article has three aims. First, we describe a new self-report measure (Resistance to Peer Influence or RPI) designed to overcome the aforementioned problems. Rather than limit our questions to those concerning antisocial behavior, we constructed items that tap into susceptibility to peer influence more generally, and rather than use a format that may pull for a socially desirable answer, we employ the format used in the Self Perception Profile (Harter, 1985), in which two comparably desirable answers are contrasted and the respondent must choose between them (e.g., "Some people think it's more important to be an individual than to fit in with the crowd but other people think it is more important to fit in with the crowd than to stand out as an individual").

Second, we describe age differences in resistance to peer influence using data from four very different samples (two samples of individuals who have been arrested and two community samples) drawn from two cross-sectional studies and one longitudinal study. To the extent that similar patterns of age differences emerge in all four samples, we can be more confident in the results. Moreover, because we have assessed individuals whom we know genuinely vary in their actual delinquent and criminal behavior, we can examine whether scores on the measure of susceptibility to peer influence are confounded with involvement in antisocial activity.

Finally, because the samples studied are diverse with respect to age (when the samples are combined, individuals range from age 10 to 30), gender, social class, and ethnicity, we are able to describe whether patterns of age differences vary across different demographic groups and examine whether resistance to peer influence varies as a function of gender, social class, and ethnicity. Prior research has indicated that girls, on average, are more resistant to peer pressure than boys, in both neutral and antisocial situations (Berndt, 1979; Steinberg & Silverberg, 1986), in contrast to unremitting (but incorrect) stereotypes of adolescent girls as less autonomous than boys. Given the fact that the social acceptability of autonomous behavior among females has become even greater since these earlier studies were conducted, we hypothesize that a similar sex difference, favoring girls, will be found here. Far less research has examined socioeconomic or ethnic differences in resistance to peer influence, although there is some evidence that American adolescents may be particularly susceptible to peer pressure (Devereux, 1970). Susceptibility to antisocial peer pressure is higher among relatively more acculturated Latino adolescents than their less acculturated peers, and higher among Latino adolescents who were born in the United States than those who were born abroad, consistent with the notion that American adolescents are especially peer-oriented and with research showing higher rates of delinquency among more acculturated adolescents (Umaña-Taylor & Bámaca-Gómez, 2003; Wall, Power, & Arbona, 1993). In general, though, ethnic and socioeconomic differences in adolescents' susceptibility to peer influence have received scant attention.

Method

Sources of Data

Data from three studies (one providing two distinct samples) were used in the present analysis: The MacArthur Juvenile Competence Study (Grisso et al., 2003), the MacArthur Juvenile Capacity Study (Steinberg, 2006), and Research on Pathways to Desistance (RPD; Mulvey, 2004). Each study was a multisite study whose methods and procedures were approved by the participating university's institutional review board at each data collection site. All participants were paid for their participation. All data were collected via one-on-one interviews lasting approximately 2 hours and administered on laptop computers by trained interviewers. Interviewers read items aloud to participants who had reading difficulties.

MacArthur Juvenile Competence Study. The MacArthur Juvenile Competence Study was designed primarily to examine age differences in capacities relevant to competence to stand trial and other legal decision making. (Whether one's decision making is easily swayed by others is one such capacity.) The study employed four data collection sites: Los Angeles ($n = 404$; 29% of total sample), Philadelphia ($n = 390$; 28%), northern Florida ($n = 223$; 16%) and northern, central, and western Virginia ($n = 376$; 27%) at 11 juvenile detention centers, 8 adult jails, and their surrounding communities. Participants included 1,393 individuals ranging in age from 11 to 24 ($M = 16.89$), approximately evenly divided between detained individuals ($N = 686$), who were recruited from juvenile detention facilities or adult jails, and individuals from the community ($N = 707$), who resided in the same or similar, typi-

cally lower income, communities as the detained participants but who had never been held overnight in a justice system facility and were not currently charged with any offenses. Detained individuals were recruited through the facilities at which they resided; detainees in each facility were periodically informed of the study by facility staff persons and asked if they were interested in speaking with a research staff member about the project. Community participants were recruited via posters, leaflets, and/or direct contact by research assistants from schools, youth programs, Girls' and Boys' clubs, community clubs, agencies and shelters, and community colleges. Individuals who were interested in the study were asked to call the research site. It was not possible to determine participation rates for either the detained or community samples because of the way in which subjects were recruited in each group. For purposes of the present report, we analyze data from the Detained and Lower Income samples separately. Demographic characteristics of the two samples are presented in Table 1.

The MacArthur Juvenile Capacity Study. The MacArthur Juvenile Capacity Study was designed to examine age differences in capacities relevant to judgments of criminal blameworthiness. (One such capacity is susceptibility to the influence of others, which mitigates blameworthiness.) The study employed five data collection sites: Los Angeles; Irvine, CA; Denver; Philadelphia; and Washington, DC. The data for the present study come from 929 individuals ranging in age from 10 to 30 ($M = 17.84$). Participants were recruited via newspaper advertisements and flyers posted at community organizations, Boys' and Girls' clubs, churches, community colleges, and local places of business in neighborhoods targeted to have an average household education level of "some college" according to 2000 U.S. Census data. Individuals who were interested in the study were asked to call the research site. Given this recruitment strategy, it was not possible to know how many participants saw the advertisements, what proportion responded, and whether those who responded are different from those who did not. We do know that the education level of the sample is comparable to that of the neighborhoods from which it was drawn. Demographic characteristics of the sample, referred to as the Community sample, are presented in Table 1.

Research on Pathways to Desistance (RPD). RPD is a longitudinal study of 1,354 serious juvenile offenders in Philadelphia and Phoenix, AZ. Adjudicated adolescents who were between the ages of 14 and 17 at the time of their committing offense were recruited from courts ($M = 16.04$ at the time of their initial interview). Each day, the juvenile court in each locale provided our research office with the names of individuals eligible for enrollment in the study based on their age and adjudicated charge. Cases were assigned to interviewers, who would then attempt to contact the juvenile and his or her family to ascertain the juvenile's interest in participating in the study and to obtain parental consent. Once the appropriate consents had been obtained, the interviewer would make an appointment to interview the juvenile, either in a facility, if the juvenile was confined, or at the juvenile's home or a mutually agreed-upon location in the community, if the juvenile was on probation. We attempted to enroll slightly more than half the youth determined to be adjudicated on an eligible charge (a felony or a misdemeanor weapons charge) during the enrollment period ($n = 2,008$); we were unable to make contact with 316 of these individuals. Those not attempted ($n = 1,799$) were excluded because of operational and design constraints (e.g., when the flow

Table 1
Demographic Information by Sample

Demographic	Detained (N = 686)		Lower income (N = 707)		Community (N = 929)		Serious offender (N = 1,354)		Total (N = 3,676)	
	N	% of sample	N	% of sample	N	% of sample	N	% of sample	N	% of sample
Age (years)										
10-11	6	1%	30	4%	116	12%			152	4%
12	20	3%	29	4%	71	8%			120	3%
13	48	7%	57	8%	66	7%			171	5%
14	78	11%	54	8%	66	7%	162	12%	360	10%
15	108	16%	105	15%	62	7%	255	19%	530	14%
16	86	12%	97	14%	69	8%	412	30%	664	18%
17	107	16%	102	14%	72	5%	414	30%	695	19%
18	33	5%	50	7%	46	5%	111	8%	241	7%
19	37	5%	30	4%	43	4%			110	3%
20	38	6%	36	5%	40	4%			114	3%
21-22	63	9%	72	10%	61	6%			196	5%
23+	62	9%	45	6%	217	23%			324	9%
Sex										
Male	455	66%	402	57%	457	49%	1169	86%	2484	68%
Female	231	34%	305	43%	471	51%	176	14%	1183	32%
Missing					1	<1%	9	1%	10	<1%
Ethnicity										
White	222	32%	262	37%	222	24%	274	20%	980	27%
Black	274	40%	280	40%	273	29%	561	41%	1389	38%
Asian	7	1%	4	1%	141	15%	2	<1%	154	4%
Hispanic	175	26%	151	21%	198	21%	454	34%	978	26%
Other	6	1%	9	1%	92	10%	63	5%	170	5%
Missing	2	<1%	1	<1%	3	<1%			6	<1%
Socioeconomic status										
Lowest	281	41%	256	36%	127	14%	442	12%	1106	30%
Low	233	34%	196	28%	208	22%	518	14%	1155	31%
Average	110	16%	158	22%	311	26%	274	8%	853	23%
High	43	6%	72	10%	195	21%	74	2%	384	10%
Highest	11	2%	18	2%	88	10%	21	2%	138	4%
Missing	8	1%	7	1%			25	2%	41	1%

of cases at that time would have overloaded the available interviewers). Of the youth whom we were able to locate and contact, only 20% of those approached refused to participate or had parents withhold consent. Demographic characteristics of the sample, referred to as the Serious Offender sample, are presented in Table 1.

Measures

Each study employed a different test battery that was developed to suit the particular aims of the research project. All batteries included a series of questions designed to gather demographic information, the Wechsler Abbreviated Scale of Intelligence (WASI), and the Resistance to Peer Influence (RPI) measure.

Demographic characteristics. Participants' age, sex, and ethnicity were all obtained through self-report. For purposes of analysis, and to ensure adequate cell sizes for the younger and older ends of the age continuum, the 10- and 11-year-olds were combined into one category, as were the 21- and 22-year-olds. All individuals age 23 and older (the oldest were 30) were combined into one category due to small numbers of individuals at each discrete chronological age in this range. Ethnicity was treated in all analyses as a five-level variable (African-American, Hispanic, Asian, White, Other).

Participants' socioeconomic status (SES) was determined in different ways in different studies and for participants of different ages. In the RPD study of serious offenders, information on the education level of the respondent's parent(s) was used. In the MacArthur Juvenile Capacity Study, information on the educational attainment of the respondent (if 18 or older) or the respondent's parent(s) (if younger than 18) was used. In the MacArthur Competence study, all participants provided information on either their own education and occupation (if 18 or older) or that of their parents (if younger than 18), and this information was used to assign individuals to one of five classes according to the Hollingshead system (Hollingshead, 1975). Using data on participant or parent education in the Serious Offender (RPD), Lower Income (Competence Study), Detained (Competence Study), and Community (Capacity Study) samples, we then divided participants into five categories of household educational attainment: below high school education, high school education, some college, college degree, and advanced degree. These five categories were then mapped onto the five Hollingshead categories, with individuals reporting less than high school degrees being assigned to the lowest Hollingshead group and individuals reporting advanced degrees assigned to the highest Hollingshead group. Although

Table 2
Mean Resistance to Peer Influence Score by Sample

Age (years)	Detained		Lower income		Community		Serious offender		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
10–11	2.95	.27	2.79	.54	3.01	.44			2.84	.52
12	2.92	.27	2.88	.52	3.14	.54			2.95	.53
13	2.92	.49	2.89	.64	3.09	.48			2.97	.58
14	2.82	.56	2.88	.48	3.04	.49	2.92	.55	2.91	.53
15	3.03	.57	3.04	.65	3.10	.49	2.89	.61	2.98	.59
16	3.09	.59	3.12	.57	3.16	.46	2.96	.56	3.02	.56
17	3.13	.62	3.10	.62	3.26	.42	3.04	.57	3.09	.57
18	3.21	.55	3.22	.53	3.33	.42	3.19	.57	3.23	.53
19	3.31	.48	3.13	.58	3.38	.39			3.26	.50
20	3.28	.61	3.26	.56	3.43	.41			3.32	.53
21–22	3.25	.62	3.23	.50	3.21	.45			3.23	.52
23+	3.22	.56	3.32	.53	3.46	.43			3.32	.52

educational attainment on its own is an imperfect indicator of SES, research has indicated that household education may be the most stable component of a family's social class (Steinberg, Mounts, Lamborn, & Dornbusch, 1991).¹

Intelligence. The Wechsler Abbreviated Scale of Intelligence (WASI) (Psychological Corporation, 1999) produces an estimate of general intellectual ability based on two subtests (Vocabulary and Matrix Reasoning). The WASI can be administered in approximately 15 min and is correlated with the Wechsler Intelligence Scale for Children ($r = .81$) and the Wechsler Adult Intelligence Scale ($r = .87$). It has been normed for individuals ages 6 to 89 years. Because IQ scores vary considerably between individuals with and without justice system involvement, it was entered as a covariate in all analyses that combined participants from the four samples.

Resistance to Peer Influence (RPI). Resistance to peer influence was measured using a new measure that assesses this construct in general terms, rather than with specific reference to antisocial peer influence.² The measure presents respondents with a series of 10 pairs of statements and asks them to choose the statement that is the best descriptor (sample item: "Some people go along with their friends just to keep their friends happy" BUT "Other people refuse to go along with what their friends want to do, even though they know it will make their friends unhappy"). After indicating the best descriptor, the respondent is then asked whether the description is "Really True" or "Sort of True." Responses are then coded on a 4-point scale, ranging from "really true" for one descriptor to "really true" for the other descriptor, and averaged. Higher scores indicate greater resistance to peer influence. Items were generated by a group of developmental psychologists with expertise in adolescent psychosocial development and pilot tested with small samples of high school students and college undergraduates. Slight revisions in wording were made on the basis of these pilot studies. The full instrument, along with scoring instructions, is reprinted in the Appendix. Table 2 presents mean RPI scores by sample.

Because the measurement battery employed in the RPD study included the lie scale of the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1985), we were able to examine whether high scores on the RPI, reflecting greater resistance to peer influence, merely reflected a propensity to respond in

a socially desirable fashion (sample items from the lie scale: "I am always nice to everyone," "I never say things I shouldn't"). This does not appear to be the case, however. The correlation between RPI scores and scores on the RCMAS lie scale, although statistically significant, is close to zero, $r(1344) = -.08$, $p < .01$; moreover, the negative correlation indicates that individuals who report greater resistance to peer influence are less likely to present themselves in a socially desirable way.

Examination of the scale's internal consistency was conducted within each of the four samples separately, using both Cronbach's alpha as well as confirmatory factor analysis. These analyses indicate that the measure demonstrates adequate and comparable reliability within each sample (Cronbach's alpha was .70, .76, .74, and .73, for the Lower Income, Detained, Community, and Serious Offender samples, respectively; the confirmatory factor analysis statistics within each sample were .99, .99, .99, .92 (normed fit index), .98, .99, .99, .92 (non-normed fit index), .99, .99, .99, .94 (comparative fit index), and .07, .06, .09, .04 (root mean square error of approximation) for the Lower Income, Detained, Community, and Serious Offender samples, respectively.)

¹ We also recognize that using respondents' current level of educational attainment to index SES among college-enrolled individuals age 18 and older, as was done in the Juvenile Capacity Study, may misrepresent the actual SES of these individuals' background, because college students who are adults are coded as having attained "some college" when in fact their parents may have attained more or less than this. However, our sample, unlike many samples in studies of young adults, includes both students and nonstudents. There is no consensus, when studying young adults, on how best to characterize their socioeconomic circumstances. Reasonable people may disagree about whether the proper index of these individuals' SES should be based on their own circumstances or on those within which they were raised.

² Whether the measure should be called Resistance to Peer Influence or Resistance to Friend Influence is a legitimate question, because individuals' responses to the influence of their friends may differ from their responses to peers (who may or may not be friends). Some of the items in the RPI measure specify "friends," but others do not. Given the long history among adolescence researchers (and parents) of interest in peer pressure, we opted to call the measure Resistance to Peer Influence. The label should not be taken as one that excludes or deemphasizes friends as members of the broader peer group.

Although the RPI measure is new, several analyses of data from the samples used for the present study attest to its validity as an indicator of the degree to which individuals are able to resist pressure from others. In analyses of data from the MacArthur Juvenile Capacity Study, for example, after controlling for age, RPI scores are significantly but very modestly negatively correlated with widely used measures of impulsivity (the Barratt Impulsiveness Scale; Patton, Stanford, & Barratt, 1995; $r(905) = -.22, p < .001$) and antisocial risk taking (the Benthin Risk Perception Measure; Benthin, Slovic, & Severson, 1993; $r(905) = -.12, p < .001$). These results are consistent with the expectation that individuals who are more easily swayed by their friends would also be more impulsive and more prone to engage in minor antisocial risky behaviors, such as vandalizing or shoplifting, but their modest magnitude suggests that the RPI scale measures something distinct from either impulse control or avoidance of antisocial activity. In analyses of data from the RPD study of serious offenders, RPI scores are significantly positively correlated with a measure of impulse control (from the Weinberger Adjustment Inventory; Weinberger & Schwartz, 1990; $r = .18, p < .001$), at about the same magnitude as with scores on the Barratt impulsivity measure, as noted above, and significantly negatively correlated with responses to the item, "I worry what others think of me," (from the RCMAS; $r(1344) = -.14, p < .001$). Analysis of RPD data also showed that individuals with lower resistance to peer influence were not only significantly less likely to engage in antisocial behavior but were less influenced by having antisocial or older peers (two peer group characteristics that place adolescents at heightened risk for antisocial behavior). In particular, among those with either deviant peers (i.e., with arrest histories) or older peers, adolescents with lower RPI scores reported a significantly greater increase in their own antisocial behavior over time than did adolescents with comparably deviant or older friends but higher RPI scores (for the interaction between RPI scores and deviant peers in the prediction of changes in antisocial behavior, $\beta = -.264, t(1205) = 1.805, p = .07$; for the interaction between RPI scores and older peers in the prediction of changes in antisocial behavior, $\beta = .285, t(1178) = 3.505, p < .001$; Monahan, Steinberg, & Cauffman, 2007). Indeed, among adolescents who reported that at least half their closest friends had an arrest record, those above the sample median in RPI evinced a 20% greater increase in aggressive offending over the first 6 months of the study than did adolescents below the sample median in RPI with comparably antisocial friends. Similarly, among adolescents whose closest friends averaged between 21 and 30 years of age, those below the sample median in RPI showed a 33% greater increase in aggressive antisocial behavior over the 6-month period than did those above the median. Finally, among the community sample of adolescents in the MacArthur Juvenile Competence Study, scores on the RPI tended to be negatively correlated, $r(473) = -.08, p < .10$, with individuals changing their mind about important legal decisions (i.e., whether to confess to the police, whether to provide full information to one's attorney, whether to accept a plea bargain) when told that their peers' advice contradicted their own inclinations.

Further support for the validity of the RPI comes from two recent analyses of the neural correlates of resistance to peer influence. In an fMRI study of 43 10-year-olds who were exposed to emotionally arousing video clips containing social information

(clips of angry hand movements or angry facial expressions), individuals with relatively lower scores on the RPI showed significantly greater activation of regions implicated in the perception of others' actions (i.e., right dorsal premotor cortex), whereas those with relatively higher RPI scores showed greater functional connectivity between these action-processing regions and regions implicated in decision making (i.e., dorsolateral prefrontal cortex); such differences were not observed when individuals were presented with emotionally neutral clips (Grosbras et al., 2007). These results suggest that individuals who are especially susceptible to peer influence, as indexed by the RPI, may be unusually aroused by signs of anger in others but less able or likely to exert inhibitory control over their responses to such stimuli. In a second study, of differences in brain morphology between individuals (ages 12 to 18) scoring high versus low on the RPI measure, the researchers found morphological evidence that, after controlling for age, adolescents with high RPI scores showed evidence of greater structural connectivity between premotor and prefrontal regions, a pattern consistent with their more frequent concurrent engagement of these networks (Paus et al., in press).

Results

Cross-Sectional Analyses

Using the general linear model, two univariate analyses of variance were conducted. The first was a model in which the independent effects on resistance to peer influence (RPI) of age, gender, ethnicity, SES, and sample were examined, and in which IQ was entered as a covariate. Results indicated that resistance to peer influence varies as a function of age, $F(11, 3577) = 18.53, p < .001$; gender, $F(1, 3177) = 36.42, p < .001$; ethnicity, $F(4, 3577) = 26.563, p < .001$; and sample membership, $F(3, 3177) = 7.242, p < .001$, but not SES. Specifically, older individuals, females, African-Americans, and members of the Community sample scored relatively higher on the RPI measure, whereas younger individuals, males, Asian individuals, and Serious Offenders scored lower. Not surprisingly, RPI scores were positively related to IQ, $F(1, 3577) = 81.21, p < .001$. Age differences in resistance to peer influence are depicted in Figure 1.

Given our primary interest in the relation between resistance to peer influence and age, we conducted a series of Bonferroni pairwise comparisons to test for specific age differences in resis-

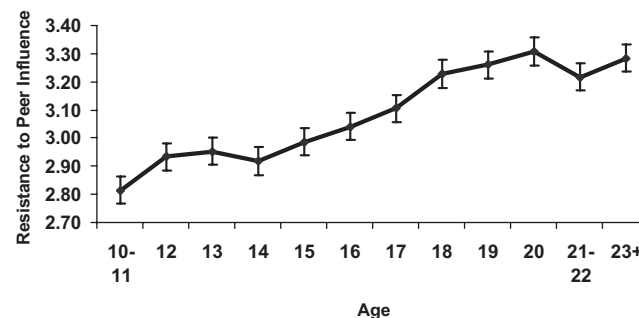


Figure 1. Age differences in resistance to peer influence. Higher scores on the Resistance to Peer Influence measure indicate greater resistance to peer influence.

tance to peer influence, using scores that had been adjusted for the other predictors (gender, ethnicity, SES, sample) and for IQ. These results indicate that, although no adjacent age categories' mean scores are significantly different from each other, there are no age differences in resistance to peer influence between 10 and 14 (none of the pairwise comparisons within this age range, whether involving adjacent ages or not, is significant at $p < .05$), nor are there age differences in resistance to peer influence between 18 and 30 (none of the pairwise comparisons within this age range, whether involving adjacent ages or not, is significant at $p < .05$).

The second model simultaneously examined both main effects and interactions using IQ as a covariate. In order to examine whether the pattern of age differences found in the first series of analyses varied as a function of other demographic factors, we examined two-way interactions between age and sample, gender, ethnicity, and SES, respectively. The pattern of age differences in RPI scores did not vary as a function of gender or study sample. Two interactions were significant, however: Age \times Ethnicity, $F(43, 3430) = 1.46, p < .05$, and Age \times SES, $F(42, 3430) = 1.45, p < .05$. Follow-up analyses indicated that the relation between age and RPI was slightly stronger among ethnic minority individuals than among Whites (after controlling for SES, IQ, and gender, the correlation between age and RPI was .22, .22, .27, and .15 among African-American, Asian-American, Hispanic, and White participants, respectively) and slightly weaker among affluent individuals (after controlling for ethnic minority status, IQ, and gender, $r = .11$ in the highest class) than among others ($r = .19, .22, .22$, and .23 for the lowest four classes in ascending order of SES). In no ethnic or SES group, however, is there evidence for substantial age differences in resistance to peer influence either before 14 or after 18. The same is true with respect to age differences in each of the four samples studied, as illustrated in Figure 2.

Longitudinal Analysis

The RPD sample of serious offenders has been followed longitudinally and completed the measure of resistance to peer influence every 6 months for 3 years (for a total of seven assessments). Study participants ranged from age 14 to 18 at the initial assessment (one subject had just turned 19 at the time of the initial interview but is included in the analysis with the 18-year-olds). To examine changes in RPI over time, unconditional growth models were constructed to examine average growth in the population as well as the between-person variability in growth that can be attributed to gender, ethnicity, and SES. Individuals were divided into age groups (e.g., 14, 14.5, 15) based on their age at the time of enrollment into the study and centered by the minimum age at the baseline interview (14). Growth in RPI was examined over the course of 3 years (making the total age range 14 to 21.5). Results of the linear unconditional model can be seen in Table 3. The intercept of 2.78 indicates the mean level of RPI for the sample at age 14, whereas the significant positive slope indicates that RPI increased by .09 every 6 months. Examination of the random effects found significant heterogeneity in the intercept and slope coefficients, suggesting that there is individual variability in both the level of RPI and how RPI changes over time.

Next, we entered a quadratic age term to the unconditional model to examine if there was acceleration or deceleration in the growth of RPI over time (see Table 3). In tests of fixed effects, the quadratic growth term indicated that the rate of growth in RPI decelerated, on average, by .005 every 6 months. The quadratic term was not a significant random effect, suggesting that all individuals decelerated in RPI growth at the same rate. Consequently, the quadratic growth term was not allowed to vary in all subsequent models.

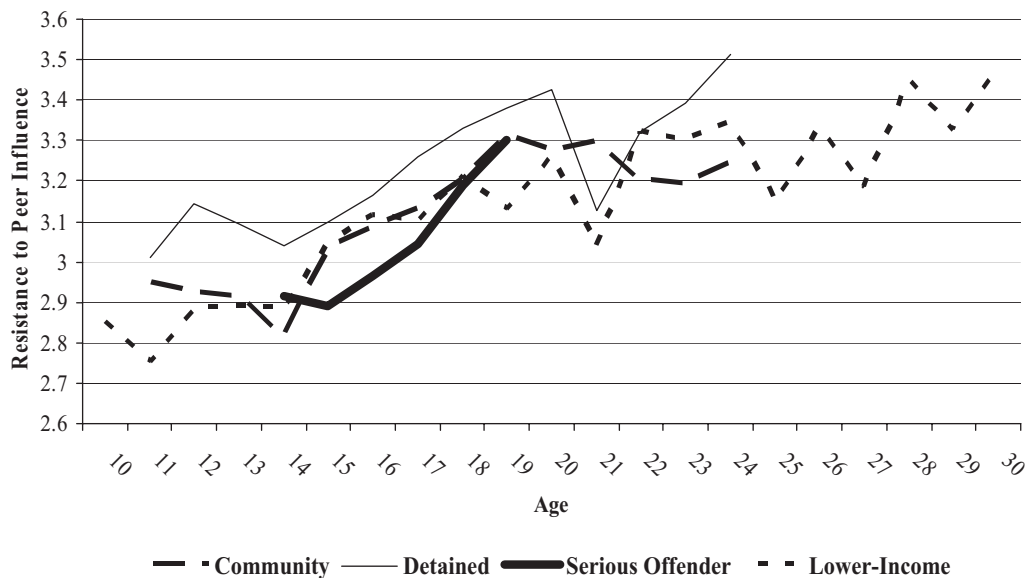


Figure 2. Age differences in resistance to peer influence in four samples: Serious juvenile offenders and detained, lower income, and community adolescents and young adults. Higher scores on the Resistance to Peer Influence measure indicate greater resistance to peer influence.

Table 3
Unconditional Linear and Quadratic Models of Growth

Effect	Linear		Linear and quadratic	
	Coefficient	SE	Coefficient	SE
Fixed effects				
Intercept	2.78***	.02	2.73***	.036
Linear slope	.09***	.005	.13***	.018
Quadratic slope			-.005*	.002
Random effects				
Intercept	.274***	.025	.192***	.03
Linear slope	.01***	.001	.016	.01
Quadratic slope			-.00	.00
Level-1 error	.158***	.003	.155***	.003
Model fit				
-2 log likelihood	11,810.7		11,757.8	
AIC	11,822.7		11,777.8	
BIC	11,853.9		11,839.9	

Note. AIC = Akaike information criterion. BIC = Bayesian information criterion.
* $p < .05$. *** $p < .001$.

Figure 3 shows mean growth of RPI (accounting for significant linear and quadratic trends). As the figure indicates, and consistent with the cross-sectional data presented earlier and the significant quadratic term in the longitudinal analysis, growth slows somewhat as individuals age past 19, and there appears to be little growth in resistance to peer influence after the age of 20. Because the RPD sample did not include individuals younger than 14, we are unable to examine whether the previously observed pattern indicating few age differences in resistance to peer influence prior to 14 is borne out in the longitudinal analysis.

Gender, ethnicity, and SES were then examined as covariates in the growth model. Models tested each covariate separately (see Table 4). Results found significant effects of gender, with females reporting higher RPI than males. Gender did not affect changes in resistance to peer influence over time, however. A similar pattern was found for ethnicity: Ethnicity predicted different mean levels

of RPI, but there were no ethnic differences in how RPI scores changed over time. Contrasts indicated that African-American adolescents had higher average RPI scores than adolescents of other ethnicities and that White adolescents had higher average RPI scores than Hispanic individuals (recall that there were insufficient numbers of Asian-American individuals in the RPD sample to examine this ethnic group). In contrast to gender and ethnicity, SES affects both an individual's level of resistance to peer influence and the rate of change in RPI scores over time. Individuals with higher SES evinced lower RPI scores at age 14 but showed a relatively faster rate of growth; lower SES individuals had higher RPI scores at age 14 but their rate of growth in resistance to peer influence is relatively slower. The net result is that over time the SES groups' scores converge.

Finally, a full model simultaneously estimated the impact of linear and quadratic trends along with the significant effects of the covariates (see Table 5). Fit statistics indicated that the full model provided the best fit of the data. In the full model, at age 14 the mean RPI score in the sample was 2.68. Individuals grew in resistance to peer influence linearly (.08 every 6 months, or about one-fourth a standard deviation per year), but the rate of growth slowed over time (by .005 every 6 months). As in previous models, gender, ethnicity, and SES all affected individuals' degree of resistance to peer influence, and SES also predicted change in RPI scores over time, with individuals from higher SES backgrounds increasing in resistance to peer influence at a faster rate than individuals from lower SES backgrounds.

Discussion

Using a new measure of resistance to peer influence that minimizes socially desirable responding and disentangles assessments of youngsters' involvement in antisocial activity with assessments of their susceptibility to peer pressure, we find that resistance to peer influence increases linearly over the course of adolescence, especially between ages 14 and 18. In contrast, there is little evidence for growth in this capacity between 10 and 14 or between 18 and 30. This pattern is identical among males and females and

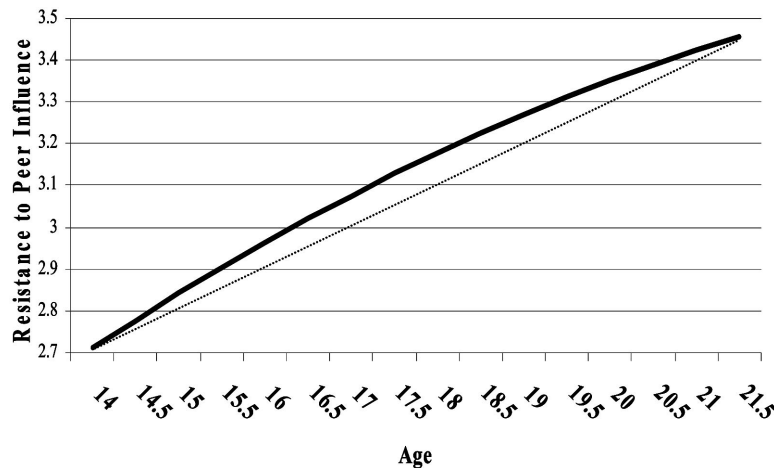


Figure 3. Change over time in resistance to peer influence. Higher scores on the Resistance to Peer Influence measure indicate greater resistance to peer influence. The light, dashed line is included to help clarify the curvilinear trend.

Table 4
Effects of Gender, Ethnicity, and SES as Independent Covariates in Resistance to Peer Influence Growth Models

Effects	Model 1: Gender		Model 2: Ethnicity		Model 3: SES	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Fixed effects						
Intercept	2.68***	.038	2.75***	.11	3.07***	.092
Gender	.20**	.063				
Ethnicity ^a			<i>F</i> = 13.84***			
SES					-.08***	.020
Linear slope	.137***	.017	.11***	.03	.08***	.030
Linear slope × covariate	-.005	.01	<i>F</i> = 1.22		.01*	.004
Quadratic slope	-.005*	.002	-.005*	.002	-.005*	.002
Random effects						
Intercept	.27***	.025	.256***	.025	.267***	.025
Linear slope	.01***	.001	.01***	.001	.01***	.001
Level-1 error	.158***	.025	.158***	.003	.158***	.003
Model fit						
-2 log likelihood	11,773.9		11,701.1		11,767.8	
AIC	11,791.9		11,727.1		11,785.8	
BIC	11,838.8		11,794.8		11,832.7	

Note. SES = socioeconomic status. AIC = Akaike information criterion. BIC = Bayesian information criterion.

^a *df* = (3, 3060).

* *p* < .05. ** *p* < .01. *** *p* < .001.

varies only very slightly with ethnicity or socioeconomic status. Moreover, we find the same basic age pattern across four samples that vary considerably in their demographics and life circumstances using both cross-sectional and, in one sample, longitudinal analysis.

That resistance to peer influence is more likely to grow between 14 and 18 than before or after is consistent with the literature on adolescent psychosocial development in several respects. It has been suggested that the increased orientation to peers in early

adolescence may be a correlate of adolescents' developing emotional autonomy from parents and that, during this time period, adolescents' dependence on parents is not replaced by independence but by dependence on peers (Steinberg, 1990). To the extent that the period between 10 and 14 is the time during which adolescents express strivings for emotional autonomy most strongly, one therefore would not expect to see a concurrent increase in resistance to peer influence; that, presumably, would not occur until much of the individuation process had been completed. On the other hand, once adolescents have turned their psychosocial attention toward matters of identity development, a shift that typically takes place late in adolescence (Collins & Steinberg, 2006), they may have developed the emotional where-withal for, as well as the need to, stand up to the influence of their friends. In essence, we speculate that the growth of resistance to peer influence is a developmental phenomenon bounded by individuation from parents at its onset and by the development of a sense of identity at its conclusion.

The present study has a number of strengths and limitations that deserve mention. On the positive side, the study included a large and highly diverse sample of individuals drawn from different regions, ethnic groups, and socioeconomic backgrounds. The fact that the pattern of age differences reported is generally consistent across these different groups provides greater confidence in the reliability of the findings. On the other hand, the reliance on a single measure of resistance to peer influence provided by individuals' self-report is cause for caution. Although we have some evidence attesting to the validity of the measure, without further study of the relation between individuals' self-reports and their behavior in the face of peer pressure, it is possible only to say that individuals' characterizations of their ability to resist peer influence change with age. Although there has been some research examining age differences in peer influence susceptibility using indicators other than self-report (e.g., Gardner & Steinberg, 2005;

Table 5
Full Model of Resistance to Peer Influence Growth Including Linear Terms, Quadratic Term, and Covariates

Effects	Full model	
	Coefficients	SE
Fixed effects		
Intercept	2.69***	.111
Gender	.183***	.032
Ethnicity ^a	<i>F</i> = 32.99***	
SES	-.058*	.019
Linear slope	.08***	.025
Quadratic slope	-.005*	.002
Random effects		
Intercept	.248***	.024
Linear slope	.01***	.001
Level-1 error	.158***	.003
Model fit		
-2 log likelihood	11,643.3	
AIC	11,669.3	
BIC	11,737.0	

Note. SES = socioeconomic status. AIC = Akaike information criterion. BIC = Bayesian information criterion.

^a *df* = (3, 6067).

* *p* < .05. *** *p* < .001.

Hensley, 1977), much more work of this sort is needed. In addition, the samples, although diverse, were not all selected to be representative of the broader adolescent population (the sample is urban and suburban), and the ways in which participants were recruited made it impossible to examine selective participation effects.

Although not a focus of the present investigation, we also find that resistance to peer influence varies as a function of gender, ethnicity, and social class. As has been reported previously (e.g., Berndt, 1979), our findings suggest that girls and women are more likely than boys and men to stand up for what they believe than to alter their behavior to conform to the expectations of their peers—or, at least, they characterize themselves this way. Previous research using measures of susceptibility to influence that emphasize antisocial peer pressure also reported that females are less susceptible to peer influence (e.g., Steinberg & Silverberg, 1986), but this finding was usually attributed to the fact that the specific type of peer pressure studied was antisocial or that the age period studied was early and middle adolescence, a time when girls are thought to demonstrate more maturity. Our findings suggest that neither of these accounts is correct: Females are more resistant to peer influence than males in general, and they are so after as well as during adolescence. Consistent with this, other studies have found that adolescent girls report greater feelings of self-reliance than adolescent boys (Greenberger, 1982; Steinberg & Silverberg, 1986). Although girls may be more concerned than boys about their relations with others, which has been hypothesized to account in part for their greater vulnerability to depression (e.g., Cyranski & Frank, 2000), this concern apparently does not translate into greater behavioral conformity. Given the fact that nearly three decades of research have now shown that adolescent girls are as, if not more, autonomous than adolescent boys, perhaps it is time the field abandoned the stereotype of the soft-spined female popularized in depictions of young women written in the 1960s (e.g., Douvan & Adelson, 1966) and maintained by empirically unsupported lamentations about the loss of “voice” experienced by girls during adolescence (e.g., Brown & Gilligan, 1992; but see Harter, 1998, for an excellent critique of this assertion).

To our knowledge, ethnic differences in resistance to peer influence have not been studied previously, especially in samples large enough to control for confounding factors like socioeconomic status. Our analyses indicate that African-American individuals report greater resistance to peer influence than do individuals from other ethnic groups, whereas Asian-American individuals report less; White and Hispanic individuals fall between these two extremes. To the extent that low scores on the RPI measure reflect an individual's unwillingness to assert his or her personal preference in the face of a peer group's implicit or explicit demand, the relatively lower score of Asian-American individuals is not surprising, given the tradition in most Asian cultures of downplaying one's own individual preferences for the sake of the group. It is not clear why African-Americans scored higher on the measure than individuals from other ethnic groups, although several writers have suggested that parents may socialize African-American children to stand up for themselves, either to protect themselves from aggressive peers (Ogbu, 1985) or against racism (Stevenson, 2004).

Socioeconomic status was found to affect resistance to peer influence in longitudinal analyses (although not in cross-sectional

analyses), with individuals of higher socioeconomic status reporting lower resistance to peer influence at age 14 but catching up over time to less advantaged youths. Because little previous work has examined socioeconomic differences in resistance to peer influence, and because the results of the cross-sectional and longitudinal analyses in the present report are not consistent, we caution against making too much of this finding and suggest that this issue be examined in future studies.

The findings of the present study extend and clarify our understanding of adolescent psychosocial development in two important ways. The extant literature on age differences in susceptibility to peer pressure over the course of adolescence describes a curvilinear pattern, in which individuals become more susceptible to peer influence between the ages of 10 and 14 and less susceptible between 14 and 18. The results of this investigation are consistent with the second part of this assertion but not the first. Although we, like others, find that resistance to peer influence increases linearly after age 14, according to our study resistance to peer influence does not change appreciably during early adolescence. We suspect that the difference between the findings of the current study and those reported in previous research is due to the nature of the measures employed. More specifically, the increase in susceptibility to peer influence believed to be characteristic of early adolescence is either specific to susceptibility to antisocial peer influence, an interpretation consistent with Berndt's (1979) earlier research, or an artifact of the confound between antisocial inclinations and susceptibility to influence that characterizes the measures used in much peer pressure research. Two recent studies of non-American samples, one of Dutch youth ranging in age from 10 to 18, using a translation of the RPI (Sumter, Bokhorst, Steinberg, & Westenberg, 2007), and one of French-Canadian youth ranging in age from 12 to 18 (Paus et al., in press), found linear, rather than curvilinear, increases in RPI scores as well.

The notion that early adolescence is not a time of increasing susceptibility to peer influence flies in the face of conventional wisdom and popular stereotypes of young teenagers as slavish conformists. If early adolescents appear to behave in ways that indicate increased conformity to their friends not only with respect to misbehavior but in matters that are not antisocial (e.g., in styles of clothing or tastes in music), this may have more to do with an intensification during this period in peers' demands on each other for conformity than with a decline in adolescents' ability to resist social influence. After all, individual conformity in any situation is the joint product of the pressure to conform and the capacity of the individual to resist the coercion. Thus, if individuals' vulnerability to peer influence remains constant during early adolescence, as our findings suggest, but if the strength of peer influence intensifies, one would expect to see a net increase in peer conformity, even in the absence of any weakening of internal fortitude. In many respects, this account makes more sense than the conventional story, in which susceptibility to peer pressure is said to increase and then decline, because it does not imply that some sort of psychosocial “regression” takes place during the first part of adolescence. It is also more consistent with the literatures on self-conceptions, self-reliance, and self-esteem, all of which show gradual and positive change during the early adolescent years (Steinberg, 2008). Some experimental studies of peer influence using the Asch paradigm (which presumably controls for age differences in the strength of peer influence) find a curvilinear,

rather than linear, relation between age and susceptibility to peer influence (e.g., Costanzo & Shaw, 1966), but others, like the present study, indicate that the pattern is linear (e.g., Walker & Andrade, 1996).

A second contribution of the present study is its extension beyond adolescence, into the decade of the 20s. Very little research on psychosocial development spans both adolescence and young adulthood, and questions are frequently raised about the age at which individuals attain “adult” levels of psychosocial maturity—most recently and notably, in the U.S. Supreme Court’s deliberations over the constitutionality of the juvenile death penalty, *Roper v. Simmons* (2005), where it was argued that adolescents’ heightened susceptibility to peer influence mitigated their criminal blameworthiness. Questions about when adolescence ends with respect to psychosocial development have taken on new significance in light of recent studies of brain development suggesting continued maturation during the period between 18 and 25 (Casey, Tottenham, Liston, & Durston, 2005) and in view of unproven assertions about the prolongation of psychosocial immaturity into “emerging adulthood” among recent cohorts of young people (Arnett, 2000). Our results suggest that, at least with respect to resistance to peer influence, little growth occurs beyond age 18 and that “emerging adults,” despite their still-developing frontal lobes, are just as mature as 30-year-olds. Whether a similar pattern characterizes other aspects of psychosocial maturation is an important topic for future research.

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Appendix

Resistance to Peer Influence Scale

For each question, decide which sort of person you are most like — the one described on the right or the one described on the left. Then decide if that is “sort of true” or “really true” for you, and mark that choice. For each line mark only ONE of the four choices.

Really True for Me	Sort of True for Me		BUT		Sort of True for Me	Really True for Me
<input type="checkbox"/>	<input type="checkbox"/>	Some people go along with their friends just to keep their friends happy.		Other people refuse to go along with their friends want to do, even though they know it will make their friends unhappy.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some people think it's more important to be an individual than to fit in with the crowd.		Other people think it is more important to fit in with the crowd than to stand out as an individual.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	For some people, it's pretty easy for their friends to get them to change their mind.		For other people, it's pretty hard for their friends to get them to change their mind.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some people would do something that they knew was wrong just to stay on their friends' good side.		Other people would not do something they knew was wrong just to stay on their friends' good side.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some people hide their true opinion from their friends if they think their friends will make fun of them because of it.		Other people will say their true opinion in front of their friends, even if they know their friends will make fun of them because of it.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some people will not break the law just because their friends say that they would.		Other people would break the law if their friends said that they would break it.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some people change the way they act so much when they are with their friends that they wonder who they “really are”.		Other people act the same way when they are alone as they do when they are with their friends.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some people take more risks when they are with their friends than they do when they are alone.		Other people act just as risky when they are alone as when they are with their friends.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some people say things they don't really believe because they think it will make their friends respect them more.		Other people would not say things they didn't really believe just to get their friends to respect them more.	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Some people think it's better to be an individual even if people will be angry at you for going against the crowd.		Other people think it's better to go along with the crowd than to make people angry at you.	<input type="checkbox"/>	<input type="checkbox"/>

Scoring instructions: Score each item from 1 to 4 (reading left to right on the instrument). Reverse-score items 2, 6, and 10. Sum the scores for valid responses and divide by the number of valid items. It is recommended that at least 7 items have valid responses.

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