# Delayed Adulthood, Delayed Desistance? Trends in the Age Distribution of Problem Behaviors

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As the transition to adulthood becomes more protracted and less orderly, fewer young people occupy adult roles and experience the social control associated with these roles. One might therefore expect behaviors associated with the teenage years to spill over into older age groups, reflecting postponed entrance into full social adulthood. We test this hypothesis by examining trends over time in the age distribution of crime, substance use, and violent death. We find little evidence that behaviors typical of adolescence are moving upward to older ages. Although the achievement of adult roles is being pushed to older ages, this stretching of the transition to adulthood is not reflected in the observed patterns of substance use, violent death, and arrests.

Since the early twentieth century, when adolescence as a separate life stage was recognized and its study was popularized, the process of becoming an adult has changed substantially. The transition to adulthood was compressed and standardized during the first half of the century, then stretched out and individualized during the later part of the century. The implication of these changes in the transition to adulthood for other life

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course stages is unclear. Some scholars argue that the delay in the adoption of adult roles means that adolescence is being extended (Buchmann, 1989). To other researchers, the increasing length of the transitional period and the later entry into full adult status suggest the development of a new life stage, labeled young or emerging adulthood (Arnett, 2000). In any case, social definitions of what it means to be an adult, for oneself or for others, have evolved in response to changes in the transition to adulthood (Furstenberg, Kennedy, McLoyd, Rumbaut, & Settersten, 2004).

The term adolescence was introduced in the early twentieth century by G. Stanley Hall to describe the distinct period between childhood and adulthood (Hall, 1904). Adolescence encompasses biological changes: physical growth, puberty and sexual development, and cognitive and psychological development. Adolescence is also a period of changing so-cial roles when young people become increasingly independent from their parents and natal families. Because of this upheaval, adolescence is often conceived of (both by the scholarly literature and in popular opinion) as a period of tension and conflict. The problems associated with adolescence are far from universal—many people pass through adolescence easily and happily (see, e.g., Arnett, 1999, for a review of the literature on this issue). However, on average in the United States, rates of many ''problem'' be-haviors are higher during adolescence than either childhood or adulthood. In this article, we examine trends over the past 25 years in the age-specific rates of some of these behaviors: crime, binge drinking and drug use, and violent death. Our goal is to determine whether the age distribution of these behaviors has shifted as the timing of the transition to adulthood has changed, and what these shifts, if they exist, mean for the evolving defi-nition of adulthood.

## CHANGES IN THE TRANSITION TO ADULTHOOD

The entry into adulthood—and thus the end of adolescence—is signaled by a series of transitions. The core role transitions are finishing school, entering the work force, leaving the parental home, marrying, and becoming a parent (Hogan & Astone, 1986; Shanahan, 2000; Winsborough, 1979). Taken alone, none of these transitions is either necessary or sufficient for the achievement of adult status, but taken together, they mark the adult stage of life course development. During the middle of the twentieth century, these transitions became standardized (Modell, 1989). That is, most young people followed a sequence of transitions in the same order (school leaving, first job, indepen-dent living, marriage, parenthood), and there was less variation in the age at which these transitions occurred than in earlier periods.

Over the past 30 years, however, virtually all of these markers of adulthood have been shifted to older ages (Furstenberg, 2000). For instance, a higher proportion of students completed high school in the 1990s than in the 1960s, and more students now enroll in post-high school education, pushing back the average age of school-leaving. The median age at first marriage has risen steadily since 1970, as has the median age at first birth (Casper & Bianchi, 2002; Chen & Morgan, 1991). In addition, the timing of these role changes has become more varied across individuals and within individual life courses (Buchmann, 1989; Rindfuss, 1991; Shanahan, 2000). Thus, for example, it has become more common to have a child before marrying and to re-enter school after spending some time in the labor force.

The net result of these changes is that most people are taking longer to go through the full set of transitions into adult roles, and some are delaying marriage and parenthood indefinitely. In 1960, 30% of 25-year-old women and 77% of 30-year-old women had completed all five major transitions to adulthood (finishing school, leaving home, becoming financially independent, getting married, and having a child). In 2000, in contrast, only 6% of 20-year-old women and 46% of 30-year-old women had done so (Furstenberg et al., 2004).

Figures 1 and 2 give examples of how changes in the timing of transitions to adulthood have affected the social roles of people in their teens and twenties. Figure 1 shows change over time in the proportion of people enrolled in school, and Figure 2 shows change over time in the proportion of people who are married. These charts are based on data from the Current Population Surveys, compiled and published by the U.S. Census
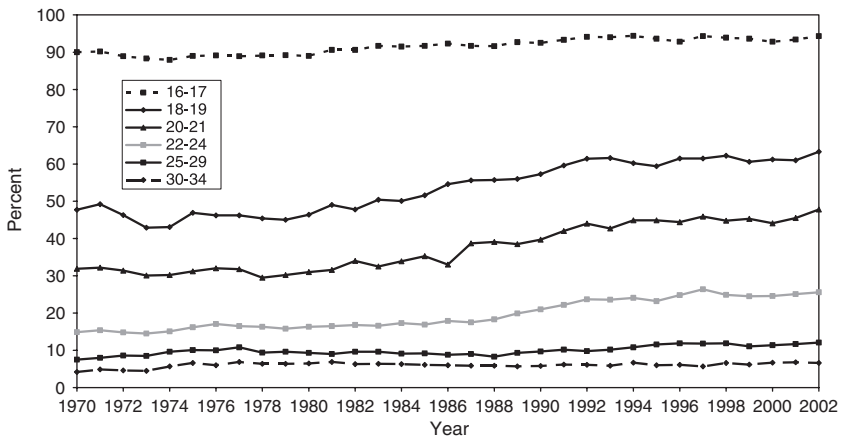


FIGURE 1     Proportion of population enrolled in school, by age.
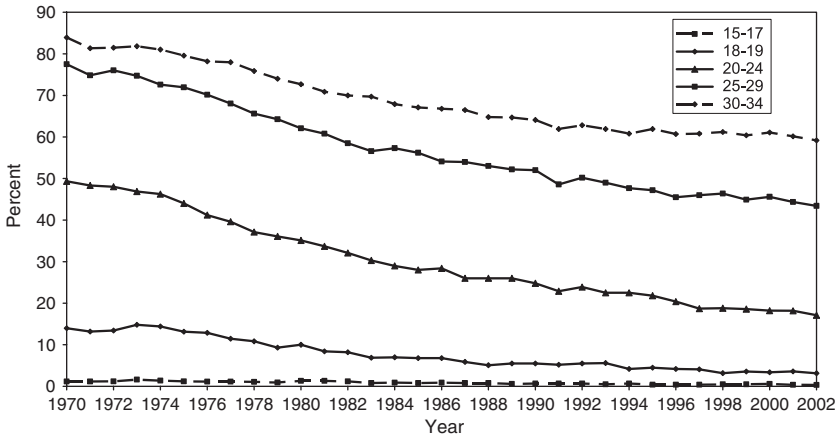*Source*: U.S. Census Bureau. See text for details.

FIGURE 2    Proportion of population married, by age group.
*Source*: U.S. Census Bureau. See text for details.

Bureau (see appendix items U.S. Bureau of the Census, 1971a, 1971b, 1972, 1973, 1974, 1975, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1998a, 1998b, 2001a, 2001b, 2003a, 2003b, 2006). Between 1970 and 2002, school enrollment increased for all age groups between 16 and 34. The increase was largest for people in their late teens and early twenties, and was very small for people age 25 and older. By 2000, around 60% of 18–19 year olds, half of 20–21 year olds, and 25% of people age 22–24 were enrolled in school. The proportion of people married, in contrast, declined over the same period (Figure 2). Very few people in the youngest age group (15–17) were married at any point between 1970 and 2002. About 14% of 18–19 year olds were married in the 1970s; this proportion dropped to <5% in the 1990s. The changes were even more striking for 20–24 year olds, half of whom were married in 1970 compared with <20% in the 1990s. For both school enrollment and marriage, changes were not confined to a sharp increase at one point, but took place steadily over a period of three decades.

In terms of life course stages, it is not clear how to interpret these delays in the transition to adulthood. People in their twenties who have not yet finished school or married may not have achieved full adulthood, but once they have left their teen years, and especially if they have taken on at least one adult role, they no longer fit the traditional conception of adolescent. In this article, we consider the question of whether the delayed transition to adulthood has resulted in extended adolescence in terms of the age distribution of behaviors associated with adolescence.

## "PROBLEM" BEHAVIORS

We examine trends over time in the age-specific rates of arrest, binge drinking and drug use, and deaths from homicide and motor vehicle accidents. (Details of our measures and data sources are discussed below.) Crime and substance use are widely studied examples of deviant behaviors that peak in late adolescence. Death rates from homicide and motor vehicle accidents also peak in the late teens or early twenties, although the reasons behind these patterns are less well theorized (Heuveline, 2002). Teens are more likely than older age groups to engage in risky behaviors such as driving recklessly and not wearing a seat belt. In addition, teens have rates of drunk driving equal to those of adults and are more likely than adults to ride with an intoxicated driver (Centers for Disease Control, 2005; Osgood, Johnston, O'Malley, & Bachman, 1988). Both of these factors contribute to higher rates of mortality from motor vehicle accidents among teens. ''Risk factors'' for homicide mortality include drug and alcohol abuse and involvement in criminal activity, as well as low self-control in general (Broidy, Daday, Crandall, Sklar, & Jost, 2006; Sampson & Lauritsen, 1990). High teen death rates from homicide are likely linked to the relatively high incidence of these risk factors during adolescence.

The behaviors we study can all be interpreted as resulting from high levels of risk-taking behavior in the adolescent years. Several models have been proposed to explain adolescents' affinity for risky behavior. Physiological changes that take place during the transition to adulthood may contribute to high rates of deviance during adolescence. For example, recent research suggests that neurological changes explain some of the increased risk taking and sensation seeking in adolescence, and that the brain functions regulating emotions and self-control may be late in developing relative to cognitive functions (Dahl, 2004; Dahl and Hariri, 2005). The incidence of deviant or risky behaviors may also be higher in adolescence due to the emphasis on exploration and experimentation during that period of the life course. Norms about appropriate adolescent behavior differ from adult norms, and peer pressure may encourage adolescents to engage in problem behaviors (Hagan & Wheaton, 1993; Osgood et al., 1988).

Finally, social structures both allow risky behavior during adolescence and promote desistance as young people mature. Students of crime and deviant behavior have long identified risk-taking behavior as a product of low social regulation and control. Adolescents have more freedom than younger children, both in the family and in the school system, but have not yet entered the more structured roles of worker, spouse, and parent. As adolescents move into adulthood, they become more strongly tied to work

and form bonds with spouses and children. The social control exerted through these bonds leads to reduced levels of criminal behavior (Sampson & Laub, 1990). The adoption of adult roles also means decreased opportunity for risky behavior. For example, as people leave school, marry, and enter full-time work, they have less leisure time and less contact with peers. Thus, adults are less likely to engage in binge drinking and illegal drug use than adolescents (Bachman et al., 2002). Adult institutions also exert normative control by increasing the stigma attached to substance use or criminal behavior.

None of the behaviors we study is unique to adolescents, and each is influenced by other social and economic changes in addition to life course changes. Our goal is not to explain the evolution of these behaviors. Rather, we use time trends in the age distribution of ''social problems'' as an indicator for changes in the social construction of life course stages. Because the age-specific rates of these behaviors are linked to social context, including the social roles and the social expectations particular to specified life course stages, changes in the construction of life course stages should result in changes in the age pattern of these behaviors.

Research on the transition to adulthood often focuses on subjective perceptions of adult status. The indicators we use represent behaviors rather than attitudes or norms, and are thus relatively concrete and clearly defined. Violent death is the most consistently defined and measured of the three, although there is some discretion in the classification of cause of death. Crime and substance abuse present more problems in measurement. As levels of social stigma change, people may become more or less willing to report drug use, and changes in police practices and judicial systems influence the likelihood that crime will result in arrest. We discuss issues relating to data quality and measurement more fully below.

## DATA AND METHODS

Our methods are straightforward: We graph trends over time in the age-specific rates of arrest, marijuana use, binge drinking, death from motor vehicle accidents, and death from homicide. We are primarily interested in whether young adult behavior becomes closer to teen behavior over the period in question.

We take data from three different data sources. Age-specific arrest rates are calculated by dividing the total number of people in a given age group arrested in the United States in a given year by the population in that age group during that year. We use time series data compiled by the Bureau of Justice Statistics, based on arrest data from the Federal Bureau of

Investigation Uniform Crime Reports and population estimates from the Bureau of the Census (see appendix item Bureau of Justice Statistics, 2000). These tabulations include arrest rates for all crimes for ages 14 and under, 15–17, 18–20, 21–24, and 25 and over from 1970 to 1999.

Arrest rates are known to seriously underestimate crime rates, and may also misrepresent time trends in crime rates due to changes in policing practices that affect arrests independent of crime (O'Brien, 1985). However, comparisons with both reports from crime victims and self-reports from criminals suggest that arrest rates do reflect demographic differentials in criminal behavior accurately (Hirschi & Gottfredson, 1983; O'Brien, 1985; Savolainen, 2000). That is, changes in reporting and policing behavior seem to affect all age groups of offenders similarly.

By using arrest rates for all crimes, we minimize distortion caused by police practices specific to particular crimes. Arrest rates for all crimes include status offenses (activities that are criminal only for minors, such as truancy or underage drinking). The inclusion of status offenses inflates arrest rates for juveniles relative to young adults, but should not affect trends over time in relative arrest rates. We repeated our analysis using crime indices for violent crimes and for property crimes; although these indices showed different overall trends from the total crime rates, trends in the age distribution of crime were similar for all three measures. We present only trends for total arrests in this article.

We rely on the Monitoring the Future project for data on drug and alcohol use. Since 1976, Monitoring the Future has carried out a series of panel surveys that interview students and young adults on drug and alcohol use and the social context for this use; for further information on sampling and survey methods, see Johnston, O'Malley, and Bachman (1996). From the Monitoring the Future survey, we select two measures of substance use: whether the respondent has used marijuana within the past month, and whether the respondent has had five or more drinks in the past 2 weeks. Marijuana is by far the most commonly reported illicit drug. Over the 26-year period of study, approximately three times as many 18 year olds reported using marijuana within the past year as reported using the next most common drug, amphetamines. About six to eight times more 18 year olds reported using marijuana than crack cocaine, and 30–50 times more respondents used marijuana than heroin. We also examined a summary measure of drug use, the use of any illicit drug other than marijuana in the past year, but patterns in this measure did not differ from patterns of marijuana use, so we do not present those results. We use binge drinking, rather than consumption of any amount of alcohol, as a measure of alcohol use in order to better represent the socially problematic aspects of alcohol use.

The Monitoring the Future data are limited in the ages and cohorts covered. The first survey wave interviewed high school seniors in 1976. Every 2 years, these original respondents were re-interviewed and a new high school class was added to the sample. Thus, the first survey respondents have been followed for 26 years in the most recent wave of data, capturing information up to age 40, but this full range of data is not available for all cohorts. In 1978, for instance, when the second wave of surveys was conducted, only high school seniors and those from the high school class of 1976 were interviewed. Still, the data provided by the Monitoring the Future project are unique in providing consistent information about substance use in adolescents and young adults over a long period of time.

It is not possible to explicitly test whether older respondents are more or less likely to report substance use accurately than younger respondents, or whether levels of reporting have changed over time, but internal consistency checks can be performed to assess the general reliability of the data. These checks, including comparisons between respondents' reports for themselves and for unnamed friends and comparisons between reports for the past week and reports for the past month, suggest high reliability (Bachman et al., 2002). Some discrepancies between older respondents and teenagers may arise due to the transition from school-based administration of the survey to individual administration for post-high school ages. Because the survey procedures have been consistent over time, however, any measurement differences between age groups are also likely to be consistent over time.

Data for mortality rates come from the Vital Statistics of the United States series, volume 2 and from tabulations of these rates compiled by the National Center for Health Statistics (see appendix items National Center for Health Statistics, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, n.d.). We examine death rates from homicides and motor vehicle accidents. These causes are both related, directly or indirectly, to socially determined harmful behavior, rather than biological causes. Together, they accounted for about a third of deaths below age 35 starting in the 1970s (Heuveline, 2002). Cause of death is recorded on death certificates, and classified based on the *International Classification of Diseases* (ICD). This classification system has been revised periodically, and new revisions were adopted in 1968, 1979, and 1999 (Hertzel, 1997; National Center for Health Statistics, n.d.). However, the categories studied here have remained essentially stable under all revisions (Heuveline, 2002). We examine mortality rates by 5-year age group from age 10 to age 34, from 1970 to 1999.

Because we use data from different sources, the years of available data and the age group classification are slightly different for each measure. These differences reduce comparability of the measures, and some age

classifications are better suited for our purposes than others. For example, the Bureau of Justice Statistics data on arrests allow us to compare arrest rates of 15–17 year olds and 18–20 year olds, while the Vital Statistics data on mortality combine these ages in the 15–19 age group. Despite these gaps, we believe that the wide time span—at least 25 years for each measure—and range of ages is sufficient to capture population level changes in the behaviors studied here.

As with all social science data, these data are subject to both random error and systematic bias in measurement. Because of the negative connotations of the behaviors we analyze, these behaviors may be especially sensitive to measurement error, and changes in social climate might produce changes in measurement error. For instance, changes in police procedures, attitudes toward youth crime, and the legal status of juveniles might influence arrest rates. Respondents of different ages might be more or less likely to under-report substance use, and changing levels of stigma might shift under-reporting over time. We are interested in differential rates of change by age group over time across multiple different behaviors. To affect our conclusions, therefore, bias in our data would have to create systematic differences in reporting by age group over time in all of the behaviors studied here. Our research into the literature on the quality of these data sources did not find any evidence of such systematic bias.

## RESULTS

### Criminal Behavior

*Summary: total arrest rates for all crimes show no changes in distribution by age.*    Arrest rates rose between 1970 and 1999 for all age groups (Figure 3). The increase in arrest rates was largest for adolescents and young adults (age 15–17, 18–20, and 21–24). Changes in the juvenile justice system in the 1990s facilitating the treatment of young offenders as adults appear not to have affected the rates of arrest among young teenagers relative to rates among those age 18 and over. Arrest rates at ages 18–20 and 21–24 show roughly parallel trends, and change in tandem for most of the period; time trends in arrest rates in these two ''young adult'' age groups resemble each other more than they resemble the time trend for adolescents.

### Substance Use

*Summary: trends suggest some diffusion of marijuana use from teenagers to young adults in their twenties.*    Trends in the proportion
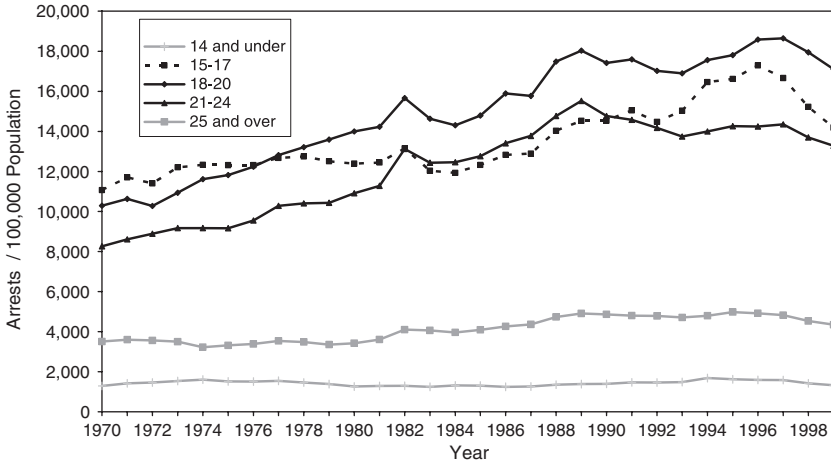
FIGURE 3     Age-specific arrest rates, U.S. population.
*Source*: Bureau of Justice Statistics. See text for details.

of individuals who have used marijuana in the past month vary across age groups between 1976 and 2002 (Figure 4). Based on this chart, it appears that marijuana use declined among all age groups in the 1980s, and plateaued or increased in the 1990s. (Prevalence rates for 18 year olds rose in the late 1970s, but because of the limited age-cohort range of the Monitoring the Future data, it is impossible to tell if this early trend was shared by other age groups as well.) The general shape of the trend lines is similar for all age groups, but the increase in marijuana use in the 1990s was larger among the younger respondents, resulting in a larger age difference in drug use in the later period.

Age differences increased across the full range of ages. That is, there is no clear threshold above which age groups showed distinct patterns. However, it does appear that increases over time in the prevalence of marijuana use are more consistent among respondents age 26 and younger than among older respondents.

*Summary: there was no change in binge drinking rates among people in their twenties.*     Trends in binge drinking—defined here as having five or more drinks in one sitting at least once over the past 2 weeks—are shown in Figure 5. Among 18 year olds and 19–20 year olds, the prevalence of binge drinking decreased between 1976 and 2002. The prevalence of binge drinking appears to have been stable among older age groups, although it is possible that declines are hidden by the lack of data on older respondents for early years of the period under study. The decline
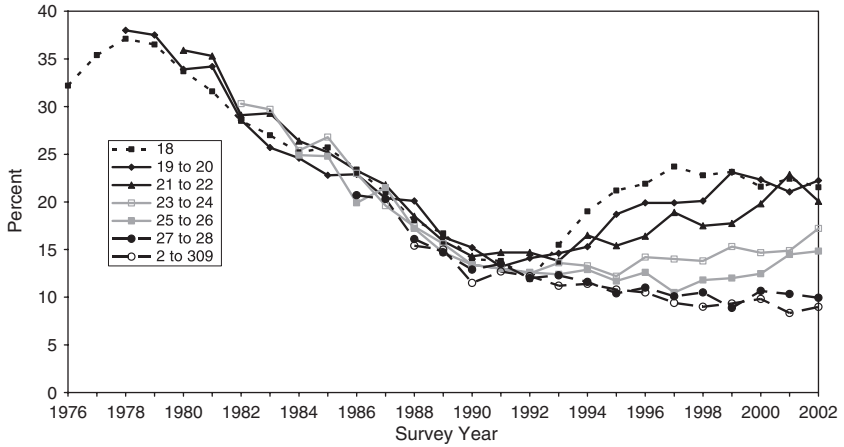
FIGURE 4     Used marijuana in past 30 days, by age of respondent.
*Source*: Monitoring the Future. See text for details.

among the youngest age groups is likely related to increases in the legal drinking age from 18 to 21 in the 1970s and 1980s. Aside from this decline, there is no relative change in the age distribution of binge drinking. That is, the behavior of younger respondents has not diverged farther from that of older respondents during the period under study, nor have the higher binge drinking rates of young people been adopted by people in their late twenties.
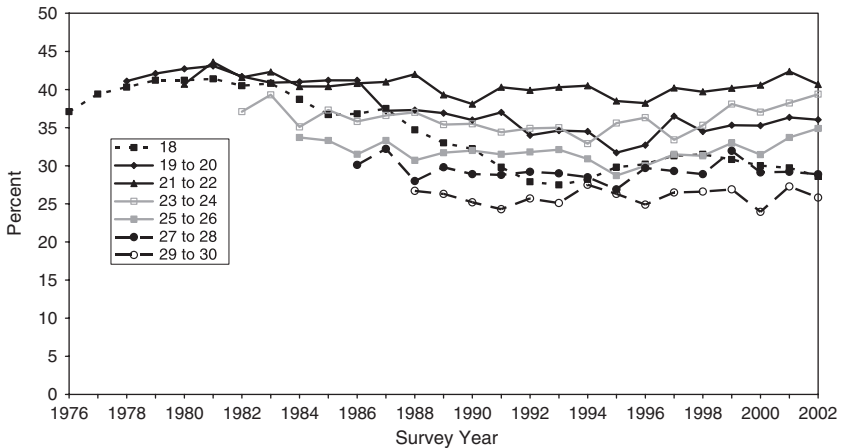


FIGURE 5     Had five or more drinks in a row at least once in the past 2 weeks, by age of respondent.
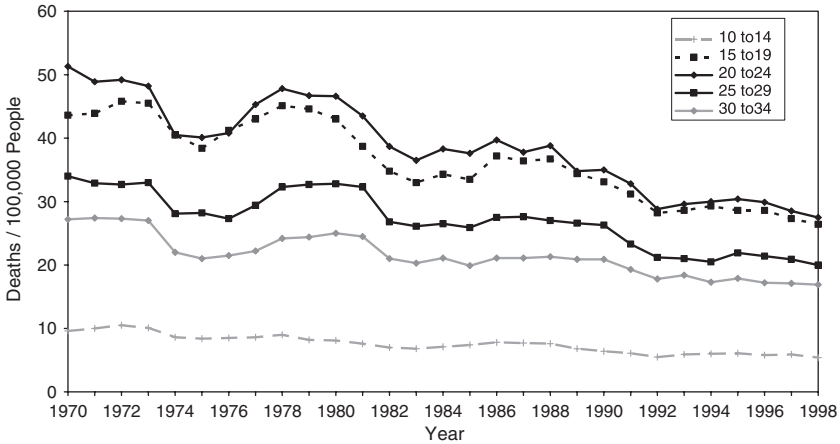*Source*: Monitoring the Future. See text for details.

FIGURE 6    Age-specific rates of death by motor vehicle accident, U.S. population. *Source*: Vital Statistics. See text for details.

## Violent Death

*Summary: the age distribution of death rates from motor vehicle accidents did not change.*   Death rates from motor vehicle accidents have declined for all age groups since 1970; the shape of the trend line is similar for all age groups (Figure 6). Looking at this chart, there appear to be three distinct groups. Children age 10–14 have very low death rates from motor vehicle accidents; the death rates of adults age 30–34 are also relatively low. Death rates are highest for people age 15–19 and 20–24, and death rates for the 25–29 age group are in between those of the older adult groups and the adolescent/young adult groups. There is some convergence of death rates for 15–19 year olds and 20–24 year olds, but this convergence appears to be largely an artifact of the general decline in death rates from motor vehicle accidents across all age groups.

*Summary: death rates from homicide increased for both 15–19 year olds and 20–24 year olds relative to other age groups.*   The most notable feature in Figure 7 is the massive increase in death rates from homicide in the 1990s. For the 15–19 age group, for instance, the death rate from homicide in 1994 was more than double the 1984 rate. Death rates from homicide show some convergence between the 15–19 and 20–24 age groups. Deaths from homicide rose during the 1990s for all age groups, but the peak was sharpest for the 15–19 and 20–24 age groups. However, this
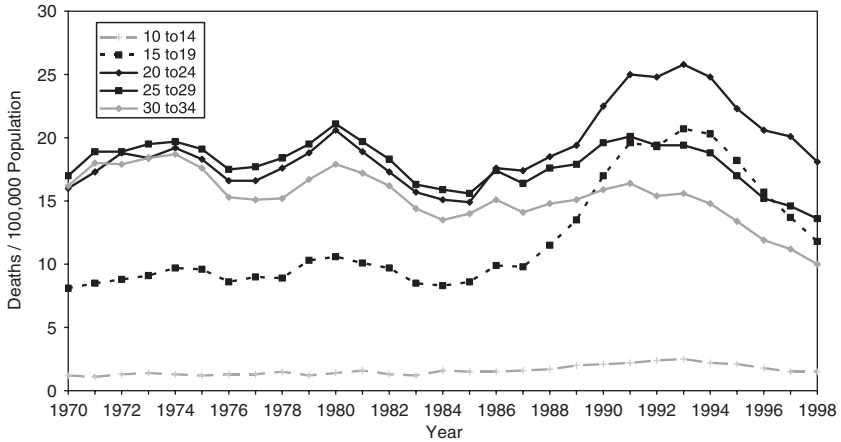
FIGURE 7     Age-specific rates of death by homicide, U.S. population.
*Source*: Vital Statistics. See text for details.

convergence appears to be driven by the 15–19 group coming to resemble the 20–24 age group, rather than the reverse.

## DISCUSSION AND CONCLUSION

We found little evidence that the age distribution of problem behaviors has changed in response to changes in the transition to adulthood. Behaviors associated with the teen years are not consistently becoming more common in the early to mid-twenties, and there is no evidence that these behaviors are extending beyond age 25. Table 1 summarizes our results: For three of our five measures, there was no change in the age distribution of behaviors. Smoking marijuana became more common in the 1990s for people in their early to mid-twenties, and homicide death rates rose for people in their early twenties.

Our failure to find links between the postponement of adulthood and age patterns of problem behavior might be due to methodological limitations in our study. Data from narrower age groups might have reflected changes more precisely, and race- and sex-specific rates might have been able to isolate changes in the particular groups that have been most affected by delayed adulthood. It is also possible that changes in the problem behaviors we study are lagging behind changes in the transition to adulthood, and that the age distribution of these behaviors will change more dramatically in the future—although this seems unlikely given the steady changes in the transition to adulthood observed since the early 1970s.

TABLE 1
Summary of Results

| Measure | Trend |
|---|---|
| Arrests | No relative change |
| Marijuana use | Relative increase for all ages 18–26 |
| Binge drinking | No relative change |
| Deaths from motor vehicle accidents | No relative change |
| Homicide deaths | Relative increase for ages 15–19 and 20–24 |

Alternatively, our findings may indicate true stability in the age patterns of problem behavior. These findings cannot provide explanations as to why problem behavior has not spread to older ages, but we can speculate about possible reasons for the lack of change. For instance, the stability of the relationship between age and risk-taking behavior in a time of changing social context of adolescence suggests the importance of biological aspects of human development. However, much current research finds that biological effects are dependent on social and environmental context, and that psychological and neurological development is contingent on both experience and biology (Arnett, 1999; Dahl, 2004; Dahl & Hariri, 2005). Further research is needed to better understand interactions between physiological factors in adolescence and social changes in the transition to adulthood.

How might social structures continue to encourage young people to leave behind behaviors associated with adolescence and adopt ''adult'' behaviors? New institutions may support desistance from problem behaviors. Marriage has been postponed to increasingly older ages, but ages at first coresidential union have risen much more slowly, as young people cohabit rather than marry (Bumpass, Sweet, & Cherlin, 1991). Although cohabiting relationships are less stable than marriage, cohabitation, like marriage, is linked with higher rates of self-perceived adulthood (Shanahan, Porfeli, Mortimer, & Erikson, 2004). To the extent that adult identity influences risk-taking behavior, cohabitation might reduce the incidence of problem behaviors associated with adolescence. Cohabitation, like marriage, might also reduce the incidence of problem behavior by reducing the amount of time spent with groups of peers.

All of the major transitions to adulthood have been delayed on average, but delays are not uniform across transitions or across individuals. Varying trajectories across multiple transitions to adulthood have been observed, with some young people achieving financial independence but postponing family formation, while others have children and relationships

but less established employment (Osgood, Ruth, Eccles, Jacobs, & Barber, 2004). The net result of changes in the transition to adulthood may be diverging paths to maturity, in which different transitions take on more or less importance for different subgroups, rather than extended adolescence for all youths. For instance, recent qualitative research argues that, even in the absence of other adult institutions such as work or marriage, motherhood can act as an organizing force in single mothers' lives, pushing them to desist from substance use and risky lifestyles (Edin & Kefalas, 2005). For women and men postponing both marriage and childbearing, on the other hand, employment may become the central factor in the transition to adulthood. Individual level research studying the relationship between role transitions and desistance from problem behavior could illuminate the relative importance of different transitions to adulthood.

For the two behaviors which did show changes in age distribution (marijuana use and homicide death rates), changes were the result of trends shared by both teens and people in their early twenties. That is, people in their teens and early twenties changed simultaneously to become more different from people in their late twenties and older. These trends are more consistent with the emergence of young adulthood as a distinct life course stage than with the extension of adolescence into the mid-twenties. Increasing college enrollment may contribute to the development of a young adult social identity: Universities gather young people together in a setting segregated from other age groups. This possibility is consistent with our observation that marijuana use increased among people in their early twenties, but less so with the stability of binge drinking rates in the early twenties.

Despite the limitations discussed above, the evidence that we have presented indicates that the lengthening span of adult transitions has not produced a drift toward later age in the prevalence of problem behaviors traditionally associated with adolescence. Growing up may take longer these days, but we find little evidence that the new timetable has resulted in rising levels of problem behaviors during the third decade of life.

## ACKNOWLEDGMENTS

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