

SPECIAL SECTION: HETERODOX ISSUES IN PSYCHOLOGY

Getting Better All the Time: Trends in Risk Behavior Among American Adolescents Since 1990

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A B S T R A C T

Contrary to the negative narrative in psychology and in the American public, many trends in the risk behaviors of American adolescents have been positive in recent decades. Evidence is presented for positive trends in four areas: substance use, unprotected sex, crime, and hazardous automobile driving. A comparison of American adolescents to older Americans and to adolescents in other developed countries indicates that the pattern of positive trends is distinct to young Americans and does not apply consistently across age groups and countries. Three explanations for the positive trends are considered: the effects of public policies, closer parent–child relationships, and the social consequences of electronic media use. The most promising hypothesis is that a rise in electronic media use led to a decline in unstructured socializing, which led in turn to lower risk behavior.

S C I E N T I F I C A B S T R A C T

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Keywords: risk behavior, substance use, teen pregnancy, delinquency, risky driving

Ever since G. Stanley Hall (1904) proposed that adolescence is inherently a time of “storm and stress” over a century ago, the dominant view in psychology has been that adolescents are unruly, impulsive, and a threat to society. Although a subfield of “positive youth development” has arisen (Lerner et al., 2011), it is dwarfed by

the vast literature on risk behavior, “problem behavior,” and externalizing problems, as well as research on specific areas such as substance use, delinquency, and risky sexual behavior. Moreover, in recent years negative stereotypes of adolescents have received the imprimatur of developmental neuroscience (Morris, Squeglia, Jaco-

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bus, & Silk, 2018; Steinberg, 2008; Steinberg et al., 2017). This new field purports to show, echoing Hall (1904), that adolescents are inherently and inevitably impulsive, due to the immaturity of their brains in combination with their irrepressible desires.

A related and equally popular theme in psychology is that the current generation of adolescents is especially deplorable. For example, research has claimed to find an increase in narcissism among the young over recent decades, and a decrease in empathy (Konrath, O'Brien, & Hsing, 2011; Twenge & Campbell, 2010). The alleged increase in narcissism is purported to have behavioral implications; being narcissistic supposedly promotes deviant behavior (Twenge, 2006, 2013). Popular writers have joined in, deriding the current generation of young people as lazy, selfish, undisciplined, and lacking in self-control and self-discipline (Koslow, 2012). In the general public, too, young people are contrasted unfavorably with other recent generations. For example, in a survey of American adults by the Pew Research Center, 70% agreed that older people have a better "moral values" than "millennials" do (Pew Research Center, 2010).

Overlooked, amid all the lamenting and sounding of alarms, is that the behaviors of young Americans have changed in recent decades in many ways that are unambiguously positive. Although declines in risk behavior have been noted separately for substance use (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2018), unprotected sex (Guttman Institute, 2016), and crime (Uggen & McElrath, 2013), there is a broad pattern of favorable changes in the lives of young Americans that has so far been little noticed and remains unexplained. In this article, the goal is to bring together the various positive trends that have occurred since 1990 in the risk behaviors of young Americans. The year 1990 was chosen as the baseline year, because up to that time the trend in risk behaviors had worsened for over two decades, and subsequently turned for the better. The focus will be on adolescents (ages 13–18), as this is the age group where the positive changes have mainly taken place. Then, explanations for these changes will be considered.

Overall patterns will be presented; variations based on ethnicity, social class, and other factors will not be explored, due to space limitations, but are a worthy topic for future investigation. Trends in emotional well-being and mental health are also beyond the scope of this article. In any case, evidence for changes in emotional well-being and mental health over recent decades is mixed and does not appear to show the same positive trend (Arnett, Žukauskienė, & Sugimura, 2014). Another potential question for future investigation is why the risk behavior trends are clear and consistent but trends in emotional well-being and mental health do not appear to have headed in the same direction.

Declines in Four Types of Risk Behavior

Across a wide variety of risk behaviors, rates have declined among American adolescents in recent decades, in areas including substance use, unprotected sex, crime, and hazardous automobile driving. The first three areas have long been regarded as components of adolescent risk behavior (Jessor, 1992), and automobile fatalities are the top source of injuries and fatalities for adolescents once they begin to drive. In this section, all the data sources are reputable and well-established organizations that have assembled national samples. Links to all sources are provided in the references for readers who would like more information on the methodology of each study.

With regard to substance use, according to the annual Monitoring the Future (MTF) national surveys, rates of alcohol use and cigarette smoking among adolescents have declined sharply since 1990, as shown in Figure 1 (Johnston et al., 2018). Rates of other illicit drugs (not including marijuana) rose during the 1990s but have since de-

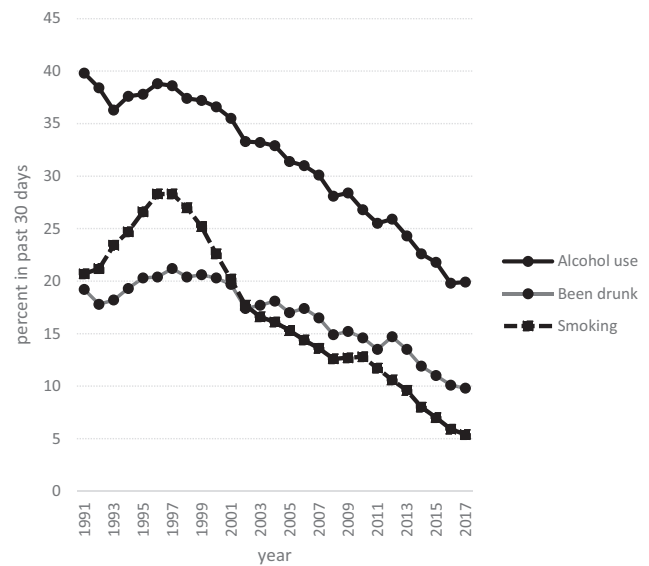


Figure 1. Trends in substance use, American adolescents (Grades 8, 10, and 12 combined). Source: Johnston et al. (2018).

clined to their lowest levels in more than 40 years of MTF surveys. Marijuana use is an exception to this trend: It rose in the early 1990s and has fluctuated since then.

Unprotected sex is a second area where there has been an unmistakable decline since 1990. According to the Centers for Disease Control and Prevention (CDC), from 1991 to 2015 there was a substantial decline in the proportion of 9th- to 12th-grade American adolescents who are sexually active, from 54% to 41% (CDC, 2016b). Furthermore, among those who are sexually active, condom use at last intercourse increased from 46% in 1991 to 57% in 2015 (Kann et al., 2016). Consequently, the teenage pregnancy rate has plunged, as Figure 2 shows.

In addition, juvenile crime rates (ages 10–17) have shown a steep decline since the early 1990s. Rates of violent crimes as well as property crimes have dropped by more than half, as shown in Figure 3 (U.S. Department of Justice, 2016). Accordingly, behaviors related to violence have declined as well. In the national Youth Risk Behavior Survey of high school students, from 1991 to 2015 there were declines in adolescents' reports of carrying a weapon (from 26% to 16%), being in a physical fight on school property (from 16% to 8%), and being injured in a physical fight (from 4.4% to 2.9%; CDC, 2016b).

Finally, automobile fatalities among adolescents have declined by about half since the early 1990s, as Figure 4 shows (National Highway Traffic Safety Administration, 2018). Although the decline is due in part to improvements in auto safety, it has been greater among 16- to 20-year-olds than in any other age group, indicating that an age-specific explanation is required. The decline has occurred despite growing concerns regarding tendencies among young people to be distracted by texting while driving (Jacobson, Bailin, Milanaik, & Adesman, 2016). Automobile fatalities among young people have been found to result in part from risky driving behavior, including speeding, driving too close to other traffic, and driving while intoxicated (Cestac, Paran, & Delhomme, 2011). This suggests that the dramatic decline in automobile fatalities among young people over the past two decades reflects a decline in hazardous driving behavior. Given the steep decline in alcohol use noted earlier, a corresponding decline in driving while intoxicated seems likely, although this is a hypothesis that requires further investigation.

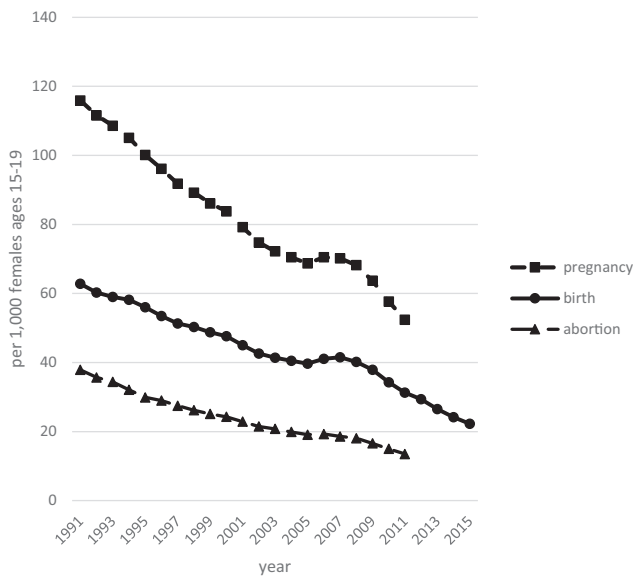


Figure 2. Trends in rates of pregnancy, abortion, and birth among American adolescents. Sources: Guttmacher Institute (2016); Hamilton, Martin, and Osterman (2016); U.S. Department of Health and Human Services (2016).

Are the Trends Age- and Country-Specific?

It seems clear that there have been major improvements in rates of risk behavior among young Americans since 1990. But why? What has caused these trends to head in the same positive direction, across a wide range of domains? One way to begin answering this question is to see whether there have been similar trends across ages and countries. If the trends have taken place across age groups within the United States, this would call for explanations that apply to American society as a whole. In contrast, if the trends have taken place only

among adolescents, the explanations must be specific to adolescents as well. Similarly, if the trends have taken place among youth not just in the United States but across countries that are similar economically to the United States, the other “developed countries,” then explanations must be sought in changes that apply across countries. But if the trends have taken place only or mainly in the United States, then the changes responsible for the trends must be specific to the United States as well.

First, consider the age trends within the United States. Alcohol and cigarette use have not declined notably among adults since 1990; in fact, as Figure 5 shows, according to the National Survey on Drug Use and Health, binge drinking among adults (ages 26 and older) has risen (Center for Behavioral Health Statistics & Quality, 2015). Binge drinking and marijuana use have also risen substantially among 18- to 25-year-olds since 1990 (Substance Abuse and Mental Health Services Administration, 2017). Furthermore, the opioid epidemic, which has caused massive fatalities among American adults, is not evident among adolescents (Johnston et al., 2018). In contrast to the decline in teen pregnancy, rates of nonmarital births among women from the late 20s through the 30s have risen sharply since 1990 (Childstats.gov, 2018). Crime trends show no clear age pattern across adult subgroups since 1990, with decreases from age 18 to 39, increases from age 40 to 59, and decreases for age 60 and over (Bureau of Justice Statistics, 2016). The decrease among juveniles has been far greater than in any adult age group. Automobile fatalities have declined across age groups in recent decades, but the declines have been most pronounced among 16- to 20-year-olds (NHTSA, 2018).

With regard to adolescents in other developed countries, there is not a comparable pattern of widespread decline in risk behavior and its consequences. In the area of substance use, declines in tobacco and alcohol use have been more pronounced among adolescents in the United States than in other developed countries. According to the European Monitoring Center for Drugs and Drug Addiction (EMCDDA; 2017), rates of binge drinking among 15- to 16-year-olds

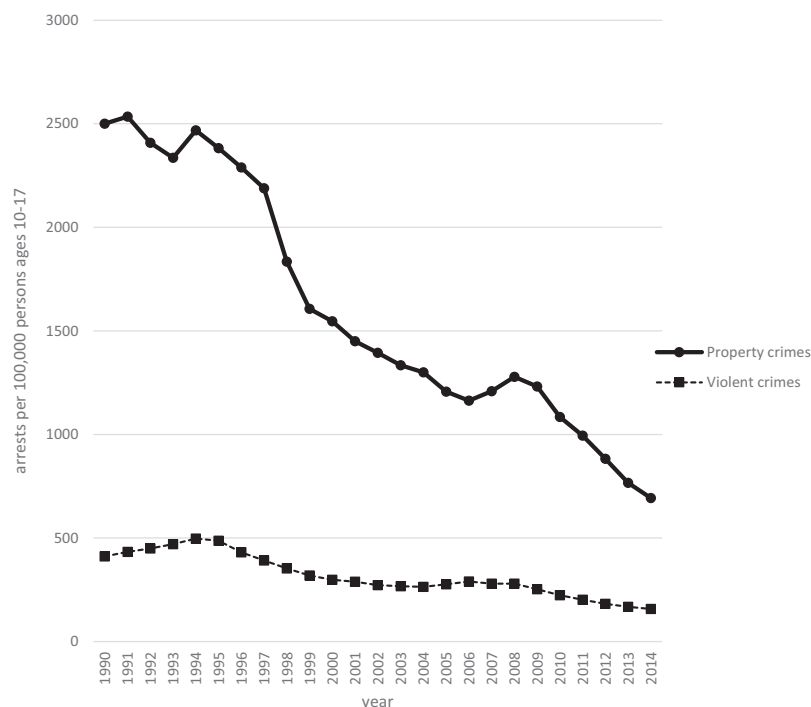


Figure 3. Trends in juvenile arrest rates. Source: U.S. Department of Justice (2016).

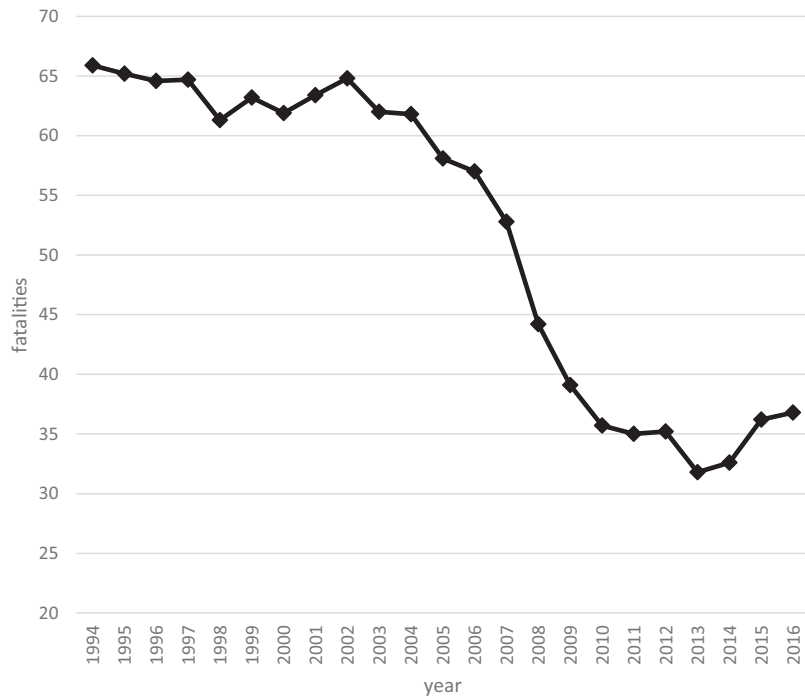


Figure 4. Rates of automobile fatalities per 100,000 drivers ages 16–20. Source: National Highway Traffic Safety Administration (2018).

across Europe have changed little since 1995 and remain high, with about 35% reporting binge drinking within the past month. Cigarette smoking has declined only slightly. Because declines in use of these substances have been steep since 1990 in the United States, American adolescents now have far lower rates of use of both alcohol and cigarettes; rates of smoking or excessive drinking in the past month

are over three times higher in Europe (EMCDDA, 2017; Johnston et al., 2018; World Health Organization, 2016). For teen pregnancy, rates have fallen since 1990 across developed countries, although the decline has been greater in the United States than in any other developed country, in part because the baseline rate in the United States was higher; rates in the United States remain higher than in

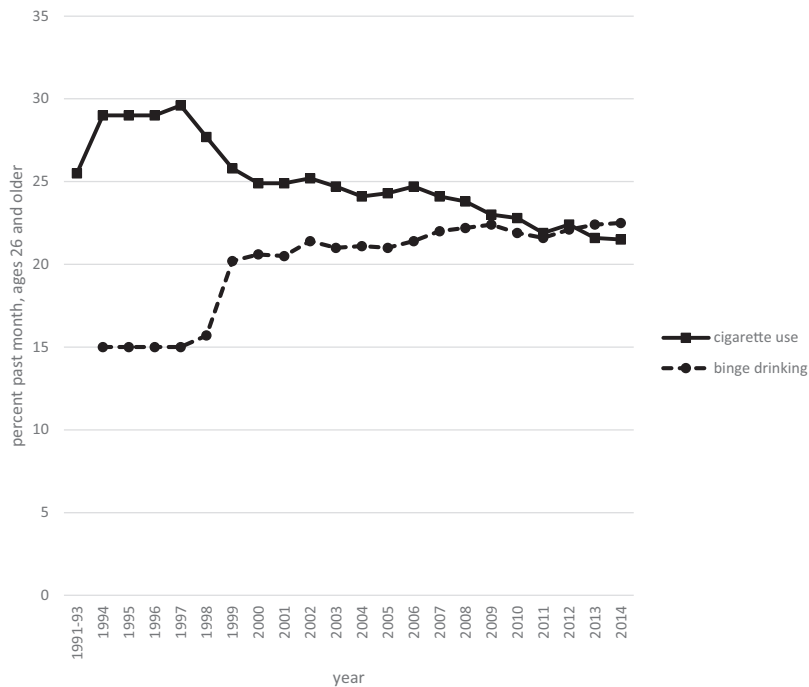


Figure 5. Trends in cigarette use and binge drinking among Americans age 26 and over. Sources: Center for Behavioral Health Statistics and Quality (2015); Substance Abuse and Mental Health Services Administration, Office of Applied Studies (2012).

most other developed countries (OECD Family Database, 2016). Regarding juvenile crime, rates have fallen in a combined index of 25 member states of the European Union in the past decade (Eurostat, 2017), but across countries some have risen and some have fallen. Just as for teen pregnancy, the decline in juvenile crime is more dramatic in the United States because the baseline rate was so much higher; violent crime rates remain far higher in the United States than in any other developed country, across age groups. (In the area of automobile driving, nearly all other developed countries have a minimum legal driving age of 18, so an international comparison of risky adolescent driving and subsequent fatalities is problematic).

In sum, the favorable trends in risk behavior among young Americans do not apply consistently across age groups within the United States and apply unevenly and uncertainly to adolescents in other developed countries. Consequently, it appears that an understanding of the widespread positive trends among American youth must be sought in an explanation that applies specifically to young Americans. But what could that explanation be?

Explaining the Pattern: Three Possibilities

Rates of all types of risk behavior considered here rose substantially from the late 1960s to 1990 before their subsequent decline, so it could be that current rates represent a return to the pre-1960s norm for adolescent behavior. Nevertheless, there would still have to be some explanation for why the high rates reached by 1990 did not become the new norm, or rise even higher, but instead declined. Three possible explanations will be considered. The first and second leave a great deal unexplained. The third explanation may be more compelling but requires further investigation.

A Triumph of Public Policy?

One explanation lies in the range of public policies that were instituted in the past 25 years in the United States to address the various types of adolescent risk behavior described here. With regard to substance use, the decline in alcohol use has been attributed to the rise in the minimum legal drinking age from 18 to 21 as national policy, in 1984 (Deas & Clark, 2009). The decline in cigarette smoking is typically attributed to the wave of litigation in the late 1990s that raised the price of cigarettes and caused the tobacco companies to accept restrictions on advertising and marketing to youth (Nelson et al., 2008; Tworek et al., 2010). In the area of adolescent sexual behavior, lower rates of sexual behavior, more widespread condom use and the decline of teen pregnancy have been explained as due to changes in sex education as a response to the rise in prevalence of HIV/AIDS in the late 1980s and early 1990s (Santelli, Orr, Lindberg, & Diaz, 2009). For the decline in crime, there are several policy-based explanations, including the hiring of more police and greater police presence in high-crime areas (Uggen & McElrath, 2013; Zimring, 2007). For automobile fatalities, graduated driver licensing programs that restrict adolescents' driving privileges when they first learn to drive—for example, prohibiting driving at night or with same-age passengers—and expand privileges gradually, have been shown to be highly effective at reducing accidents and fatalities among novice drivers and have been adopted in nearly all American states (Zhu, Cummings, Zhao, Coben, & Smith, 2015). These public policies are all specific to the United States, so they would help explain why the downward trends in risk behavior have occurred more in the United States than in other developed countries.

Despite this evidence, the public policy explanation is ultimately unpersuasive. No major new public policies to lower adolescent substance use have been widely implemented in the past decade, yet

the decline in adolescent drinking and cigarette smoking continues apace, as shown in Figure 1. Sex education for adolescents may have improved during the HIV/AIDS era, but it remains inadequate; most young Americans are shockingly ignorant about contraception (Kaye, Suellentrop, & Sloup, 2009), only 18 American states mandate sex education that includes information about contraception (Guttman Institute, 2017), and access to contraception for adolescents continues to be restricted in American society—yet rates of teen pregnancy continue to fall (see Figure 2). All the major public policy initiatives addressing crime have been old news for over a decade, yet the drop in juvenile arrest rates is unabated (see Figure 3). Most American states had adopted graduated driver licensing programs by a decade ago, yet the pace of decline in adolescent automobile fatalities has been greater than ever in the past decade, as shown in Figure 4. Some of the public policies that receive the most funding (e.g., “abstinence only” sex education, the DARE program to prevent substance use, and the Scared Straight program to reduce crime) have been either ineffective or harmful, yet positive trends continue. Thus, the door remains open for other explanations for the widespread decline in American adolescents' risk behavior.

Closer Ties to Parents?

A second possible explanation is that today's American adolescents are closer to their parents than adolescents of a generation ago, and hence less likely to spend the sort of unmonitored time with friends that is often the setting for risk behavior. In recent years, theory and research has arisen on “intensive parenting,” in which parents are highly involved with and engaged with their children (Budds, Hogg, Banister, & Dixon, 2017; Schiffrin, Godfrey, Liss, & Erchull, 2015). The focus of research in this area has been mainly on infants and young children, but some studies have included adolescents. A study of the relation between intensive parenting and outcomes for children and adolescents found that “accessible and engaged” parenting predicted lower rates of delinquent behavior (such as “Taken something from a store without paying for it;” Milkie, Nomaguchi, & Denny, 2015). The relation between intensive parenting and child outcomes was stronger in adolescence than earlier in childhood, but even in adolescence the effect size was small. Another study also showed that “family time,” such as eating meals and going on vacations together, was related to fewer acts of delinquency among adolescents (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2007).

Nevertheless, there is little evidence to show that intensive parenting among parents of adolescents has increased since 1990, thus explaining corresponding decreases in adolescent risk behavior. A comparison of American parents with parents in 10 European countries over a 40-year period from 1970 through 2010 showed a common trend toward more time with children (ages 13 and under) across countries (Dotti Sani & Treas, 2016). However, it is unclear whether the same trend applies to parents of adolescents. Few adolescents ages 13 and under participate in any of the risk behaviors examined in this article, so data on parenting of children 13 and under are of limited relevance.

Research shows a relation between adolescent risk behavior and parental monitoring, that is, parents' awareness of where their adolescents are and what they are doing. There is a long tradition of research showing that parental monitoring is negatively related to a wide range of risk behaviors in adolescence, in areas including substance use, crime, and risky sexual behavior (Clark, Donnellan, Robins, & Conger, 2015; Hadley, Houck, Barker, & Senocak, 2015; Stattin, Kerr, & Tilton-Weaver, 2010). However, there is no evidence to show that parental monitoring has increased since 1990. Indeed, with single parenthood and dual-career couples

increasing sharply during that period, the opposite hypothesis is more likely: that parental monitoring of adolescents has diminished over the past 25 years.

Nevertheless, an aspect of parental monitoring that provides a possible explanation for declines in adolescent risk behavior is the rise of electronic monitoring. Nearly all American adolescents now carry a smart phone or other digital device almost constantly (Lenhart, 2015). This makes it possible for their parents to contact them at any time and inquire as to their whereabouts and activities. According to a national study, 90% of parents of adolescents communicate with them via texting and nearly three fourths via social networking websites (Rudi, Dworkin, Walker, & Doty, 2015). Has electronic monitoring by parents contributed to the decline in adolescents' risky behaviors? This form of parental monitoring has surely increased since 1990, given the rise of technologies that make electronic monitoring easier. However, so far, evidence for this link is scarce, as few studies have examined it. In one study examining the relation between adolescent substance and technology-mediated parental monitoring (texting, e-mail, and social network websites), no relation was found (Rudi & Dworkin, 2018). Nevertheless, there could be another way that the rise of recent media technology has impacted adolescent risk behavior, as detailed next.

Too Busy Texting?

Given the lack of compelling explanations thus far for the decline in American adolescents' risk behavior since 1990, a new hypothesis is needed. Here I provide such a hypothesis. In searching for reasons for the pattern of positive trends described here, if we consider what has changed in the daily environment of young Americans over the past 25 years, the most dramatic change has certainly been the proliferation of media technology. In 1990, there were no smartphones or iPads. Electronic games were just beginning to become popular. Email was still a novelty, and texting did not exist. The internet first became widely available in 1991. Facebook, YouTube, Instagram, Twitter, and Snapchat were yet to come. The most widely used electronic media among adolescents in 1990 were TV and recorded music, each at about 2 hr per day (Arnett, 1995). Throughout the 1990s, adolescents' participation in electronic games and Internet activity rose, and by the early 2000s, their total daily electronic media use had risen to about 5 1/2 hours per day, including about 1 hr per day using computers, mainly for electronic games, reading websites, and instant messaging (Roberts, Foehr, & Rideout, 2005).

Adolescents' media engagement rose further with the advent of smartphones in the 2000s, and today, in the daily environment of America's young "digital natives," media technology is a constant presence. A national study in 2017 found that among 13- to 18-year-olds their total electronic media exposure—including TV, recorded music, use of computers and digital devices, and electronic games—is 9 hr per day (Common Sense Media, 2017). Digital devices are ubiquitous in the lives of American teens; according to national research by the Pew Research Center (Lenhart, 2015), 85% of 13- to 17-year-olds have access to a smart phone, and one fourth say they are online "almost constantly," with an additional 56% going online "several times a day." The same study found that the typical teen sends and receives 30 text messages per day.

Could rising technology use explain the pattern of positive changes among young Americans? Are they too busy with their many media pursuits to have time left over for substance use, unprotected sex, criminal activity, or risky driving? Nine-plus hours a day is an overwhelming proportion of daily life, more than

adolescents devote to school, friends, or family life (although time at school and with friends and family often includes media use). Media researchers have noted the displacement effect of media use, meaning that it crowds out the time and energy that might be devoted to other activities (Valkenburg & Peter, 2007). Perhaps the activities that media use crowds out among American adolescents include a range of risk behaviors.

Currently, researchers are deeply divided in their views of the effects of media on adolescents. The research, and the debate, have centered mainly on the question of whether violent media promote aggression and even violence among the young. The official position of the American Psychological Association (APA) is that media violence causes societal aggression, especially in youth (APA, 2005; Calvert et al., 2017). However, in 2013 a group of 230 media researchers wrote an open letter to the APA requesting that this policy statement be withdrawn because the research evidence does not support it (Consortium of Scholars, 2013). A subsequent APA task force a decade later updated and restated the original findings (Calvert et al., 2017). Notwithstanding this ongoing debate, the overwhelming focus of research has been on investigating media use as promoting rather than reducing violent crime and other varieties of risk behavior (for a recent summary of this claim, see Anderson et al., 2017; for a critique of it, see Ferguson & Beresin, 2017).

The alternative hypothesis is worth investigating further, and worth expanding beyond the narrow focus on violent crime: Is there an inverse relationship between media use and risk behavior among young Americans? Do they use media more, or differently, than older Americans, in ways that explain the declines in their risk behavior? So far, few studies have directly examined the question of whether adolescents' media use could be linked to reduced participation in risk behavior. Among the few studies that have, the focus has been specifically on youthful aggression, as it is in media research more generally (e.g., Breuer, Vogelgesang, Quandt, & Festl, 2015; Decamp, 2015). In one study, Markey, Markey, and French (2015) reported that the release dates of new editions of popular violent video games predicted a subsequent decrease in violent crime rates, suggesting a displacement effect. In the only study to date that has examined media use in relation to a broader range of risk behaviors, Ferguson (2017) found that "screen time" (hours per day watching TV and playing video games) was positively but weakly related to delinquency and unrelated to other risk behaviors including substance use, risky sexual behavior, and risky driving, in a sample of adolescents in Florida. However, this study did not include use of smartphones and social media, which have become the main forms of adolescents' media use (Common Sense Media, 2017). Thus, the question of whether media use, especially the use of smartphones and social media, could be causing a displacement effect that is substantially responsible for broad declines in risk behavior among American adolescents has yet to be investigated.

American adults also have high rates of daily media use, so the influence on risk behavior for adolescents may be less in the total amount of media time than in the social effects of media use in relation to risk behavior. Typically, risk behavior in adolescence is social; unprotected sex, obviously enough, but also crime, substance use, and risky driving usually take place with friends (Dishion, Kim, & Tein, 2015). However to a large extent, the social lives of today's American adolescents have become virtual, in ways that reduce the likelihood of risk behavior. Adolescents who are watching YouTube clips or playing online electronic games with friends while alone in their bedrooms are not simultaneously taking part in the kind of unstructured socializing that is often the launching pad for risk behavior (Hoeben & Weerman,

2016; Johnson, Staff, Patrick, & Schulenberg, 2017; Osgood et al., 1996). In a recent analysis, Baumer and Cundiff (2018) used national *Monitoring the Future* data to show that declines in delinquency and alcohol use since 1991 were best explained by parallel declines in unstructured socializing, including behaviors such as riding around for fun, spending time with friends, and going out in the evening. Other national data show that 15- to 24-year-olds spent 15% time less time socializing on the weekends and holidays in 2016 than they did a decade previously, and that their usage of computers and digital devices increased by 40% over the same period (Tozer, 2017). In both respects, the change was greater at ages 15–24 than in any other age group. Thus, a hypothetical chain of effects can be discerned whereby rising media use among American adolescents since 1990 led to a decline in unstructured socializing, which in turn led to a decline in risk behavior. This is a hypothesis that should be investigated further, across a broad range of risk behaviors.

Summary and Conclusions

The evidence in this article indicates that there has been a profound change in the lives of American adolescents since 1990, for the better. Across numerous domains of risk behavior, the trends have been remarkably favorable. Furthermore, this pattern is specific to American adolescents and does not apply consistently to American adults or to adolescents in other countries. Public policy changes can be identified in each domain that seem to explain declines in risk behavior, but the public policy explanation is insufficient. American parents are closer to their children than they were a generation ago, but it is not clear if this is true for parents of adolescents, nor is there evidence of any link between changes in parenting practices and declines in adolescents' risk behavior. The social functions of daily media use among young Americans provides an alternative explanation, but so far this is only an intriguing hypothesis.

Further investigation of possible explanations is important, not just as an intriguing research question but for its future implications. Despite the favorable changes since 1990, American adolescents' rates of risk behavior remain higher than in other developed countries for unprotected sex and crime. By better understanding the reasons for the decline in recent years, we can develop more informed and effective policies to reduce the rates of these problems further in the years to come.

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