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Road Rules and Rights: The Irreconcilable Pursuits of Adolescent Life, Liberty, . . . and Licensure

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ROAD RULES AND RIGHTS: THE IRRECONCILABLE PURSUITS OF ADOLESCENT LIFE, LIBERTY, . . . AND LICENSURE

Vivian E. Hamilton*

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Car crashes involving teen drivers, in which they are overwhelmingly at fault, kill far more teens each year than any other cause, arguably making driving the greatest public health threat facing U.S. teens. Teens crash at rates far higher than those of older drivers, and the younger the teen driver, the higher the risk—16-year-old drivers have crash rates 250% higher than those of 18-year-olds. Research has established that the differences in crash risk among teens at younger ages results only partly from inexperience; instead, their increased crash risk primarily results from immature regulatory competence that develops only with time, and age. The United States is the earliest-licensing nation in the developed world, moreover, with U.S. teens having a greater risk of being killed or injured in a car crash than their counterparts in other developed nations.

Despite the tremendous costs to public health imposed by adolescent licensure and driving, and their implications for a range of legal and policy issues, neither legal academics working in public health law nor those working in adolescent rights have focused attention on adolescent licensure. This article is thus the first to interrelate research from the social and developmental sciences, and, cognizant of political challenges and constitutional boundaries, make a sustained argument for the most effectual legal reforms to which it inexorably points.

INTRODUCTION

Car crashes involving teen drivers, in which they are overwhelmingly at fault, kill far more teens each year than any other cause. The next three leading causes of teen death—homicides, suicides, and cancer-related illness—trail only distantly. Decades of

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2 Bridie Scott-Parker et al., “They're Lunatics on the Road”: Exploring the *Normative Influences of Parents, Friends, and Police on Young Novices’ Risky Driving Decisions*, 50 SAFETY SCIENCE 1917, 1917 (2012) [hereinafter *Normative Influences*]. In 2009, 3,487 13-19-year-olds died in motor-vehicle crashes, 2,027 died as a result of homicides, 1,852 as a result of suicides, and 827 from malignant neoplasms, or cancers. *Id.* See also, Dara R. Blachman & David Abrams, *Behavioral and Social Science*
law reform efforts led to an assortment of state laws that mandated seatbelt use, increased the legal drinking age, and imposed graduated licensing systems. Graduated licensing requires beginning drivers to first acquire a learner's permit allowing only supervised driving for a set period, followed by a period of provisional licensure allowing unsupervised driving subject to restrictions (such as limits on nighttime driving or carrying unrelated teenaged passengers), and only then extending full licensure. Despite these legislative efforts, however, traffic fatalities still account for nearly 40% of all deaths of 16-19 year-olds, arguably making driving the greatest public health threat facing U.S. teens.

It is widely known that teen drivers crash at higher rates than do older drivers—as a group, teens crash at four times the rate for drivers aged 20 and over. Less emphasized, however, are the dramatic differences in the crash rates of teens of different ages. Indeed, younger teens crash at rates significantly higher than do older teens, irrespective of driving experience. By far the highest crash rates are those of 16-year-olds (250% higher than that for 18-year-olds), followed by 17-year-olds (50% higher than that for 18-year-olds).

States’ adoption of 16 as the presumptive age of licensure has made the United States the earliest-licensing nation in the developed world. U.S. teens, who acquire licenses to drive at younger ages and


See infra Part I.B.


Braitman et al., supra note __, at 47. This statistic reports crash rates per mile driven. Id. See also, A. James McKnight & A. Scott McKnight, Young Novice Drivers: Careless or Clueless?, 35 Accident Analysis & Prevention 921, 921 (2003); Shope et al., supra note __, at s.261.


Seven states license prior to age 16 (Idaho, Montana, New Mexico, North Dakota, South Dakota, and South Carolina): the majority of states—thirty-six—allow learner’s permits prior to age 16, but not licenses: nine states allow learner’s permits only at age 16 (Connecticut, Delaware, District of Columbia, Kentucky, Massachusetts, New Jersey, New York, Pennsylvania, and Rhode Island.). Allan F. Williams & Julie
with less experience than do young people in other countries, thus also have a greater risk of being injured or killed in a car crash than do their counterparts in other developed nations, including Australia, Canada, and the nations of the European Union (E.U.).

The regulatory systems implemented to govern teen licensure, as with many governmental responses to widespread and entrenched public health problems, necessarily have effects beyond those primarily intended—i.e., reducing teen crash risk and increasing public safety. Licensure regulations implicate public health law and the appropriate balance between federal- and state-level legal responses with which it grapples; their requirements and restrictions can alter the rights of parents, whose entitlement to direct their children’s upbringing and presumptive status as protectors of their adolescent children’s well-being receives constitutional protection; and of course for young people themselves, these regulatory systems determine whether and the circumstances under which they will exercise the driving privilege, which has taken on considerable cultural significance and serves useful (some would argue, vital) economic and social functions.

Regulations’ effects on each of these intersecting spheres recently converged in Trautman v. Christie, in which parents challenged on behalf of their teen children a New Jersey law requiring drivers under 21 to display a decal on the car identifying them as young drivers subject to various restrictions. The law aimed to increase young driver compliance with and facilitate police enforcement of these restrictions, which include limits on nighttime driving and carrying passengers. The challenge argued that the law was preempted by a federal statute protecting drivers’ privacy rights, violated equal protection rights guaranteed by both the federal and state constitutions, and constituted an unconstitutional search and seizure. The attorney

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8 NAT'L RES. COUNC., PREVENTING TEEN MOTOR CRASHES supra note __, at 1. Although the risk of crash-related injury and death is lower, crashes are the leading cause of teen death and injury in these nations as well. Melanie J., White, et al., Young Drivers’ Optimism Bias for Accident Risk and Driving Skill: Accountability and Insight Experience Manipulations, 43 ACCIDENT ANALYSIS & PREVENTION 1309, 1309 (2011).


10 NEW JERSEY TEEN DRIVER STUDY COMMISSION, TEEN DRIVER STUDY COMMISSION RECOMMENDATION REPORT (Trenton, N.J. 2008).

who brought and argued the case before the court was the father of a teenage daughter concerned that the decals would increase the likelihood of teens’ being profiled by police or targeted by sexual predators.12 Many New Jersey parents shared his concern and thus resisted the regulation, convinced that they, better than the state, could determine how best to protect their children.13 Finally, the headline of a N.Y. Times article reporting the New Jersey decision and other restrictions on teen driving illustrated the stakes for young citizens themselves, announcing with what can only be described as empathetic dismay that the state’s Youth Driving Laws Limit Even the Double Date.14 In August 2012, the New Jersey Supreme Court rejected the challenge and upheld the statue.15

Despite the tremendous costs to public health and the implications for a wide range of legal and policy issues, neither legal academics working in the area of public health law nor those working in adolescent rights have focused attention on adolescent licensure.16
While this academic inattention might be explained, it can no longer be justified nor excused.\textsuperscript{17}

A growing and consistent body of cross-disciplinary research has delineated the nature and scope of the young driver problem and gone far to identify the most significant factors—which can broadly be categorized as inexperience-related and development-related—that distinguish adolescent from older drivers. To most effectively address this critical public health issue, regulatory structures must take account of the accumulated contributions from this research and analysis. Law reform efforts to date have had limited success not only because they have only imperfectly taken account of this research, but also because they have been politically tentative, scattered, and piecemeal.

This Article is thus the first to interrelate research from the social and developmental sciences (public health, applied, behavioral, cognitive, developmental, and social psychology, developmental neuroscience, and traffic safety) and, cognizant of political challenges and constitutional boundaries, make a sustained argument for the most effectual legal reforms to which it inexorably points.

To that end, it proceeds in three Parts. Part I places the issue of adolescent licensure and driving in social, legal, and cultural context. It begins with a survey of the nature and public health implications of teen crashes, particularly the disproportionate number of crashes caused by adolescent drivers aged 16-17. It then traces the evolution of state regulation and assesses the current regulatory landscape, and it concludes by describing how licensure and driving have assumed powerful cultural meanings and social functions wholly apart from any utilitarian transportation function.

Insights from adolescent development and learning theory help explain the observed characteristics of adolescent driving and the contextual influences that affect it, for better and for worse. Part II interrelates this cross-disciplinary research, laying the evidentiary foundations for the recommendations made in the final Part. It examines research that aims to distinguish the development-related causes of adolescent crash risk from experience-related causes and explains how these aspects of development are normative and not susceptible to change through external interventions, such as education.


\textsuperscript{17} Abortion, for example, implicates constitutionally-protected intimate choices and involves a hotly-debated moral issue: driving does not (although undoubtedly some adolescents seem to view driving with near-religious reverence and fervor).
Part III argues for the only regulatory adjustment capable of effectively eliminating the leading cause of adolescent death—raising the minimum unsupervised driving age. It also draws on learning theory to suggest retaining (or lowering) the age of learner’s licensure (the age at which adolescents may drive under adult supervision). It provides set of interventions short of raising the age of licensure that would provide some benefit. Finally, it anticipates and aims to meet political and legal objections.

I. ADOLESCENT DRIVING IN CONTEXT

Empirical data reveal the nature and scope of the risk that young drivers pose to themselves, their passengers, and all who share the roadways with them. Comprehensive data gathering has only in recent decades provided reliable statistical evidence of teen crashes and crash-related fatalities, yet long before such data became available, the fact that teen drivers pose heightened crash risk was widely recognized.18 A 1909 article published in a popular magazine, for example, observed that “the great problem of the automobile is recklessness, . . . especially in the young, who are to such a great degree attracted by the pleasures of motoring.”19 To mitigate the dangers posed by immature drivers, states imposed minimum age and other requirements for licensure. This Part chronicles the evolution of relevant aspects of state licensure and regulatory structures and analyzes their relative successes and failures.

In addition to serving basic transportation functions, driving has also become imbued with cultural significance and serves social functions wholly unrelated to transportation. This Part thus concludes with an examination of the socio-cultural meanings and functions of driving and their particular salience for adolescents. Doing so provides a fuller understanding of adolescent licensure and brings into sharper focus what it is that may be lost if states were to further constrict or withdraw from adolescents altogether the entitlement to early licensure.

18 J.A. Groeger, Youthfulness, Inexperience, and Sleep Loss: The Problems Young Drivers Face and Those They Pose for Us, 12 IJNURY PREVENTION (SUPP. I) S.i.19 (2006). “[T]he ‘young driver problem’ has been with us, in whichever country we live, for as long as substantial numbers of those in their teens have driven motor vehicles.” Id. at S.i.19.

A brief definition of terms is in order: “Teen” here will denote a category of individuals defined by chronological age—those 13-19; “adolescence” will denote a category defined by developmental stage—that between childhood and adulthood, generally spanning ages 12-17; and “emerging adulthood” will denote the developmental stage between adolescence and adulthood generally spanning ages 18-24.\footnote{See Charles Geier & Beatriz Luna, The Maturation of Incentive Processing and Cognitive Control, 93 PHARM., BIOCHEM. \\& BEHAV. 212, 213 (2009).}

A. Public Health Context

In an effort to reduce teen injuries and fatalities, states over the last several decades (often prodded by the promise of federal monies) have adopted seatbelt laws, increased the legal drinking age, and imposed additional requirements for early licensure.\footnote{Nat’l Res. Counc., Preventing Teen Motor Crashes, supra note __, at 2.} These efforts, along with improved vehicle safety, have had positive effects. The crash-related death rate for 15-19-year-olds, after peaking in 1970 at 43.6, then began to decline—first modestly, reaching 43 in 1980, then significantly, to 33.1 by 1990. In the years following 1990, however, the teen death rate declined modestly but has since plateaued—reaching 26.0 2000, 23.3 in 2006, then remaining at 22.0 in the years that followed.\footnote{National Center for Health Statistics, Health, United States, 2010: With Special Feature on Death and Dying 175-76, Table 37, Death Rates for Motor Vehicle-Related Injuries, by Sex, Race, Hispanic Origin, and Age: United States, Selected Years 1950-2007 (2011) [hereinafter Nat’l Ctr. Health Stat., Health 2010]. Researchers calculate crash rates using different methods, all of which portray crash prevalence based on some unit of exposure. Global levels of exposure include, e.g., population size or total vehicle miles driven. Individual levels of exposure, which are more difficult to obtain, can include person-miles driven or time spent driving. No single measure can provide a truly comprehensive depiction of crashes; instead, each provides different information. Shope & Bingham, supra note __, at s.262. In population-based rates, researchers can control for changes in population sizes between groups across years. Id. One factor that remains unaccounted for, however, is the potential change over time in the amount of driving done by individuals in a given group. Thus if male teens drove on average 50 miles/week in 1975 but 200 miles/week in 2000, a crash rate that remain unchanged or even increased slightly may indicate an increase, rather than a decrease, in safety. For this reason, as well as for concision, this Article will generally report rates per person-mile driven.} Table 1 graphically depicts this trend.
Crashes involving teen drivers also impose significant economic costs, which exceeded $40 billion annually even a decade ago. In addition to the direct costs of health care and rehabilitation services, individuals and families absorb the indirect costs of injuries and deaths—the loss of earnings and household services otherwise contributed by those injured, the costs of caring for injured or disabled family members, and frequently, the loss of earnings of non-injured family members who must reallocate their time from market to caregiving work.

The following sections first describe the crash involvement of teen drivers generally, then focus more closely on the crash involvement of teens of different ages.

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23 Nat’l Ctr. Health Stat., Health 2010, supra note __, at 176, Table 37; Shope & Bingham, supra note __, at s.282.

24 World Health Organization, Youth and Road Safety, supra note __, at 8 (citing Transport Research Centre, Young Drivers: The Road to Safety (OECD/ECMT 2006)). In 2002, motor-vehicle crashes involving 15-20-year-old drivers cost the United States approximately $41 billion. Id.

25 W.H.O., Youth and Road Safety, supra note __, at 7-8.
1. An Anatomy of the Crash Involvement of Teen Drivers

As noted above, teen drivers aged 16-19 crash at rates four times higher than those 20 and older. This group of teen drivers also has nearly three times the fatal crash rate per mile driven. Despite prevention efforts, an estimated 48 thousand 16-19-year-olds will die in car crashes between 2003 to 2012, and well over 2 million more will suffer crash-related injuries. Even higher numbers of non-teenaged drivers, passengers, and pedestrians, moreover, are injured or killed each year in crashes caused by teen drivers.

Teen passenger fatalities. Teen crash and fatality rates are highest when young drivers carry peer passengers. Indeed, the combination of young driver/young passengers is more likely to cause crashes than any other combination of driver-passenger group.

Most teenage passenger deaths occur when other teenagers are driving. The percentage of passenger deaths occurring in vehicles driven by other teenagers begins to increase at age 13, reaches 66% by age 15, and peaks at age 16, with 74% of 16-year-old passenger deaths occurring in vehicles driven by other teenagers. Recent studies have

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26 Braitman et al., supra note __, at 47.
28 NAT'L RES. COUNC., PREVENTING TEEN MOTOR CRASHES, supra note __ at 6-7 (reporting analysis based on calculations from the Fatality Analysis Reporting System). In 2004 alone, for example, more than 300 thousand 15-20-year-olds were injured in collisions. Id.
29 NAT'L RES. COUNC., PREVENTING TEEN MOTOR CRASHES, supra note __, at 7. In crashes leading to fatalities, twice as many non-drivers as drivers (i.e., passengers or individuals traveling in other vehicles) lose their lives, as a majority of all drivers survive crashes in which there are fatalities. Williams & Tison, supra note __, at 4.
32 Id. at 5. In 2010, 59% of 13-19-year-old passengers killed died in vehicles driven by another teenager. Id.
33 Williams & Tison, supra note __, at 7. For 17-year-olds, 70% of passenger deaths occur in cars driven by other teens. Id.
found the death rate for teenage passengers to be higher than for passengers of all other age groups combined.\textsuperscript{34}

\textit{Single- vs. multiple-vehicle crashes.} Young drivers are overrepresented in single-vehicle crashes, which tend to cause more severe injuries than do multiple-vehicle crashes.\textsuperscript{35} Young drivers living outside of cities are less likely to crash overall compared to young urban drivers, but they are at greater risk of more serious, single-vehicle crashes.\textsuperscript{36} One study of newly-licensed teen drivers in Connecticut found that, in the crashes in which the teenagers were at fault (75\% of the crashes in which they were involved), 39\% occurred when the driver ran off the road, 31\% involved rear-ending another vehicle, and 20\% involved violating another car’s right-of-way.\textsuperscript{37}

\textit{Gender.} The crash rates for both female and male young drivers are significantly higher than for older drivers. Crash risk differs by gender, however, at most ages. Young and middle-aged males both have historically had approximately 60\% higher rates of traffic violations, car crashes, and fatal car crashes, than their female counterparts.\textsuperscript{38} The difference between the crash rates of male and female teens has tended to be even greater, with male teens having much higher rates.\textsuperscript{39} The gap between the crash rates of male and female teens has narrowed somewhat over time, but it remains significant.\textsuperscript{40} For female adolescents, the overall crash rate per mile driven is currently about

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\textsuperscript{35} H.Y. Chen et al., \textit{Risk and Type of Crash Among Young Drivers by Rurality of Residence: Findings from the DRIVE Study}, 41 ACCIDENT ANALYSIS AND PREVENTION 676, 679 (2009).
\textsuperscript{36} Id. at 681.
\textsuperscript{37} Braitman et al., \textit{supra} note __, at 50.
\textsuperscript{38} Arnett, \textit{supra} note __ at S.ii.19; Carol Holland, Jennifer Geraghty, \& Kruti Shah, \textit{Differential Moderating Effect of Locus of Control on Effect of Driving Experience in Young Male and Female Drivers}, 48 PERSONALITY \& INDIVIDUAL DIFFERENCES 821, 821 (2010).
\textsuperscript{39} NAT'l RES. COUNC., \textit{PREVENTING TEEN MOTOR CRASHES}, \textit{supra} note __ at 6-7.
\textsuperscript{40} Id. The problem of young male driver fatalities exists in other developed nations, as well. In Queensland, Australia, for example, 81\% of all 17-24-year-old drivers killed in car crashes in 2010 were male. Bridie Scott-Parker et al., \textit{Speeding by Young Novice Drivers: What Can Personal Characteristics and Psychosocial Theory Add to Our Understanding?}, [in press] \textit{ACCIDENT ANALYSIS \& PREVENTION} (2012), \url{http://dx.doi.org/10.1016/j.aap.201204.010} at 2 [hereinafter Scott-Parker et al., \textit{Speeding by Young Novice Drivers}].
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three times as high as the rate for older drivers; for male adolescents, the rate is six times as high.\textsuperscript{41}

2. \textit{Sixteen- and Seventeen-Year-Old Adolescent vs. Older Teen Drivers}

Large-scale studies of novice drivers (i.e., those in the first two years of licensure permitting unsupervised driving)\textsuperscript{42} aged 16 and older have found crash rates consistently highest among 16-year-olds, declining substantially with each year of increasing age.\textsuperscript{43} Crash rates in general decline with both maturity (estimated in terms of chronological age) and experience (measured by miles driven).\textsuperscript{44} As a group, all novice drivers have higher crash rates than do more experienced drivers.\textsuperscript{45} At each month of driving experience, however, younger novices have significantly higher crash rates than do older novices.\textsuperscript{46} In the first few months of driving, young novices’ crash rate is

\textsuperscript{41} Laird, \textit{supra} note __, at 311 (comparing adolescent crash rates with those for drivers aged 30–59).

\textsuperscript{42} See Nils Petter Gregersen et al., \textit{Accident Involvement Among Learner Drivers—an Analysis of the Consequences of Supervised Practice}, 35 \textit{ACCIDENT ANALYSIS \& PREVENTION} 725, 727 (2003) [hereinafter Gregersen et al., \textit{Accident Involvement Among Learner Drivers}]; Daniel R. Mayhew et al., \textit{Changes in Collision Rates Among Novice Drivers During the First Months of Driving}, 35 \textit{ACCIDENT ANALYSIS \& PREVENTION} 683, 684 (2003) [hereinafter \textit{Changes in Collision Rates}].


\textsuperscript{44} McKnight & McKnight, \textit{supra} note __, at 921.

\textsuperscript{45} \textit{Id}.

twice that of older novices.\textsuperscript{47} The gap then narrows over time, but a 45% difference in crash rates persists even after two years of licensure.\textsuperscript{48}

Increasingly-refined studies have found that age-related factors predominate in the younger ages of adolescence, then decline relative to experience.\textsuperscript{49} The crash risk for 15-year-old beginners is much higher than that for 17-year-old beginners, but 18-year-old-beginners have only a slightly higher crash risk than 20-year-old beginners.\textsuperscript{50} In other words, at younger ages, driving inexperience plays a role, but a secondary one.\textsuperscript{51} At later ages, different levels of driving experience account for more of the differences in crash rates.\textsuperscript{52} Crash rates are thus consistently highest for the youngest novice drivers, for whom age- and development-related factors compound the risk related to their driving inexperience.\textsuperscript{53}

Daniel Mayhew of the Traffic Injury Research Foundation and colleagues, in an article tracing the historical evolution of the presumptive age of licensure, concluded that states’ widespread adoption of age 16 as the minimum licensing age has “had a significant and unfortunately negative impact on road safety in terms of premature death and injury among 16- and 17-year-olds in North America for many decades.”\textsuperscript{54} Canada, for example, lowered its age of licensure from

\textsuperscript{47} Daniel R. Mayhew et al., Changes in Collision Rates Among Novice Drivers During the First Months of Driving, 35 ACCIDENT ANALYSIS & PREVENTION 683, 684-85 (2003) [hereinafter Mayhew et al., Collision Rates Among Novice Drivers] (reporting crash rates of 114 per 10,000 young novice drivers compared to 56 per 10,000 older novice drivers).

\textsuperscript{48} Mayhew et al., Collision Rates Among Novice Drivers, supra note \_\_, at 684-85 (reporting that young novices’ crash rates drop to 49 per 10,000 drivers after two years, compared to 27 per 10,000 for older novices).

\textsuperscript{49} Nils Petter Gregersen & Per Bjurulf, Young Novice Drivers: Towards a Model of Their Accident Involvement, 28 ACCIDENT ANALYSIS & PREVENTION 229, 231 (1996).

\textsuperscript{50} Id.

\textsuperscript{51} Groeger, supra note \_\_, at S.i.19; Allan F. Williams, Young Driver Risk Factors: Successful and Unsuccessful Approaches for Dealing with Them and an Agenda for the Future, 12 INJURY PREVENTION (Supp. 1), S.i.4 (2006) [hereinafter Williams, Young Driver Risk Factors].

\textsuperscript{52} Williams, Young Driver Risk Factors, supra note \_\_, at S.i.4.

\textsuperscript{53} Braitman et al., supra note \_\_, at 47. Consistent with other researchers’ findings, Braitman et al. conclude that “[t]he initial level of risk is . . . reduced with higher licensing age, showing that other, age-influenced aspects are also [along with experience] of importance.” Id. See also, Gregersen & Bjurulf, supra note \_\_, at 231.

\textsuperscript{54} Daniel R. Mayhew et al., Why 16? (Insurance Institute for Highway Safety, Arlington, Va.) August 2000, at 2 [hereinafter Mayhew et al., Why 16?]. Mayhew, Senior Vice President of the Traffic Injury Research Foundation, has studied and
18 to 16 in the 1960s, and researchers estimate that the move increased accident involvement among new drivers by 12% and new-driver fatalities by 24%.

Empirical research thus demonstrates that some part of adolescent driving risk stems from lack of skill, but that the greater part of that risk stems from normative developmental factors that correlate with age. Part II draws on learning theory and research in adolescent development to help explain this evidence. I conclude that some experience-related driving risk may be ameliorated through education programs or other interventions, but that development-related driving risk cannot.

B. Regulatory Context

This section chronicles states’ adoption of general licensure requirements, the emergence of 16 as the presumptive age of licensure, and the implementation, beginning in the late 1990s, of graduated licensing systems. I argue that, given the overwhelming evidence of the high crash and fatality rates of young drivers, comprehensive regulatory efforts to rein in the young driver problem came inexplicably late and remain profoundly insufficient.

1. Legal History and the Emergence of the Presumptive Age of Licensure

States largely left passenger cars and their drivers unregulated until the early 20th century, when the proliferation of cars on roadways not designed to handle them led to pollution, noise, collisions, and growing numbers of casualties. States initially addressed the growing published research on road safety and young drivers for more than three decades. See http://www.tirf.ca/about/2012_bios_danm.pdf.

Gregersen & Bjurulf, supra note __, at 231. Canada lowered its age of licensure in 1962. Id.

Simpson, supra note __, at 27.

John A. Heitmann, The Automobile and American Life 19 (2009); Mayhew, et al., Why 16?, supra note __, at 10. At the beginning of the 20th century, new automotive manufacturing techniques accelerated production and fueled an exponential growth in automobile ownership. Cars powered by internal combustion engines had been available by the end of the 19th century, but labor-intensive production processes limited their availability. Id. From 1907 to 1920, the number of motor-vehicle related
problems by imposing speed limits, requiring safety-enhancing features such as brakes and headlights, and to improve compliance and assist with enforcement, imposing car registration requirements.\textsuperscript{58}

Northeastern and more urbanized states were the first to require that all drivers be licensed.\textsuperscript{59} Other states followed, although a few (mostly rural) states imposed no general licensure requirements at all until the 1950s.\textsuperscript{60} The earliest licensure laws generally included no minimum age restrictions, but states soon recognized that younger drivers posed a greater threat to public safety than did older drivers.\textsuperscript{61} Pennsylvania’s 1909 law was the first to contain provisions aimed at younger drivers, requiring those under 18 to obtain a special license.\textsuperscript{62} A few states passed laws prohibiting individuals below a minimum age—usually 18—from driving, even before enacting general licensure requirements.\textsuperscript{63} In the 1920s, states began introducing "junior operator" licenses akin to today’s learner’s permits and provisional licenses, allowing 16- and 17-year-olds to drive only with adult supervision or subject to other restrictions.\textsuperscript{64}

The needs of agricultural communities led many farm states to adopt lower minimum licensing ages—typically 14, 15, or 16.\textsuperscript{65} Agricultural families relied on the labor of their younger adolescents and thus received exemptions from child labor laws.\textsuperscript{66} Mayhew and colleagues have noted that many child labor laws permitted teens aged

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\textsuperscript{58} Abbott, \textit{supra} note __, at 614-15.
\textsuperscript{59} Mayhew et al., \textit{Why 16?}, \textit{supra} note __, at 4. Licensure requirements for drivers came later, and initially applied only to paid chauffeurs (who were believed to have less incentive to drive carefully than did car owners themselves). These licensing procedures generally included an examination of the driver’s technical knowledge of a car’s mechanism and in some cases, a road test. Abbott, \textit{supra} note __, at 615-16. Massachusetts and Missouri introduced licensure requirements in 1903. \textit{Id}.
\textsuperscript{60} Mayhew et al., \textit{Why 16?}, \textit{supra} note __, at 4. South Dakota was the last state to enact a general licensure law, doing so in 1954. \textit{Id}.
\textsuperscript{61} \textit{Id}. at 6-7, 18.
\textsuperscript{62} \textit{Id}. at 6. New York followed in 1910. \textit{Id}. at 5, Table 1, \textit{License Requirement and Minimum Age by Year}.
\textsuperscript{63} \textit{Id}. at 6.
\textsuperscript{64} \textit{Id}. at 7. New York’s statute provided, for example, that “[n]o person shall operate or drive a motor vehicle who is under eighteen years of age, unless such person in accompanied by a duly licensed chauffeur or the owner of the motor vehicle being operated.” N.Y. Highway Law § 282(2).
\textsuperscript{65} Mayhew et al., \textit{Why 16?}, \textit{supra} note __, at 7, 9-10. Some states also legislated exceptions to minimum age requirements that allowed younger persons to operate farm vehicles. \textit{Id}. at 14.
\textsuperscript{66} \textit{Id}. at 14.
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14-16 and those aged 16-18 to perform certain defined categories of work (generally prohibiting those younger than 14 from working), which may explain these states’ eventual convergence on age 16 as the minimum age of licensure.\textsuperscript{67}

In 1926, the National Conference for Street Highway Safety promulgated the Uniform Vehicle Code, recommending age 16 as the minimum age for licensure but requiring parental consent in order for minors to obtain a license.\textsuperscript{68} Courts held further that parents who allowed adolescents to drive in violation of statutory minimum age requirements themselves acted negligently and thus could—in an exception to the general rule that a person is not liable in tort for the negligence of another, even a family member—be held liable for the injuries subsequently caused by their children’s negligent vehicle operation.\textsuperscript{69} Lawmakers thus hoped that parental control would serve as an additional safeguard against potential risks posed by immature or incompetent minor drivers.\textsuperscript{70}

Influenced perhaps by both the Uniform Code and the trend among states, most states that introduced minimum licensure ages in the 1920s set their licensing age at 16.\textsuperscript{71} Less than ten years after adopting the first Uniform Code, however, the National Conference amended its age-related provisions, acknowledging that a better approach would take account of state-specific factors—e.g., in-state crash records of minors, the types of hazards present on the state’s highways, or other conditions particular to the state.\textsuperscript{72} State legislatures declined to revisit the issue, though, retaining their pre-

\textsuperscript{67} Id. at 10. Even before Congress enacted the Fair Labor Standards Act in 1938, state legislatures, acting on the general growing concern for children and adolescents ascendant in the early 20th century, enacted child labor laws to protect children from employment deemed abusive or otherwise harmful to them. Child labor laws in turn influenced other social legislation. \textit{Id.} at 9-10.

\textsuperscript{68} Id. at 10. The Second National Conference for Street Highway Safety adopted the Uniform Vehicle Code in 1926. J.P. Economos, \textit{Driver Licensing and the Court, 17 Traffic Digest & Rev.} \textit{6} (1969). The Code provided that “an operator’s license shall not be issued to any person under the age of 16 years, and no chauffeur’s license shall be issued to any person under the age of 18 years.” Mayhew et al., \textit{Why 16?}, \textit{supra note} \_\_\_, at 13. It also stated that “the Department shall not grant the application of any minor under the age of 18 years for an operator’s license unless such application is signed by the father of the applicant.” \textit{Id.}

\textsuperscript{69} See, e.g., Schultz v. Morrison, 91 Misc. 248, 250-51 (N.Y. 1915) (holding that “[w]hile the relation of parent and child does not render the parent liable for the torts of the child, nevertheless a parent may become liable for an injury caused by the child ‘where the parent’s negligence made it possible for the child to cause the injury’”).

\textsuperscript{70} Mayhew et al., \textit{Why 16?}, \textit{supra note} \_\_\_ at 14-15.

\textsuperscript{71} Id. at 10.

\textsuperscript{72} Id. at 13.
established minimum ages of licensure through the 20th century—16 for most, 14 or 15 in a few, and in the State of New Jersey only, 17.73

2. Conventional Licensing and the Failure of Traditional Driver Education

For much of the 20th century, obtaining a license was quick and easy. Most states simply required that applicants pass a license exam and a road test. The exams generally tested only basic knowledge of traffic rules, and the road tests required that drivers demonstrate merely a minimal level of competency in operating a vehicle. 74 Successful applicants immediately received full licensure—i.e., the entitlement to drive without supervision or other age- or experience-related restrictions.75

Conventional licensing systems began providing for learner’s permit so that beginning drivers might gain practice prior to applying for licensure, but many have not historically required a permit as a precondition for full licensure.76

Learner’s Permit. Some states quickly recognized the need for learning drivers to practice in order to attain the skills required for competent driving and adopted provisions allowing unlicensed drivers to operate vehicles under supervision.77 All states eventually provided for learner’s permits but most made them optional, and applicants could choose to bypass the learner’s stage and apply immediately for full licensure.78 Some states began to require applicants to first obtain a learner’s permit, but most of these imposed no mandatory time

73 Id; Allan F. Williams, Young Driver Risk Factors: Successful and Unsuccessful Approaches for Dealing with Them and an Agenda for the Future, 12 INJURY PREVENTION (Supp. 1) S.i5 (2006) (internal citations omitted) [hereinafter Williams, Young Driver Risk Factors]. See also, Allan F. Williams & Daniel R. Mayhew, Graduated Licensing and Beyond, 35 AM. J. OF PREVENTIVE MEDICINE (Supp. 3) S.iii.324, S.iii.324 (2008).
74 Simpson, supra note __, at 26.
75 Simpson, supra note __, at 26.
76 Simpson, supra note __, at 26.
77 See, e.g., Bourne v. Whitman, 95 N.E. 404, 405 (Mass. 1911) (noting that learner’s provisions “provide an opportunity for persons to learn to use an automobile by running it under the supervision of a licensed person, and thus acquire skill by practice, without which one never could become skillful.”).
78 Simpson, supra note __, at 26. Williams, Young Driver Risk Factors, supra note __ at S.i.5.
requirement for holding it; beginners could choose to take a road test for a regular license very soon (or immediately) after receiving their learner's permits.\footnote{Simpson, supra note \_\_, at 26.}

Today, every state permits adolescents to acquire learners' permits by ages 14-16, with parental consent, and most require they be held for some minimum period (from 60 days to a year) prior to applying for licensure.\footnote{Mayhew et al., Why 16?, supra note \_\_, at 14.}

Probationary licensing. In an attempt to curb the high crash rates of novice drivers, several states modified their conventional licensing systems by adding an intermediate, probationary licensure stage preceding full licensure.\footnote{Simpson, supra note \_\_, at 26.} During the period of probationary licensure, novice drivers who commit violations are subjected to more severe penalties (generally fines or license suspension) than would apply to regularly licensed drivers.\footnote{Id.} The threat of punishment ostensibly encourages safer driving habits, and evaluations of probationary licensing systems have found them to have modest positive effects.\footnote{Id.; Williams, Young Driver Risk Factors, supra note \_\_, at S.i.5; Williams & Mayhew, supra note \_\_, at S.324.} Critics have argued that probationary licensing nonetheless fails to assist drivers whose errors reflect lack of skill rather than intentional disregard for safe driving rules. For these drivers, they argue, a suspension further reducing driving practice may be counterproductive; and to the extent that poor driving skill has already resulted in a crash, remedial action comes too late.\footnote{Simpson, supra note \_\_, at 26.}

Provisional licensing. As with probationary licensing, states have adopted an intermediate provisional licensure stage in an effort to lower the crash risks for novice drivers. Rather than imposing increased penalties following driving infractions, however, provisional licenses operate by imposing antecedent limits on novice drivers' privileges.\footnote{Simpson, supra note \_\_, at 26.} Restrictions on licensure during the provisional stage most commonly include nighttime driving restrictions and passenger restrictions.\footnote{Simpson, supra note \_\_, at 26.} The same sorts of restrictions constitute one component of the more recently adopted graduated licensing systems adopted by states.
Formal Driver Education. Many states introduced formal driver education programs in the early- to mid-20th century as a way to improve young drivers’ skills and safety. In most of these, completing a driver education program was a prerequisite for 16- and 17-year-olds’ obtaining licensure. Those who did not complete a driver education program were required to wait until age 18 before seeking licensure.\footnote{Mayhew et al., \textit{Why 16?}, supra note __, at 16.}

The demand for driver education exploded in the 1950s and 1960s. The private insurance industry, believing driver education to be a potential crash reduction measure, offered discounts to students who completed driver education, and the federal government began providing funds to states that offered driver education.\footnote{Id.} Along with the state statutes conditioning minors’ licensure on the successful completion of high school driver education, these developments led to the proliferation of high school driver education courses throughout the United States.\footnote{Id.}

Evaluations of driver education programs in the decades that followed, however, consistently found that they failed to reduce driver crash risk.\footnote{Williams & Mayhew, \textit{supra note __}, at S.324.} Researchers have attributed their lack of success to the short duration of the courses, their focus on only the most basic skills, and their reliance on unsophisticated safety messages easily superseded by other social influences.\footnote{Williams, \textit{Young Driver Risk Factors}, \textit{supra note __}, at S.15.}

Even more troubling than the failure of driver education to reduce crash and fatality risk were findings that, by enabling earlier licensure, driver education appeared to have\textit{ increased} the number and risk of crashes for young drivers.\footnote{Society for Adolescent Medicine, \textit{Driver Education: Position Paper of the Society for Adolescent Medicine}, 21 J. of Adolescent Health 416, 416 (1997) (arguing for the repeal of legislation providing for earlier licensure for adolescents who have completed a driver education course).} Students who completed driver education programs were more likely to obtain driver licenses, be in car crashes, and incur traffic violations than students who did not participate in driver education.\footnote{Id. at 417.} Driver education also had the unintended effect of exacerbating young drivers’ optimism bias—i.e., an unfounded belief that one is more skilled and less likely to experience a collision than one’s peers—potentially because participants in training
programs overestimate the skills gained from the program.\textsuperscript{94} Drivers’ optimism bias correlates with overconfidence and risk taking.\textsuperscript{95} By greatly increasing the number of young licensed drivers without decreasing their crash rates, the net effect of driver education was a much higher adolescent traffic fatality rate.\textsuperscript{96} Following the publication of these consistently disappointing research findings, the federal government withdrew funding for driver education programs, and their popularity and availability decreased significantly.\textsuperscript{97}

3. \textit{Graduated Driver Licensing and Its (Relative) Success}

After a pair of 1971 studies of North Carolina drivers found younger drivers to be particularly overrepresented in crashes at night and when driving with passengers, transportation safety researchers proposed a licensing system whose goal was to enable new drivers to gain driving experience under conditions that minimized their exposure to risk.\textsuperscript{98} The proposed system accordingly permitted beginners initially to drive only under restricted, low-risk, supervised conditions but prohibited them from driving in contexts that predictably increased their crash risk. The restrictions would lift as the driver gained experience.\textsuperscript{99} The proposed system, known as Graduated Driver Licensing (GDL) was not particularly radical, and it typically combines elements of learner’s, probationary, and provisional licensure. (Each state has adopted its own version of GDL—some are comprehensive and include each of its primary elements, others only limited aspects of it.) As conceived and proposed by researchers, the system comprises three

\textsuperscript{94} White et al., \textit{supra} note __, at 1310.
\textsuperscript{95} Chris G. Sibley & Niki Harré, \textit{A Gender Role Socialization Model of Explicit and Implicit Biases in Driving Self-Enhancement}, F12 \textit{TRANSPORTATION RESEARCH} 452, 459 (2009) [hereinafter Sibley & Harré, \textit{Gender Role Socialization Model}].
\textsuperscript{96} \textit{Id}.
\textsuperscript{97} Mayhew et al., \textit{Why 16?} \textit{supra} note __, at 16. The National Highway Traffic Safety Administration abandoned driver education as a priority by 1982. \textit{Id}.
phases of licensure—the learner’s permit, a provisional license, and full licensure\textsuperscript{100}

The first phase of GDL is the learner-permit phase, which involves a period of supervised driving. Unlike the learner-permit provisions of many conventional systems, however, the learner permit in a GDL system is mandatory and must be held for a minimum period of time, from several months to a year.\textsuperscript{101} To help ensure that learners have acquired some minimum level of driving practice, some states require parents to verify that the learner has completed a requisite number of supervised-practice hours.\textsuperscript{102}

Second, after holding a learner’s permit for a statutorily-prescribed period of time and completing the set number of practice hours where required, novice drivers may obtain provisional licenses. Like the provisional licensure requirements in conventional systems, the GDL provisional license permit unsupervised driving but imposes restrictions aimed at reducing the novice’s exposure to hazardous driving contexts.\textsuperscript{103} The most common examples include passenger restrictions, nighttime driving restrictions, and prohibitions on operating on high-speed roadways.\textsuperscript{104}

GDL systems remove restrictions systematically as novice drivers acquire driving experience. Drivers thus earn full unrestricted licensure, not all at once, but instead in a progressive manner.\textsuperscript{105}

North Carolina traffic safety researchers proposed versions of GDL in the early 1970s, and the National Highway Traffic Safety Administration (NHTSA) developed a model GDL law in 1977. Although California and Maryland introduced very limited elements of GDL, it was two decades before the states took legislative note of it.\textsuperscript{106} Instead, the first jurisdiction to implement a true GDL system based on the North Carolina and NHTSA models was not a U.S. jurisdiction at all, but instead New Zealand, which adopted GDL legislation in 1987.\textsuperscript{107}

\begin{thebibliography}{99}
\bibitem{100}Hedlund, Shults, & Compton, What We Know What We Don't Know, and What We Need to Know About Graduated Driver Licensing, 34 J. OF SAFETY RESEARCH 107, 107 (2003).
\bibitem{101}Simpson, supra note __, at 27.
\bibitem{102}Id.
\bibitem{103}Id.
\bibitem{104}Id.
\bibitem{105}Id.
\bibitem{106}A. Croke & W.B. Wilson, Model for Provisional (Graduated) licensing of Young Novice Drivers, Contract No. DOT HS-6-01384 (Springfield VA: Technical Information Services 1977); Mayhew, supra note __, at S.324-25.
\bibitem{107}Simpson, supra note __, at 27. Waller, Genesis of GDL, supra note __ at 22.
\end{thebibliography}
The empirical evidence of the positive effects of its system then provided added impetus for U.S. states to follow suit.\textsuperscript{108}

In the early 1990s, Congress charged the National Transportation Safety Board (NTSB), an independent government investigative agency, to issue safety recommendations to the states in order to legislatively address the ongoing problem of crashes by teenagers.\textsuperscript{109} The NTSB issued safety recommendations in 1993, proposing the adoption of GDL laws,\textsuperscript{110} and later updated its recommendations to include passenger\textsuperscript{111} and wireless communication device restrictions.\textsuperscript{112}

In 1996, Florida was the first U.S. state act to replace its conventional licensure system with a GDL system including a six-month mandatory learner’s phase and nighttime driving curfews for 16-year-olds (11 p.m. to 6 a.m.) and 17-year-olds (1 a.m. to 5 a.m.) unless accompanied by an adult or traveling to or from work.\textsuperscript{113}

Since then, every state has implemented at least some aspect of a GDL system.\textsuperscript{114} The Insurance Institute for Highway Safety recommends that states implement a learner permit phase, available no earlier than age 16, a nighttime restriction beginning no later than 10 p.m., and a passenger restriction that allows no more than one

\textsuperscript{108} For a discussion of NHTSA and NTSB recommendations, as well as the 1996 Graduated Driver Licensing Model Law based on the NTSB recommendations and adopted by the National Commission on Uniform Traffic Laws and Ordinances, see Michelle Browning Coughlin, \textit{Proposing a Uniform National Graduated Driver License Law to Reduce Motor-Vehicle Fatalities Among Teenagers}, 46 \textit{U. LOUISVILLE L. REV.} 495, 500-504, 509-10 (2008).


\textsuperscript{111} Letter from National Transportation Safety Board to 33 Governors, H-03-08 and H-03-9, at 5 (June 13, 2003), available at http://www.ntsb.gov/Recs/letters/2003/H03_08_09.pdf.

passenger.\textsuperscript{115} Both night and passenger restrictions should remain in force until at least age 18.\textsuperscript{116}

In states that have adopted graduated licensing provisions, crashes among 16-year-old drivers have decreased between 10 and 30\%.\textsuperscript{117}

Researchers attribute the relative success of GDL programs in reducing teen crash risk to two primary factors: First, GDL delays unsupervised driving and limiting the exposure of young drivers to more challenging driving conditions (e.g., nighttime driving restrictions substantially reduce nighttime crashes).\textsuperscript{118} Second, GDL requires beginning drivers to perform the type of extended supervised practice and driving experience that may reduce crashes.\textsuperscript{119} In other words, a primary reason GDL programs reduce adolescent crashes and fatalities is that they reduce the number of unsupervised adolescent drivers on the roadways.

Even after the implementation of GDL systems, young drivers continue to be significantly overrepresented in crash statistics.\textsuperscript{120} Researchers express little surprise at their overrepresentation, noting many states have suboptimal GDL systems, and that compliance with existing requirements is imperfect.\textsuperscript{121} Many young drivers thus continue to engage in driving behaviors that exacerbate the risk of harm, including carrying passengers and nonuse of seatbelts.\textsuperscript{122}

Most importantly, perhaps, GDL systems reflect a compromise that still allows considerable driving at relatively young ages.\textsuperscript{123} And for young drivers, crash, injury, and fatality rates result from both age-related developmental factors and driving inexperience.\textsuperscript{124} As Waller has observed, GDL is aimed at reducing the inexperience component of young drivers’ crash risk; it was not designed, nor is it capable of addressing, deliberate rule-flouting or risk-taking behaviors often

\textsuperscript{115} Mayhew & Williams, \textit{supra} note __, at S.326 (citing \textsc{Insurance Institute for Highway Safety}, \textsc{Graduated Licensing: A Blueprint for North America} (2004)).

\textsuperscript{116} \textit{Id}.

\textsuperscript{117} Christine Branche, Allan F. Williams, & DeDe Feldman, \textit{Graduated Licensing for Teens: Why Everybody’s Doing It}, 30 \textsc{J.L. Med. & Ethics} 146, 147 (2002); McCartt et al., \textit{supra} note __, at 698.

\textsuperscript{118} Hedlund et al., \textit{supra} note __, at 109.

\textsuperscript{119} \textit{Id}.

\textsuperscript{120} Scott-Parker et al., \textit{supra} note __, at 1917.

\textsuperscript{121} Williams & Mayhew, \textit{supra} note __, at S.325.

\textsuperscript{122} Williams & Mayhew, \textit{supra} note __, at S.325. Researchers also note that teens tend to drive older and smaller cars lacking up-to-date safety features.

\textsuperscript{123} \textit{Id}.

\textsuperscript{124} \textit{Id}.
associated with young drivers (and addressed at greater length below).  

C. Socio-Cultural Context

Passenger cars most obviously serve what has become an essential social function—private transportation facilitating individuals’ mobility. In the late 19\textsuperscript{th} and early- to mid-20\textsuperscript{th} centuries, especially in rural and agricultural states, adolescent driving also enabled young people to contribute vital labor to family production work.

Cars and driving have also come to serve social functions and comprise cultural meanings far beyond their utilitarian transportation-related purposes, with significant age- and gender-specific components. Licensure has become an adolescent rite of passage, containing significant meaning for young people.

The following sections examine both the social functions and important cultural norms surrounding driving and licensure, particularly for U.S. adolescents.

1. Adolescent Licensure as Rite and Right

Obtaining a license to drive is a much-anticipated developmental rite of passage for most adolescents.\textsuperscript{126} Young people eagerly anticipate reaching the minimum age of licensure, and teens commonly view owning a car—or at least having regular access to one—as a near- entitlement.\textsuperscript{127}

Driving is a right withheld from children and younger adolescents; the right to drive is one of the bundle of rights that accompany adult (or at least a certain mature) status. The acquisition of licensure thus signals a young person’s movement into a new quasi-status, one reserved for those adolescents who have moved one

\begin{itemize}
  \item \textsuperscript{125} Waller, \textit{Genesis of GDL}, supra note __, at 19.
  \item \textsuperscript{127} Arnett, \textit{supra} note __, at S.ii.20.
\end{itemize}
significant step closer to adulthood. Its acquisition heralds the achievement of an important milestone.

Many teens are highly motivated to acquire licensure as soon as they are legally able. In addition to its ritualized significance, driving can bring about actual and dramatic increases in independence and freedom for the newly-mobile teen. Parents may place unjustified trust in driver education and licensure testing programs as capable of ensuring that teens are competent drivers. One study found that many parents accede to early licensure due to the strong desires of their teens to obtain licensure as soon as permitted by state law—despite parents' own reservations and preferences that their teens' licensure be delayed. As a result of the desires of their teens to acquire and exercise the significant driving entitlement, Mayhew observes that “parents too often allow inexperienced and immature youth to operate motor vehicles.”

Teens perceive driving as affecting status among peers and the opposite sex or romantic interests, as an activity through which they exercise autonomy and control, and as a means of facilitating the transition to adulthood by allowing for easier mobility between school, work, and social activities. In addition, licensure, cars, and driving serve additional social functions and convey an array of cultural meanings, both particularly salient to young people. The following section turns to the most significant of these.

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130 McCartt, et al., supra note __, at 701-02.
131 Mayhew et al., Why 16?, supra note __, at 15.
134 Scott-Parker et al., Psychosocial Factors Influencing Young Drivers, supra note __, at 473 (internal citations omitted).
2. Social Context, Cultural Meanings, and Gender

Licensure is not merely a symbolic marker of social status. Cars can also provide an actual physical space that serves as an important social context for adolescents.\(^\text{135}\) Cars function as a place where adolescents can be together, independent of parental oversight.\(^\text{136}\) For adolescents who live at home but prefer the company of friends away from the presence and monitoring of parents (which, according to developmentalists, describes most adolescents), the transportation function of a car can thus become secondary to its social function.\(^\text{137}\) For emerging adults (those aged 18-mid-twenties), the social function of the car may become less salient, since they are more likely to live independently of their parents and thus have less need of cars as social gathering places.\(^\text{138}\)

Popular culture has for decades portrayed driving—and risky driving, in particular—as “cool, youthful, and fun.”\(^\text{139}\) Race-car driving is an immensely popular sport.\(^\text{140}\) The media promotes fast driving across mediums.\(^\text{141}\) The exciting highlights of innumerable action movies, for example, are car-chase scenes in which dangerous yet skillful driving exemplifies the superior courage and masculinity of male protagonists.

The extent to which cultural messages influence adolescent behavior remains unclear.\(^\text{142}\) Audiences for race-car driving and action

\(^{135}\) Id.
\(^{136}\) Geoffrey Underwood, \textit{On-Road Behaviour of Younger and Older Novices During the First Six Months of Driving}, \textit{Accident Analysis & Prevention} (2012), doi:10.1016/j.aap.2012.03.019, at 2 (“Younger drivers engaged in more leisure-time driving, used their car for fun, with passengers, and for generally social purposes, whereas middle-aged drivers used their cars mainly for commuting.”) (citing S. Saapotti, et al., \textit{Driving Circumstances and Accidents Among Novice Drivers}, 7 \textit{Traffic Injury Prevention} 232 (2006)).
\(^{137}\) Arnett, \textit{supra} note __, at S.ii.18.
\(^{138}\) Id.
\(^{141}\) Id.
\(^{142}\) Keating & Halpern-Felsher, \textit{supra} note __, at s.276 (internal citations omitted).
movies are predominantly teenage boys and emerging adult men.\textsuperscript{143} By now incontrovertible is that teenaged males engage in riskier driving behavior and have both higher crash and fatality rates than do females.\textsuperscript{144} Researchers have thus also begun to study more closely the gendered aspects of driving.

New Zealand psychologist Niki Harré and colleagues have conducted a series of studies examining the interrelationships between gender differences in driving behavior, traffic injury rates, attitudes about risky driving, and gender role identification.\textsuperscript{145} They have found, as have other researchers, that both men and women have some tendency towards optimism bias, viewing themselves as above-average drivers.\textsuperscript{146} As noted above, the existence of optimism bias concerns researchers, as it correlates not only with a belief that one is at less risk of a crash than others, but also with overconfidence and risk taking.\textsuperscript{147}

Men have significantly higher levels of self-enhancement on the ability dimension than do women, perceiving themselves to have superior driving ability and skill than do other drivers.\textsuperscript{148} This heightened bias exists \textit{explicitly} and is evident when drivers consciously rate themselves relative to others, as well as \textit{implicitly}; evident when instruments measure drivers’ reaction times when pairing concepts that reflect non-conscious or automatic associative beliefs.\textsuperscript{149}

In other words, masculine gender role identification and driving ability self-enhancement reflect not only consciously held or stated beliefs about how males think they ought to behave, but also exist at a more automatic associative level of processing occurring outside of conscious awareness and declarative belief structures. Sibley and Harré found “an extremely strong path between being a man, identifying as

\textsuperscript{143} Arnett, \textit{supra} note __, at S.ii.19.

\textsuperscript{144} Allen & Brown, \textit{supra} note __, at S.292.


\textsuperscript{146} Sibley & Harré, \textit{Gender Role Socialization Model, supra} note __, at 459. In one sample of 136 young drivers, 93% of males and 75% of females rated themselves as more skillful drivers than their peers. White et al., \textit{supra} note __, at 1310 (2011).

\textsuperscript{147} Sibley & Harré, \textit{Gender Role Socialization Model, supra} note __, at 459.

\textsuperscript{148} \textit{Id.} at 453.

\textsuperscript{149} \textit{Id.} To identify and measure implicit attitudes, researchers used the Implicit Association Test (IAT), where participants match concepts as quickly as possible, based on the theory that the more quickly they match certain concepts, the more closely associated the concepts are in the brain. \textit{Id.} Men’s reaction times were quicker than women’s when matching the self relative to others with words representing driving ability and skills. \textit{Id.}
such[,] and driving ability self-enhancement at this automatic, unconscious level."  

These findings led them to conclude that these gender differences are at least partially the result of socialization experiences that relate masculine identity and risk taking and that are absorbed from repeated pairings of these concepts in society.  

Crash risk increases, moreover, when young male drivers are accompanied by a male passenger, but it decreases when they drive with female passengers. Based on these and other studies, Arnett concluded that, while “[c]ourage and the willingness to take risks in the face of danger is a requirement of manhood in many cultures, . . . in American society it often takes the unfortunately deadly form of dangerous driving.

3. Social Utility of Adolescent Mobility

How necessary is the mobility of 16- and 17-year-olds made possible by their licensure? The published report of a National Academy of Sciences workshop in which an interdisciplinary group of researchers studying adolescent health and development and traffic safety concluded that “that there is no good reason to license young people to drive at age 16.” At the same time, researchers have acknowledged and legislation has reflected, that the mobility made possible by early licensure can provide significant benefits both to adolescents and their families.

Historically, young people in farming communities operated farm equipment in fields at an early age (and commonly used roads to travel between fields). Accordingly, rural farm states generally established young minimum licensing ages (usually 14 or 15) or legislated exceptions to the minimum age for farm operations.

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150 Sibley & Harré, Gender Role Socialization Model, supra note __, at 459. Explicit and implicit self-enhancement only weakly correlate, suggesting that they reflect distinct mental processes, but each independently predict crash-risk-optimism.  

151 Id.

152 Allen & Brown, supra note __, at S.292 (internal citations omitted).

153 Arnett, supra note __, at S.ii.19 (internal citations omitted).

154 NAT'L RES. COUNC., PREVENTING TEEN MOTOR CRASHES, supra note __, at 42.


156 Id.

157 Id.
percentage of Americans engaged in agricultural work has plummeted, however—from 35% in the early years of the 20th century to 2.5% today.\(^\text{158}\) Today’s farmers produce between 5 and 10 times the output per man-hour worked as did farmers at the beginning of the 20th century.\(^\text{159}\) Farming simply does not require the manpower it once did. (It is reasonable, moreover, to surmise that few would allow their early adolescent children to drive the $200,000 combines that now typify modern farm equipment.)

The need of agrarian families to have teens licensed and able to contribute the to family’s production work has thus all but disappeared. Researchers today regularly allude to the need for adolescent mobility, however, particularly in suburban and rural areas.\(^\text{160}\) Relatively little recent empirical work examines the necessity of adolescent mobility. One study published in 1985 compared the lifestyles of licensed and unlicensed 15- and 16-year-olds in three states.\(^\text{161}\) It found the major lifestyle difference between the two to be the extent to which the teens performed family errands such as shopping, or provided transportation for siblings.\(^\text{162}\) Higher rates of licensure were also associated with greater reliance on parents or other family members for transportation.\(^\text{163}\) Licensure can thus ease some of the burden on parents. On the other hand, lack of licensure did not reduce job holding (regional unemployment rates and child labor laws did affect teen employment) or participation in social activities requiring transportation.\(^\text{164}\) Licensure also did not correlate with use of public transportation.\(^\text{165}\) A study of New Jersey’s 17-year-old licensing age found the lifestyle effects of the higher licensing age to be minimal.\(^\text{166}\)

In light of the geographic and economic realities of American (particularly non-urban) family life, however, early licensure may


\(^{159}\) Moore & Simon, supra note __, at 17, Fig. 13.

\(^{160}\) Allan F. Williams & David F. Preusser, Night Driving Restrictions for Youthful Drivers: A Literature Review and Commentary, 18 J. OF PUBLIC HEALTH POL’Y 334, 335 (1997).

\(^{161}\) David F. Preusser, Allan F. Williams, & Adrian K. Lund, Driver Licensing Age and Lifestyles of 16 Year Olds, 75 AM. J. OF PUBLIC HEALTH 358 (1985). The states were Michigan, New Jersey, and New York. Id.

\(^{162}\) Id. at 360.

\(^{163}\) Id. at 359.

\(^{164}\) Id. at 359-60.

\(^{165}\) Id. at 359.

\(^{166}\) McCartt et al., supra note __, at 698.
provide significant familial benefits. Adolescents’ unsupervised driving can relieve their parents of some of the time-consuming and logistically-challenging demands of serving as their children’s chauffeurs, particularly when they must simultaneously meet work and other household responsibilities. Adolescent mobility can facilitate adolescents’ commuting to and from school, extracurricular and social activities, and paid work.

At the same time, however, parental support for early licensure to lighten parents’ own chauffeuring burdens finds more support in anecdotal evidence and assumptions than in empirical data. In one study surveying parents in several states whose teenagers were taking their first on-road driving tests, virtually no parents cited the need to help parents with transportation as justifying their teens’ obtaining licenses as early as possible. In addition, no parent interviewed cited teens’ commuting to or from work obligations as justifying early licensure in two of the states in which parents were interviewed: 5% of parents in a third state cited teens’ own job-related obligations.

A higher proportion of U.S. adolescents drive than in most other countries. The age of licensure is higher in most developed countries than in the United States—in the E.U., for example, the average age of licensure is 18. Even when European teens have the option of obtaining licensure, however, they do so at rates significantly lower than do U.S. teens. In France, for example, the presumptive age of licensure is 18, but 16- and 17-year-olds who complete a training program may obtain licensure earlier. Most young French people, however, decline to participate in the early licensure program—only about 10 percent of

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167 Laird, supra note __, at 314. See also, Arthur L. Kellermann & Ricardo Martinez, Hot Wheels, 35 AM. J. OF PREVENTIVE MEDICINE (Supp. 3) S.iii.310, S.ii.310 (2008). Kellermann & Ricardo wrote that Kellermann’s wife advocated in favor of buying their mid-adolescent son a car, arguing that “[h]e’s a good student, he’s stayed out of trouble, and he promises to be careful . . . And besides, I’m sick and tired of schlepping him around.” Id. Kellerman, who is an emergency physician and director of an injury prevention center, reported that their son caused a crash that caused extensive damage (but no injuries, largely thanks to the car’s advanced safety features, according to Kellerman) to both cars involved. Id. at s.310-11.

168 Mayhew et al., Why 16?, supra note __, at 14. In 1929, New York made provisions for 16- and 17-year-olds to obtain junior permits allowing them to drive to and from work or school Id.

169 McCartt, et al., supra note __, at 701, Table 5., Parents’ responses concerning reasons for timing of teenagers obtaining learner’s permits (percent). No parents cited this as a factor in Minnesota, and only 2% of North Carolina and Rhode Island parents did so. Id.

170 Id. No parent cited this factor in either Minnesota or North Carolina; 5% of Rhode Island parents did so. Id.

171 Williams & Preusser, supra note __, at 335.
them avail themselves of the opportunity.\textsuperscript{172} In the United States, on the other hand, the vast majority of young people obtain licensure as early as permitted by the laws of their respective states. It is possible that alternative modes of transportation meet the mobility needs of European adolescents, reducing the importance of providing for early licensure.\textsuperscript{173} European countries tend to be highly urbanized and have extensive public transportation systems. Cycling is also a more common mode of transportation than it is in the United States and is also facilitated by shorter distances between rural areas and urban centers.\textsuperscript{174} Finally, car owners pay significantly higher taxes abroad than they do in the United States, making car ownership less accessible.\textsuperscript{175}

The following Part describes characteristics of adolescent driving, the contextual factors (both internal and external to the adolescent) that affect it, and the process of acquiring driving competence.

II. DEVELOPMENT, THE DRIVING TASK, AND UNALTERABLE RISK

Inexperience and developmental immaturity are the central factors that contribute to adolescent crash risk. This Part explores each, the nature of its contribution to adolescent crash risk, the means by which its negative effects might be surmounted, and those aspects of each that resist intervention. The learning processes required for the acquisition of competent driving skill differs little from the processes required to acquire competence in other complex psychomotor skills. After basic skill acquisition, true competence comes only with actual practice and the experience acquired with time and effort.

Competent driving also requires decision-making and regulatory maturity—competencies whose acquisition is incomplete in adolescence.\textsuperscript{176} This Part discusses aspects of adolescent development and behavior that are relevant to driving. These are normative—not pathological or aberrational—and are thus resistant or not amenable to change through education or other interventions.

\textsuperscript{172} Mayhew et al., \textit{Why 16?}, supra note __, at 18. The French refer to this system as the “apprentissage” system of driver training. \textit{Id}.

\textsuperscript{173} Mayhew et al., \textit{Why 16?}, supra note __, at 18.

\textsuperscript{174} Mayhew et al., \textit{Why 16?}, supra note __, at 18.

\textsuperscript{175} Arnett, \textit{supra} note __, at S.ii.20.

\textsuperscript{176} Williams et al., \textit{Future Directions for Research}, supra note __, at 7.
This Part concludes by exploring the combined effects of age-related developmental factors and inexperience on adolescent driving risk. As cognitive psychologists have consistently found, “age (or rather youthfulness) and driving inexperience contribute independently to crash involvement . . . The catastrophically higher crash likelihood of teenage drivers stems from their lack of driving experience and their lack of age.”

Any regulatory system that entrusts adolescents with the responsibility of driving must understand and account for this aspect of adolescent nature.

A. Adolescent Driving, Deconstructed

This section first describes characteristics of adolescent drivers that distinguish them both from adult and from non-adolescent novice drivers. It then notes contextual factors that influence adolescent driving, for better and for worse.

1. Characteristics of Adolescent Driving

Young people’s driving differs from that of older drivers. Young drivers are more likely than older drivers to drive at speeds that exceed posted limits or that exceed speeds appropriate to driving conditions (e.g. in foul weather or wet roadways). Other characteristics of their driving that increase their crash risk are smaller gap acceptance, a tendency to follow vehicles too closely, to weave through traffic and make illegal lane changes, and to fail to yield the right of way at controlled intersections (e.g., stop signs and traffic lights). They have poorer hazard perception than do older drivers, and are less likely to recognize and respond appropriately to hazards and developing traffic

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177 Groeger, *supra* note __, at S.i.19.
178 Braitman et al., *supra* note __, at 47; Shope, *supra* note __, at S.i.10.
179 Hedlund et al., *supra* note __, at 108; Shope, *supra* note __, at S.i.10; Williams, *Young Driver Risk Factors, supra* note __, at S.i.4.
Young males generally exhibit these risky driving behaviors to a greater extent than young female drivers.\textsuperscript{180} Studies have found the overwhelming majority of non-fatal crashes involving young drivers result, not from intentional risk-taking behaviors, but instead from failure to employ routine safe driving practices and to recognize the inherent dangers of doing so.\textsuperscript{182} One study of the crashes of newly-licensed teen drivers found that the factors most likely to contribute to the crashes involved the driver’s failing to detect another vehicle or traffic control, speeding, and losing control of the vehicle.\textsuperscript{183} A majority of their crashes (about 60\%) involved more than one contributing factor.\textsuperscript{184}

2. Contextual Influences on Adolescent Driving

The nature of the driving task and the skills required for its safe execution both depend on the specific context in which it occurs. Drivers must respond appropriately to changing traffic and roadway conditions, anticipate and react to other motorists’ actions, and contend with potential distractions within their own vehicles (both self- and other-generated). In other words, “[s]afe driving is not only a matter of how well one drives, but how one drives in the real world, which is hampered by complexities and multiple contexts.”\textsuperscript{185}

Researchers have identified a number of contextual factors that predictably influence young drivers’ performance; this section discusses the most significant of these.

Passengers, Older and Younger. Adolescent driving behavior and crash risk vary tremendously depending on who is in the car with them. Driving with adult passengers has a protective effect, and it is then that...
adolescent crash risk is at its lowest.\textsuperscript{186} Despite having less driving experience, learners driving under adult supervision have much lower crash rates than novice (i.e., unsupervised) drivers.\textsuperscript{187} Of 16-year-old drivers involved in fatal crashes between 1994 and 1998, for instance, 86\% held a valid license, whereas 3\% held a learner’s permit.\textsuperscript{188} Indeed, learners’ crash risk approximates that of experienced adults.\textsuperscript{189} Researchers reason that adult passengers act as copilots of sorts, offering advice and alerting the beginning driver to potential dangers.\textsuperscript{190}

For young drivers, carrying peer passengers has the opposite effect, and it is then that adolescent crash and fatality rates are at their highest.\textsuperscript{191} Younger drivers are more likely to speed, exhibit risky driving behaviors, drive while impaired, and fail to wear seatbelts when accompanied by peer passengers.\textsuperscript{192} Their accident rates are substantially higher than when they drive alone. Their crash and fatality rates are highest when driving with two or more teenage passengers.\textsuperscript{193} The sex of the teenaged passenger, moreover, correlates with teen drivers’ behavior. When the teen passenger is male, both male and female teen drivers tend to drive more aggressively, following more closely behind other vehicles and driving above posted speed limits.\textsuperscript{194}

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\textsuperscript{187} Mayhew et al., \textit{Collision Rates Among Novice Drivers}, supra note \_, at 684. Mayhew and colleagues compared month-by-month changes in the crash rates of learners (who hold a learner’s permit) and novice drivers (who hold a full license), and the monthly changes over a period of two years in crash rates of young novice drivers (ages 16-19) and older novice drivers (ages 20 and older).
\textsuperscript{188} Roberg F. Ulmer et al., \textit{Teenage Crash Reduction Associated with Delayed Licensure in Connecticut}, 32 \textit{J. OF SAFETY RESEARCH} 31, 32 (2001). There were 6,145 16-year-old drivers involved in fatal crashes during this period. \textit{Id}.
\textsuperscript{190} Allen & Brown, \textit{supra} note \_, at S.289.
\textsuperscript{191} Laird, \textit{supra} note \_, at 313.
\textsuperscript{193} Laird, \textit{supra} note \_, at 313; Lee & Abdel-Aty, \textit{supra} note \_, at 1704.
\textsuperscript{194} Laird, \textit{supra} note \_, at 313 (citing B. Simons-Morton, N. Lerner, & J. Singer, \textit{The Observed Effects of Teenage Passengers on the Risky Driving Behavior of Teenage Drivers}, 37 \textit{ACCIDENT ANALYSIS & PREVENTION} 973 (2005)); Lee & Abdel-Aty, \textit{supra} note \_, at 1703. A British study found that “t[he] presence of female passengers was associated with safer driving for young men, but the presence of young male passengers was associated with dangerous driving (for example, high speed, smaller
Researchers analyzing the effects of carrying peer passengers have categorized teen passenger influence into two broad types—proximal (or direct) and distal (or indirect). The behaviors of peer passengers in the vehicle are proximal influences and can include distracting the driver, physically disrupting or interfering with driving, or inciting the driver to engage in risky behaviors. Even absent any explicit action on the part of peer passengers, however, research suggests their mere presence of peer passengers influences young drivers. This distal or indirect influence of passengers seems to result from drivers’ perceived pressure from them to conform to in-group norms that establish appropriate behavior.

**Time of Day.** For motorists of all ages, driving at night, especially after midnight, is more risky than driving during the day. The nighttime crash risk is disproportionately high for young drivers, however, and it is particularly elevated for 16-17-year-old drivers. Researchers offer several explanations for the heightened dangers posed by nighttime driving. First, darkness itself renders the driving task more difficult. Second, the types of teens’ social activities (such as weekend parties) where drivers tend to carry peer passengers and which correlate with impaired and risky driving, occurs more frequently at night. Finally, sleep deprivation, addressed next, can contribute to increased nighttime driving risk.

**Sleep Deprivation.** Sleep deprivation (e.g., 18-24 hours of continuous wakefulness) has wide-ranging effects that implicate driving. Fatigue caused by sleep deprivation impairs attention, reaction time, judgment, and emotional regulation—including increased anger and following distance) for both young male and young female drivers.” Arnett, *supra* note __, at S.ii.18.

195 Laird, *supra* note __, at 313.
196 *Id.*
200 *Id.*
201 *Id.* In general, however, alcohol-impaired driving is more commonly among emerging adults than among teenaged drivers. Shope, *supra* note __, at S.i.10.
impulsivity—at levels comparable to impairments caused by alcohol intoxication. 202 Among individuals suffering moderate levels of sleep deprivation, moreover, even very low amounts of alcohol can impair performance. 203

Sleep deprivation is widespread among adolescents, who typically sleep anywhere between one and three hours less than is required by their natural sleep cycles. 204 Given the prevalence of sleep deprivation among teens and the extent of its effects on functioning, fatigue is unsurprisingly a nontrivial contributor to teen crashes. 205 Drivers aged 18 and younger have by far the highest rates of fatigue-related crashes of all age groups. 206

One researcher, emphasizing the effects of these overlapping influences on young drivers, describes what is too-common a sequence: “the teenager who gradually accumulates a growing sleep debt during the school week, . . . who then goes out to a late-night party on Friday, and drives home under the combined influence of sleep deprivation and alcohol.” 207 He concludes, “[i]t is difficult to imagine a more dangerous combination of driving risks.” 208

B. Driving as Complex Psychomotor Skill: Acquiring Expertise through Experience

This section describes the skills required for driving competence and the learning process required to acquire them. Real-world driving is a complex psychomotor task, analogous in some ways to continuous-action sports, such as basketball or hockey. And as with any complex psychomotor skill, such as basketball or other continuous action sports,

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203 Dahl, supra note __, at S.283. Doses of alcohol less than 40 mg/100ml can compound the effects of sleep deprivation. Id.
204 Keating & Halpern-Felsher, supra note __, at S.iii.274.
205 Groeger, supra note __, at S.22; Shope, supra note __, at S.i.10.
206 Groeger, supra note __, at S.22 (reporting analysis of 2001-02 Fatality Analysis Reporting System traffic crash data). Emerging adult drivers aged 19-24 have the next-highest rates of fatigue-related crashes. Both groups have significantly higher rates of fatigue-related crashes than all other age groups. Id.
207 Dahl, supra note __, at S.283.
208 Id.
driving skill develops only with the experience that comes with practice over an extended period of time.  

The typical novice can acquire the rudimentary elements of the driving task—basic knowledge of traffic rules and vehicle-handling skills such as starting, stopping, steering, and reversing a car—within a matter of days, or even hours. While basic knowledge and maneuvering ability are certainly necessary for driving competence, however, they are far from sufficient. In addition to basic vehicle-handling skills, driving requires a host of others, such as regularly performing specific patterns of visual search: identifying and interpreting a constantly changing external environment; recognizing and both rapidly and appropriately responding to potential hazards; and maintaining near-constant attention to the driving task, irrespective of in-vehicle or other distractions.

Novice drivers, deprived of the adult “copilots” who initially supervised their driving as learners, at once encounter multiple situations that are new to them, and the tasks of processing and responding to each of these demand significant cognitive resources. The novice must (1) engage a still-new perceptual context, (2) within that context, handle a car that itself requires the complex coordination of numerous controls, and (3) perform in a manner that conforms to the many norms and rules of the traffic environment.

With deliberate, effortful practice, the coordinated performance of driving components becomes automated, and the demands on cognitive resources lessen. Because driving is cognitively demanding for the inexperienced driver, however, distractions can easily disrupt

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209 Keating & Halpern-Felsher, supra note __, at S.iii.273; Subcomm. Young Drivers, Future Directions for Research, supra note __, at 9; Waller, Genesis of GDL, supra note __ at 18.

210 Subcomm. Young Drivers, Future Directions for Research, supra note __, at 9.

211 Drummond, supra note __, at 44; Subcomm. Young Drivers, Future Directions for Research, supra note __, at 9.


213 Gregersen & Bjurulf, supra note __, at 232.

214 Id. Groeger emphasizes that “it is a lack of driving experience, not a lack of traffic experience, that is important. People need to actually perform the activity repeatedly in order to improve their performance. Being taught about it second hand, watching it, or simply getting older does not yield the same—if any—improvement.” Groeger, supra note __, at s.20.
the driver’s performance, which is already relatively inconsistent.\textsuperscript{215} More experienced drivers can drive safely even while expending less cognitive effort, making their driving both less susceptible to disruption by distraction, and less variable.\textsuperscript{216}

Guided practice facilitates expertise development, and learning theorists stress its importance during the process of skill acquisition.\textsuperscript{217} Beginners are unlikely to acquire expertise solely through unsupervised or unstructured experience. Practice guided by experienced drivers helps ensure that the beginning driver acquires desirable skills and avoids acquiring undesirable skills or bad habits; just as competent and safe driving skills can become automated, so too can unsafe habits.\textsuperscript{218}

Learner-permit requirements that impose a supervised learning stage on beginning drivers thus provide a structure in which they may gain the guided experience needed to acquire driving skills. Unlike short-term driver-education programs, learner-permit requirements—provided they provide for sufficient periods of practice and experience acquisition—can play a key role in improving licensing safety.\textsuperscript{219} Driver’s education programs, traffic safety experts now suggest, might at best be an effective way to acquire initial basic driving skills.\textsuperscript{220} But in order for novice drivers to accumulate the experience required for driving competence, the Subcommittee on Young Drivers of the Transportation Research Board estimated that it currently takes 18-24 months of independent driving.\textsuperscript{221}

The pattern of crash rates for all novice drivers starkly illustrates the importance of actual driving experience. Crash rates are highest in the first 250 miles of independent driving, drop by almost

\textsuperscript{215} Groeger, supra note __, at s.20.
\textsuperscript{216} Id.
\textsuperscript{217} Keating & Halpern-Felsher, supra note __, at S.iii.274.
\textsuperscript{218} Id.
\textsuperscript{219} Simpson, supra note __, at 26. This research helps explain the failure of traditional driver education courses, which can typically provide only basic car-handling instruction and information on traffic laws and safe driving practices. “[I]n its present form,” Professor Patricia Waller has concluded, a driver education program “cannot produce a proficient driver.” Waller, \textit{Genesis of GDL}, supra note __, at 18.
\textsuperscript{220} Williams, \textit{Young Driver Risk Factors}, supra note __, at S.i.5. In one study, for example, novice drivers who received the maximum training scored higher than the minimum training and control groups on an on-road performance test. \textit{Id}.
\textsuperscript{221} Subcomm. Young Drivers, \textit{Future Directions for Research}, supra note __, at 9.
two-thirds in the next 250 miles, and continue to decline modestly as independent driving experience increases.\textsuperscript{222}

This section has examined the importance of experience—which can only occur over time—to acquiring driving competence. The following section examines the importance of other regulatory and decision-making capacities—which also can only occur over time—development progresses—to acquiring driving competence.

C. Driving as Real-World Deployment of Expertise: Ongoing Development of Psychosocial Maturity/Regulatory Competence in Adolescence

As discussed above, competent driving requires the effortful acquisition of knowledge and skill. Competent and safe driving also require a mature capacity for self-regulation—i.e., the ability to control one’s attention, emotions, and behavior across a variety of social situations and contexts.\textsuperscript{223} Regulatory competence involves the ability to function (here, to maneuver a vehicle) proficiently in the face of challenging circumstances or major distractions.\textsuperscript{224} These distractions may come from external sources (e.g., disruptive passengers), may be self-generated (e.g., texting or eating while driving), or may be fully internal (e.g., mulling over a perceived insult).\textsuperscript{225}

Drivers who lack mature self-regulatory capacities—as are drivers whose inexperience demands they devote significant cognitive resources to the driving task—are more susceptible to distractions and the lapses in attention they may cause.\textsuperscript{226} Failures of self-regulatory control also makes them more vulnerable to unchecked emotion and the resulting impulsive actions to which they may lead, all of which can result in driving behavior that leads to potentially serious, or even fatal, consequences.\textsuperscript{227}

\begin{footnotesize}
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\item \textsuperscript{222} Keating & Halpern-Felsher, \textit{supra} note __, at S.iii.273. \textit{See also}, Laird, \textit{supra} note __, at 311; McCartt et al., \textit{supra} note __, at 311-12. A number of studies have replicated these findings, including one of more than 40,000 novice drivers that found that after two years, novice drivers’ crash rates were 60% lower than during the first month of full licensure and independent driving. Mayhew et al., \textit{Collision Rates Among Novice Drivers, supra} note __, at 684.
\item \textsuperscript{223} Dahl, \textit{supra} note __, at S.278; Graham & Gootman, \textit{supra} note __, at s.255.
\item \textsuperscript{224} Keating & Halpern-Felsher, \textit{supra} note __, at S.iii.274.
\item \textsuperscript{225} Id.
\item \textsuperscript{226} Id.; Dahl, \textit{supra} note __, at S.278.
\item \textsuperscript{227} Dahl, \textit{supra} note __, at S.278.
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The development of regulatory competence remains incomplete in adolescence but is instead ongoing. The next two sections discuss relevant aspects of adolescent cognitive and psychosocial development, including the development of regulatory competence, first from the perspective of behavioral psychology, then from the perspective of developmental neuroscience. It is only in recent years that researchers, aided by technological developments in neuroimaging techniques, have begun to better understand the neural correlates of various aspects of adolescent behavior and of social and cognitive changes seen to occur during development. Although research in both fields is also still developing, essential elements of insights drawn from each are mutually reinforcing and support the conclusion that the underlying neural systems that support and influence adolescents’ development of self-regulatory capacities are themselves still maturing throughout the teen years. And partly because this development is dependent on normative physical/neurological processes, it is resistant to change through external educational interventions or other interventions.

1. Insights from Behavioral Psychology

Researchers who study cognitive development have made two critical findings: First, by midadolescence, individuals have the cognitive capacity to make competent decisions. Second, certain contexts can hinder the decision-making abilities that adolescents otherwise possess.

Cognitive capacity, including learning and reasoning from facts and experience and information processing, improves more or less linearly throughout childhood, reaching adultlike levels by

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228 Stephanie Burnett, et al., *The Social Brain in Adolescence: Evidence from Functional Magnetic Resonance Imaging and Behavioural Studies*, 35 NEUROSCIENCE & BIOBEHAVIORAL REVIEWS 1654, 1654-55 (2011). The advent of functional magnetic resonance imaging (fMRI) in particular has allowed scientists to observe brain activity while individuals engage in specific tasks. *Id.* Researchers can also use fMRI to compare patterns of neural activity of different groups, such as children, adolescents, and adults. *Id.* Structural magnetic resonance imaging (MRI) techniques have revealed ongoing neuroanatomical development during adolescence, namely in regions of the brain associated with social cognition. *Id.* at 1660.

229 Dahl, *supra* note __, at S.278.

midadolescence. The reasoning and basic information-processing capacities of the typical 16-year-old, according to researchers, are essentially indistinguishable from those of adults.

Their mature abilities to learn and reason help explain adolescents’ driving-skill acquisition, and their abilities to acquire the knowledge and skills required for competent driving. They can thus master the rules of driving and through accumulated experiences gained through practice, develop increasing levels of expertise.

Despite adolescents’ mature cognitive and reasoning abilities, however, universal characteristics of adolescent behavior include increased propensities for often-irrational impulsivity, risk taking, and sensation seeking. Early behavioral decision models attributed these behavioral characteristics to cognitive deficiencies that caused adolescents to misperceive risks and fail to appreciate the long-term consequences of their decisions. Studies, however, revealed no cognitive differences between adolescents and adults that could explain their different propensities for risk taking.

Behavioral scientists thus reached the counterintuitive conclusion that adolescents engage in higher rates of risky, seemingly irrational behavior than do adults despite being as “knowledgeable, logical, reality-based, and accurate in the ways in which they think about risky activity . . . as their elders.” Cognitive deficiencies do not account for adolescents’ propensity for risky and impulsive decision making.

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232 Laurence Steinberg, A Social Neuroscience Perspective on Adolescent Risk-Taking, 28 DEVELOPMENTAL REV., 78, 80 (2008) [hereinafter Steinberg, Adolescent Risk-Taking].
233 Sara B. Johnson et al., Adolescent Maturity and the Brain: The Promise and Pitfalls of Neuroscience Research in Adolescent Health Policy, 45 J. ADOLESCENT HEALTH 216, 218 (2009). Compared with adults over twenty-five, adolescents and young adults are more likely to binge drink, commit crimes, engage in violence, have casual sex, and cause serious or fatal automobile accidents. Steinberg, Adolescent Risk-Taking, supra note __, at 79.
235 Steinberg, Adolescent Risk-Taking, supra note __, at 80.
236 Id.
Researchers have endeavored to determine why adolescents nonetheless frequently make irrational, risky decisions.

Behavioral scientists examined more closely the real-world contexts in which adolescents make decisions, gaining valuable insights into adolescent decision-making processes. Their findings confirmed adolescents’ competence to make rational decisions—at least when making decisions in the artificially ideal conditions of the research laboratories in which they complete tasks involving minor, symbolic risks. The real-world contexts—including driving contexts—in which adolescents make decisions, however, can drastically affect the quality of their decision making.

When decision-making contexts involve stressors that require the exercise of psychosocial maturity/regulatory competence—e.g., require that a decision be made in an unfamiliar situation (e.g., the new perceptual situations involved in driving), under time pressure (e.g., the nearly-instantaneous reactions often required when reacting to driving hazards), in an emotionally-charged situation or in the heat of passion, or in the presence/under the influence of peers (including the direct or distal influence of peer passengers)—adolescent decision making suffers.

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237 Id.

238 Behavioral scientists define a “context [as] a culturally defined situation that (a) occurs in a particular time and place and (b) contains actors who perform culturally defined roles.” James P. Byrnes, The Development of Self-Regulated Decision Making, in THE DEVELOPMENT OF JUDGMENT AND DECISION MAKING IN CHILDREN AND ADOLESCENTS 5, 7 (Janis E. Jacobs & Paul A. Kaczynski eds. 2005).

239 Steinberg, Adolescent Risk-Taking, supra note __, at 80.

240 Id.; Reyna & Farley, supra note __, at 2.

241 Margo Gardner & Laurence Steinberg, Peer Influence on Risk Taking, Risk Preference, and Risky Decision Making in Adolescence and Adulthood: An Experimental Study, 41 DEV. PSYCHOL. 625, 625 (2005); Reyna & Farley, supra note __, at 11. Cognitive researchers have referred to this as the “competence-performance distinction.” Jennifer L. Woolard et al., Theoretical and Methodological Issues in Studying Children’s Capacities in Legal Contexts, 20 L. & HUM. BEHAV. 219, 220 (1996) (citations omitted). Consistent with these observations, studies demonstrate that not all cognitive processes mature by midadolescence. Some processes, such as certain aspects of working memory, continue to specialize and develop into adulthood. Beatriz Luna et al., What Has fMRI Told Us About the Development of Cognitive Control Through Adolescence?, 72 BRAIN & COGNITION 101, 101, 105 (2010) (suggesting that all components of working memory mature by the early twenties). Working memory is involved in the voluntary control of behavior (including the ability to filter irrelevant information and suppress inappropriate actions) and other complex mental abilities. Id. at 101.

242 Reyna & Farley, supra note __, at 2; Gardner & Steinberg, supra note __, at 625.
Emerging research in the neurosciences helps explain why context matters.\footnote{Valerie F. Reyna & Frank Farley, \textit{Is the Teen Brain Too Rational?}, 17 Sci. Am. 58, 60 (2007) [hereinafter Reyna & Farley, \textit{Is Teen Brain Too Rational?}]; Reyna & Farley, \textit{Risk and Rationality}, supra note __, at 1. Even though they do not generally misperceive risks (if anything, studies tend to show that adolescents and adults both overestimate risk), adolescents tend to weigh and value benefits more heavily than risks, as compared to adults. Researchers advance a number of theories to explain this, some related to cognition and others grounded in neural development itself. See Baruch Fischhoff, \textit{Assessing Adolescent Decision-Making Competence}, 28 Dev. Rev. 12, at 19-20 (2008); Charles Geier & Beatriz Luna, \textit{The Maturation of Incentive Processing and Cognitive Control}, 93 Pharmacology, Biochemistry & Behav. 212, 213 (2009).}

\section*{2. Insights from the Developmental Neurosciences}

Developmental neuroscientists have begun developing a neurologically based model that has the potential to explain the simultaneous increases in adolescents’ risk taking, poor decision making, and general lack of self-regulatory control on the one hand, and improved cognitive ability on the other.\footnote{Casey et al., supra note __, at 63 (discussing cognitive and neurobiological hypotheses that fail to adequately account for adolescent decision-making behavior). Developmental psychologist Laurence Steinberg recently emphasized the importance— to all disciplines within developmental science—of research in developmental neuroscience, suggesting that this research has the “potential to structure a new, overarching model of normative . . . adolescent development.” Laurence Steinberg, \textit{A Behavioral Scientist Looks at the Science of Adolescent Brain Development}, 72 Brain & Cognition 160, 162 (2010) [hereinafter Steinberg, \textit{Adolescent Brain Development}], \textit{See generally Steinberg, Adolescent Risk-Taking. See also Burnet et al., supra note __ at 1660 (summarizing broadly compatible models).}

The model is primarily oriented around development in two neural systems of the brain—the system associated with \textit{cognitive control}, and the one associated with \textit{socio-emotional maturity}, which includes self-regulatory capacities. The core insight of this dual-systems model is that these two neural systems develop along different timelines.\footnote{Steinberg, \textit{Adolescent Risk-Taking}, supra note 244, at 97-98; see also Laurence Steinberg et al., \textit{Age Differences in Sensation Seeking and Impulsivity as Indexed by Behavior and Self-Report: Evidence for a Dual Systems Model}, 44 Dev. Psychol. 1764, 1764 (2008) ("Neurobiological evidence in support of the dual systems model is rapidly accumulating.").} This temporal disjunction has the potential to explain adolescents’ risk taking and poor decision making despite their improved cognitive ability, as well as
other aspects of adolescent psychology and behavior. An overview of the model’s features follows.

The socio-emotional system within the dual-systems model includes neural circuitries across regions of the brain implicated in social information-processing and reward-seeking/processing. When certain neurons (nerve cells that transmit information throughout the brain in the form of electrical or chemical impulses) are stimulated by a chemical impulse, they trigger the release of neurotransmitters that then chemically stimulate the next neuron in the circuit. In the socio-emotional system, the neurotransmitter dopamine modulates the neural reward circuitry. The mechanisms underlying dopamine neurotransmission continue to mature during adolescence. Dopaminergic activity peaks rapidly and dramatically in early adolescence, around the time of pubertal maturation.

Researchers believe that this peak in dopaminergic activity makes adolescents experience a potentially rewarding stimuli as even more rewarding than during either childhood or adulthood. The resulting heightening of reward salience leads to increased sensation seeking—a “tendency to seek out novel, varied, and highly stimulating experiences, [coupled with a] willingness to take risks in order to attain them.” Consistent with this theory, studies show that sensation seeking, risk preference, susceptibility to deviant or antisocial peer influence, and reward sensitivity all follow a curvilinear, inverted-U (“∩”)-shaped trend. These behavioral characteristics begin to increase at age ten or eleven, peak around ages fourteen to sixteen (depending on the study and measure used), and then begin to decline.

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246 See infra notes__, and accompanying text. For slightly different accounts of the dual-systems model, see Casey et al., supra note __, at 63-64; Geier & Luna, supra note __, at 213. See also Catherine Sebastian et al., Social Brain Development and the Affective Consequences of Ostracism in Adolescence, 72 BRAIN & COGNITION 134, 138 (2010) (discussing aspects of the dual-systems model).

247 The socio-emotional system includes the “amygdala, nucleus accumbens, orbitofrontal cortex, medial prefrontal cortex, and superior temporal sulcus.” Steinberg, Adolescent Risk-Taking, supra note __, at 83.


249 Geier & Luna, supra note __, at 216.

250 Id. at 216-17; Steinberg et al., supra note __, at 1764-66.

251 Steinberg, Adolescent Risk-Taking, supra note __, at 85.

252 Id.; Steinberg et al., supra note __, at 1765.

253 Steinberg, Adolescent Brain Development, supra note __ at 163; Sindy R. Sumter et al., The Developmental Pattern of Resistance to Peer Influence in Adolescence: Will the Teenager Ever Be Able to Resist?, 32 J. ADOLESCENCE 1009-10 (2009); see also Steinberg, Adolescent Risk-Taking, supra note __, at 89 (ages thirteen to sixteen); Steinberg et al., supra note __, at 1774 (ages twelve to fifteen).
Developmentalists have posited that the adolescent brain’s heightened sensitivity to reward helps explain their propensity for risk-taking, and sensation-seeking of all sorts more generally. For young drivers, strongly desirable sensations associated with driving include excitement, power, and increased status among peers. A propensity for sensation seeking has consistently been associated with risky driving, traffic violations, and car crashes.

The second neural system in the dual-systems model is the cognitive control system. Cognitive control refers to the abilities to voluntarily coordinate and engage in goal-directed behavior. This system includes the prefrontal cortex, which is involved in executive, decision making, and self-regulatory functions, and “association” areas, which connect different regions of the brain and thus support the complex integration of functions. The cognitive control system follows a more gradual and linear developmental trajectory than does the socio-emotional system. Three structural changes in the brain characterize the maturation of cognitive control during adolescence.

The first structural change involves a process known as synaptic pruning, by which synapses (the point of contact between two nerve cells in a given neural circuit) that have not been stimulated (due to lack of use) are eliminated, and remaining synaptic connections stabilize and strengthen. Synaptic pruning begins during childhood and accelerates in adolescence, with the prefrontal cortex maturing in midadolescence. This correlates with the maturation of basic cognitive processes by the age of sixteen.

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254 Steinberg, Adolescent Risk-Taking, supra note__.
255 Bridie Scott-Parker et al., The Influence of Sensitivity to Reward and Punishment, Propensity for Sensation Seeking, Depression, and Anxiety on the Risky Behaviour of Novice Drivers: A Path Model, 103 BRITISH J. OF PSYCHOLOGY 248, 250 (2012) (citing reported studies) [hereinafter Scott-Parker et al., Risky Behaviour of Novice Drivers].
256 Id.
257 Luna et al., supra note__, at 101.
258 Steinberg, Adolescent Risk-Taking, supra note__ at 93-94. The cognitive control system also includes parts of the corpus callosum, which connects the left and right hemispheres. Beatriz Luna, Developmental Changes in Cognitive Control Through Adolescence, in ADVANCES IN CHILD DEVELOPMENT AND BEHAVIOR 233, 240 (Patricia Bauer ed., 2009).
259 Steinberg, Adolescent Risk-Taking, supra note__, at 93.
260 Nitin Gogtay & Paul M. Thompson, Mapping Gray Matter Development: Implications for Typical Development and Vulnerability to Psychopathology, 72 BRAIN & COGNITION 6, 7 (2010); Tomas Paus, Mapping Brain Maturation and Cognitive Development During Adolescence, 9 TRENDS IN COGNITIVE SCI 60, 62 (2005); Arthur W. Toga et al., Mapping Brain Maturation, 29 TRENDS IN NEUROSCIENCES 148, 149-50 (2006). There is also some evidence of synaptic pruning in the association areas (areas
Second, myelination (a process involving the insulation of existing connections between neurons with a fatty layer that improves neural connectivity) continues within the regions of the cortex and between the different cortical regions through adolescence and into the twenties. This change correlates with observed behavioral improvements in higher-order and executive functions (future orientation, planning, response inhibition, spatial working memory, etc.) associated with the integrated functioning of multiple prefrontal regions of the brain.

Third, myelination also continues between the cortex and other regions of the brain, including connections between regions involved in social and emotional information processing, and those involved in cognitive control processes (especially the prefrontal regions). The increased connectivity between these regions correlates with coordination of affect (the external expression of emotions) and cognition. As a result, the emotional regulation and impulse control necessary for safe driving both improve through the midtwenties. Strategic planning, anticipation of future consequences, and resistance to neutral (as opposed to antisocial) peer influence and peer influence in general all follow the same trajectory, increasing linearly from preadolescence through late adolescence and early adulthood.

In summary, adolescents’ basic cognitive abilities are mature by the age of sixteen, giving them the capacity to reason, learn, process information, and make rational decisions. But the heightened sensitivity to reward that increases and peaks around midadolescence inclines young people towards risk taking, sensation seeking, and impulsivity—all elements of the immature development of self-regulatory capacities. This lack of regulatory competence may dominate throughout the brain which connect its different regions and support the complex integration of interregional function). Luna, supra note __, at 238.  

261 Geier & Luna, supra note __, at 216; Gogtay & Thompson, supra note __, at 7; Luna, supra note __, at 237-41; Tomas Paus, Growth of White Matter in the Adolescent Brain: Myelin or Axon?, 72 BRAIN & COGNITION 26 (2010); Steinberg, Adolescent Risk-Taking, supra note __, at 94-96. Since myelination involves the “gradual enhancement of established connections”—as opposed to the initial establishment of such connections—the “changes in white matter [represent] a refinement of executive control processes that are in place earlier in development.” Luna, supra note __, at 239-40.

262 Steinberg, Adolescent Risk-Taking, supra note __, at 94-96.  

263 Id. at 94-98. Important social and emotional information-processing regions of the brain include the limbic and paralimbic regions. Id. at 94-95.  

264 Id.  

265 Id: see also Sumter et al., supra note __, at 1016 (reporting “a steady increase in resistance to general peer influence with age”). See generally Luna et al., supra note __, at 101.
or overwhelm cognitive processes and shape their behaviors, especially in pressured situations or those triggering heightened emotion.\footnote{\citename{Luna, supra note 264, at 257; \citename{Steinberg, Adolescent Risk-Taking, supra note 264, at 96-98.}}

Adolescents’ susceptibility to the confounding influence of heightened reward salience on their decision making begins to decline after midadolescence, while their ability to exercise cognitive control increases, ultimately reaching mature levels in their twenties.\footnote{\citename{Luna, supra note, at 257; \citename{Steinberg, Adolescent Risk-Taking, supra note 264, at 97-98.}}

D. Unalterable Risk: The Combined Effects of Inexperience and Normative Developmental Processes

Professor Jeffrey Arnett, whose study of adolescence was cited by the U.S. Supreme Court in \textit{Roper v. Simmons},\footnote{543 U.S. 551 (2005) (holding unconstitutional the imposition of capital punishment on juveniles younger than 18).} points out that 16-year-olds are at a “markedly different stage of adolescent development” than are 18-year-olds.\footnote{\citename{Williams, Young Driver Risk Factors, supra note 265, at i4.}} By ages 15 or 16, adolescents indeed have the cognitive ability required to learn traffic rules and basic driving skills. As do all beginners, they must acquire the competence that comes only with practice in a variety of situations—which requires as much as 18-24 months of practice.\footnote{\citename{Braitman et al., supra note 272, at 52. “Some of the factors contributing to a large proportion of novice teenage drivers’ crashes (e.g., difficulty navigating slippery roads, not looking thoroughly at other vehicles or traffic controls) point to the importance of teenagers obtaining adequate amounts of practice driving in a variety of situations.” Id.}} Experience, and the time and practice required to acquire it, are thus essential if the novice driver is to develop true expertise. The importance of skill acquisition, and the extended process required to acquire it, may explain the belief of many policymakers, practitioners, and even researchers new to the field that better education and training—leading to more rapid improvement in adolescents’ driving skills—might be the solution to the young driver problem.\footnote{\citename{Subcomm. Young Drivers, Future Directions for Research, supra note 272, at 7.}} The Transportation Research Board’s Subcommittee on Young Drivers soundly rejected this view as misguided, explaining that those who hold it base it on another “commonly held, but mistaken, view—that the majority of adolescents are sufficiently mature and that...
their primary crash risk factor is driving inexperience." Empirical data comparing the crash rates of younger and older novices and research in adolescent development convincingly demonstrate otherwise.

Driving inexperience is not the overriding, or even primary cause, of adolescent crash risk. At younger driver ages—i.e. 15-17— inexperience is secondary to developmental immaturity; not until later ages do different levels of driving experience account for more of the differences in crash rates.

The self-regulatory capacities essential to competent and safe driving are still immature in adolescence, as observed in research of adolescent behavior generally and driving behavior more specifically, and supported by research of the adolescent brain. The incomplete, ongoing development of the capacities required to regulate their own behavior and emotions, the impairment of their decision-making abilities in pressured situations, and their inclination towards risk-taking behavior are all characteristics typical of adolescence—and all confound their execution of the nascent driving competence they do possess.

III. PROPOSED LEGAL RESPONSES

Despite more than a decade of legislative efforts of various sorts, 16- and 17-year-olds continue to have the highest crash rates of all drivers, and motor vehicle crashes continue to be the leading cause of their deaths. Existing measures, even those having some positive effects, insufficiently safeguard both young drivers and the public at large from young driver's immaturity and inexperience. Instead, “the sheer magnitude of the injuries and fatalities that continue to result from teen crashes” alone, according to the published report of an interdisciplinary workshop held at the National Academies, “shows that current prevention efforts are inadequate.”

272 Id.

273 See supra Part I.A.2.

274 See supra Parts II.C.

275 Id.; Groeger, supra note __, at 231; Williams, Young Driver Risk Factors, supra note __, at S.i.4.

276 See supra Parts II.C.1 & 2.

277 Mayhew et al., Why 16?, supra note __, at 19.

278 Id.

how to approach the serious public health problem posed by young drivers must, if future regulatory efforts are to accomplish what past efforts have not, take account of “the complexity of the driving task, the nature of adolescent behavior, and how features of adolescent development can interact with driving inexperience to heighten crash risk.”

Part I delineated the nature and scope of the young driver problem and the challenge it presents lawmakers. Part II gathered and interrelated cross-disciplinary research whose insights may be brought to bear on legislative efforts to address this significant public health problem. This Part derives from the first two a set of legal proposals to address it.

I argue that the severity of the young driver problem and its roots in unalterable developmental characteristics of adolescence point to a set of regulatory reforms capable of all-but-eliminating adolescent crash risk—simultaneously (1) lowering the age of learner’s licensure and (2) raising the ages of provisional and full licensure. Traffic safety researchers and lawmakers alike largely avoid even discussing this reform, largely for political reasons. I argue for evidence-based advocacy to help overcome these political hurdles.

I next suggest a number of (second-best) intermediate measures whose passage would, along with many of the reforms already enacted by the states, likely further reduce the crash and fatality risks for teen drivers.

Finally, I conclude that all of these suggested measures—from the most far-reaching to the slightest—easily fall within the purview of state and federal regulatory authority and comport with current constitutional protections afforded both young people and their parents.

A. Effectively Eliminating Adolescent Crash Risk

Allan Williams and colleague David Preusser, each having completed more than two decades of highly-regarded research in traffic and highway safety, have concluded that “[o]ne way to address the young driver problem would be to follow the Europeans and simply delay driver licensing until adolescent development is largely

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280 Subcomm. Young Drivers, Future Directions for Research, supra note __, at 7.

281 Graham & Gootman, supra note __, at S.255.
complete.” They reject this otherwise-indicated approach, perceiving two barriers to its success—“there remains [1] the need to accumulate driving experience and [2] the need for mobility, especially in suburban and rural areas.”

I contend that, while the costs of raising the age of licensure should be balanced against any gains in road safety, they and others who consider these questions overstate the extent to which 16- and 17-year-old licensure serves a social function so critical that its loss outweighs the gains in safety made by delaying that licensure.

This section proposes (1) lowering the age of learner’s licensure in order to facilitate young drivers’ accumulating significant driving experience prior to unsupervised driving, and (2) raising the age of unsupervised (provisional and full) licensure to counteract the effects of developmental immaturity on young drivers’ crash risk.

1. Lowering the Age of Learner’s Licensure

Inexperience and lack of driving skill contribute to the heightened crash risk of novice drivers. The driving experience acquired by adolescents during mandatory learner’s periods, and resulting increases in skill, account for some of the success of licensing systems that impose those requirements.

Researchers have been working to develop improved driver education and training methods (e.g., computer-based instruction) to make the process of skill-acquisition faster and less risky, but themselves admit that “there is presently little evidence that any kind of education or training other than ‘just driving,’ effectively reduces crash rates.” Acquiring experience thus takes time, but evidence suggests that it is time well spent. As Professor Waller noted, “practice that occurs over time, that is, distributed practice, results in better learning than practice that occurs all at once . . . Early acquisition of driving skill should occur over an extended period.”

I thus argue that adolescents should begin the process of driving-skill acquisition as early as is practicable, but only under those conditions demonstrated to carry

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283 Williams & Preusser, supra note __, at 335.
284 See supra Part II.B.
285 See supra Part I.B.3.
286 Foss, supra note __, at 185-8.
287 Waller, Genesis of GDL, supra note __ at 18.
the lowest possible risk (outside of a simulated environment)—i.e., adult supervision.\footnote{288 See supra Part II.A.2.}

By ages 15 or 16, adolescents’ cognitive capacities are comparable to those of adults, and they are able to learn the rules governing driving and acquire basic driving skills.\footnote{289 See supra Part II.C.} For young beginning drivers, driving under adult supervision is safe; whereas the crash rates for all novice (unsupervised) drivers are highest in the first months of independent driving, very few learner drivers—who overwhelmingly have less driving experience than do novices—crash while driving with adult supervising passengers.\footnote{290 See supra Part II.C.} When crashes involving learner’s permit holders do occur, they typically involve learners driving unsupervised, in violation of permit requirements.\footnote{Mayhew et al., Collision Rates Among Novice Drivers, supra note __, at 684; Williams & Tison, supra note __, at 9.} Based on the weight of this evidence, the authors of a study that compared the crash rates of young drivers accompanied by older versus younger passengers “strongly recommended that younger drivers [be] accompanied by one or more older passengers.”\footnote{291 Hedlund et al., supra note __, at 110 (internal citations omitted).}

The safety benefits of an extended period of learner’s licensure, moreover, have found empirical support. In Sweden, for example, the age of full licensure has long been 18. The age of learner’s licensure was lowered in 1993, however, from 17.5 to 16.\footnote{292 Lee & Abdel-Aty, supra note __, at 1711.} Studies found that drivers who obtained learner’s permits at age 16 accumulated more hours of supervised practice (without any pre-licensure increase in crash risk), and had a 35% decrease in crash risk upon acquiring full licensure at age 18.\footnote{Patricia F. Waller et al., Changes in Young Adult Offense and Crash Patterns Over Time, 33 ACCIDENT ANALYSIS AND PREVENTION 117, 117-18 (2001) (citing Nils Petter Gregersen, Sixteen Years Age Limit for Learner Drivers in Sweden—an Evaluation of Safety Effects, 32 ACCIDENT ANALYSIS AND PREVENTION 25 (2000)). See also, Lawrence P. Lonero, Trends in Driver Education and Training, 35 AM. J. OF PREVENTIVE MEDICINE (Supp. 3) S.iii.316, S.iii.318 (2008).}

In the United States, it is likely that providing for as extended a period of supervised driving practice as is feasible will increase the total amount of supervised driving practice, with attendant gains in experience reducing crash risk upon the acquisition of unsupervised licensure. It is also possible that lowering or maintaining the age of learner’s licensure—to between 14 and 16—may have the political
benefit of providing young people with a tangible sense of progress towards full licensure, and avoid depriving them altogether of some of the benefits of driving.

2. *Raising the Age of Provisional and Full Licensure*

The younger the age at which a driver becomes licensed, the higher the crash (and fatal crash) risk. Because inexperience is a factor, lowering and/or extending the supervised learner’s stage as I propose above can help reduce the crash risk of younger drivers by providing for more practice and driving experience pre-licensure. Moreover, studies suggest that age-related developmental characteristics contribute more significantly to crash risk at the younger licensing ages. In other words, practice-hours may somewhat reduce but cannot overcome the risks posed by developmental immaturity.

Simply put, the major contributor to crash reduction in states with graduated licensing is the delay in licensure that tends to accompany certain elements of the licensing system. Higher minimum ages for acquiring a learner’s permit, minimum permit-holding periods, and minimum practice-hour requirements all tend to delay the age at which teens become licensed. States whose graduated licensing systems have resulted in delays in licensure have generally seen the largest crash reductions among young drivers. Under these systems, younger and less mature, and most crash-prone, drivers have less unsupervised driving exposure (i.e., they spend fewer hours on the road). The result is a predictable reduction in crashes.

While the primary purpose of graduated licensing requirements has been to provide beginners with experience in low-risk situations, there is evidence suggesting “that when the effects of differences in the minimum learner’s permit and licensing ages are accounted for, no further significant benefits are gained from the minimum holding period or minimum practice hours requirements.” Thus, those licensing provisions that operate to raise the age of licensure—even by requiring, for example, that a 16-year-old hold a learner’s permit for

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295 Williams, *Young Driver Risk Factors, supra* note __, at S.i.4.
296 McCartt et al., *supra* note __, at 698.
297 *NAT’L RES. COUNC., PREVENTING TEEN MOTOR CRASHES, supra* note __, at 10; Williams & Maybeh, *supra* note __, at S.326.
298 *Id.*
299 *Id.*: McCartt et al., *supra* note __ at 16.
300 McCartt et al., *supra* note __ at 16.
or 8 months before applying for a higher level of licensure—indirectly effectuate at least part of the crash reduction that raising the minimum licensing age would effectuate directly.

Studies suggest that even slight age differences in the adolescent years can have measurable effects. Early studies of the effects of New Jersey’s age-17 licensing law associated it with reductions in 16-year-old crash involvement between 65 and 85 percent. \(^{301}\) Some of the reduction in driver crash involvement was offset by higher crash involvement of 17-year-old drivers, which seemed compatible with driver inexperience. \(^{302}\) Recent proposals predict, however, that a licensing system that both delays licensure to age 17 and implements elements of GDL provisions would lead to “major reductions” in young drivers’ crashes.\(^{303}\)

The United States is an early licensing country—indeed, the earliest licensing country in the developed world. The adoption of age 16 as the presumptive norm reflects both arbitrary convention and historical factors (i.e., the needs of agricultural communities) that no longer justify early licensure. \(^{304}\) Delaying unsupervised licensure can significantly diminish the effect of age-related developmental factors that contribute to adolescent crash risk. \(^{305}\)

Ideally, then, states would permit provisional licensure that allows for unsupervised driving under sharply curtailed circumstances no earlier than age 17, but preferably age 18. The age of full licensure would be increased to ages 18 or 19.

**B. Lowering Adolescents’ Crash Risk**

Short of (or in addition to) reducing the age and extending the duration of learner’s licensure and raising the ages of provisional and full licensure, other measures may help reduce the crash risk of young drivers. The interventions I suggest below are loosely based on a social-ecologic framework that conceptualizes public health problems as resulting from multiple interacting factors that operate at four broadly-

\(^{301}\) Allan F. Williams et al., *Variations in Minimum Licensing Age and Fatal Motor Vehicle Crashes*, 73 AM. J. OF PUBLIC HEALTH 1401, 1402 [hereinafter *Variations in Minimum Licensing Age*].

\(^{302}\) Id. at 1403. Despite the increased crash involvement of 17-year-olds, the net effect of the New Jersey law is, according to researchers, “strongly positive.” Id.

\(^{303}\) McCartt et al., *supra* note __ at 16.

\(^{304}\) Mayhew et al., *Why 16?*, *supra* note __, at 17-18.

\(^{305}\) Williams, *Young Driver Risk Factors*, *supra* note __, at S.i.4.
defined levels to influence behavior and health: First, the *intraperonal level* involves individual characteristics—judgment, decision-making processes, self-regulatory capacities (such as managing distractions), knowledge of driving rules and maneuvering skills, and perception of reaction to risk. Second, the *interpersonal level* involves interactions with others—e.g., peer and parental relationships. Third, the *institutional level* comprises those institutions and organizations that influence an individual, such as schools or churches. Finally, the *sociocultural level* incorporates both broad social norms as well as laws and mechanisms of their enforcement.

I thus suggest institutional- and sociocultural-level reforms to both influence and account for the behaviors that contribute to adolescent driving risk.

1. Institutional and Legal Reforms

The restrictions imposed on provisional-license-holders succeed in large part by protecting adolescents from the harmful effects of deficiencies in their regulatory capacities and driving skills until these have sufficiently matured. Additional restrictions may provide further protective benefits, such as those that prohibit either hand-held or hands-free devices (preventing cell-phone-use, texting, etc.) or other distractions.

In response to the overwhelming evidence of the negative effect of peer passengers, every state except South Dakota has enacted some form of passenger restriction on young drivers. While regulations restricting new teenage drivers have been effective in reducing their crash involvements of teen drivers, their effectiveness has been limited by teenage drivers’ well-documented and common noncompliance with the restrictions. Increased enforcement and mechanisms that facilitate their enforcement are required. An example of one such enforcement mechanism is the New Jersey requirement—recently upheld by the State Supreme Court against Constitutional challenge—

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307 *Id.* at s.337-38.
308 Keating & Halpern-Felsher, *supra* note __, at s.274.
309 *Id.*
310 Williams & Tison, *supra* note __, at 7.
311 Williams & Tison, *supra* note __, at 7; Lee & Abdel-Aty, *supra* note __, at 1703.
that all drivers under age 21 display highly visible decals on their vehicles.\textsuperscript{312}

Given nighttime and fatigue-related crash rates, most states have imposed nighttime driving restrictions on teenage drivers.\textsuperscript{313} Cognitive psychologist John Groeger has observed that nighttime driving restrictions may lessen some portion of the increased risk, but because adolescents are equally fatigued in the morning hours (and often throughout the day), nighttime restrictions can only partially resolve adolescent fatigue-related driving risk.\textsuperscript{314} Additional reforms aimed at reducing both adolescent fatigue and the driving exposure of overly fatigued adolescents (some more difficult than others to implement) might include beginning the school day at a later time,\textsuperscript{315} increasing the availability of public- and school-provided transportation, and discouraging teens from driving to school by making student parking inconvenient or altogether unavailable.

2. Extralegal and Social Interventions

As discussed above, popular culture promotes skillful, daring, fast driving—particularly for males.\textsuperscript{316} “peers are the primary mediators of cultural attitudes toward safe driving versus risky driving . . . Clearly, efforts are needed to reshape and reemphasize teen driving, such that safe rather than risky driving is seen as the norm.”\textsuperscript{317}

Both government and private entities have implemented various social and behavioral interventions in an attempt to reduce teens’ risky driving. Safe-driving public-service announcements (PSAs) are an example of such antecedent interventions.\textsuperscript{318} There has been little research on the impact of PSAs, with assessments generally showing them to be marginally effective or ineffective.\textsuperscript{319} When they do

\textsuperscript{312}Trautman v. Christie (A-16) (067705) (per curiam Aug. 6, 2012).
\textsuperscript{313}McCartt et al., supra note __, at 698.
\textsuperscript{314}Keating & Halpern-Felsher, supra note __, at S.274.
\textsuperscript{315}Id.
\textsuperscript{316}See supra Part I.C.
\textsuperscript{317}Id. at S.276.
\textsuperscript{318}Researchers have developed a more sophisticated understanding of some of the characteristics that enhance the influence of the antecedent messages. For a discussion of these, see Kimberly P. Whittam, et al., Effectiveness of a Media Campaign to Reduce Traffic Crashes Involving Young Drivers, 36 J. OF APPLIED SOC. PSYCHOLOGY 614, 615 (2006).
\textsuperscript{319}Id. at 615.
demonstrate positive results, moreover, benefits tend to last only as long as the PSA intervention itself. For example, one 4½-month multimedia traffic-safety campaign that targeted young drivers in northeastern Tennessee correlated with a 21.6% decrease in at-fault crashes of 16-19-year-old drivers (a control location elsewhere in the state showed no decrease in crashes), but the decrease lasted only for the duration of the PSA campaign itself.\(^{320}\) The authors of the study noted that, even though the decrease in crash rate was significant, the common problem of “posttreatment behavior maintenance” limited its long-term efficacy.\(^{321}\)

Researchers have also identified factors that may contribute to gender differences in risky driving and crash risk. Some have suggested that the higher levels of testosterone present in male mid-teens (at levels 20 times higher than prepubescent levels) increase aggressive behavior generally, including aggressive driving.\(^{322}\) Males also have higher sensation-seeking tendencies than females, potentially motivating their risky driving behavior.\(^{323}\) Other researchers argue that socialization and conformity with gender norms are more significant factors.\(^{324}\) Thus, even in the presence of high levels of testosterone, they argue that “emerging research . . . suggest[s] that high levels of male hormones are associated with aggression only when aggression is a socially endorsed route to dominance . . . [R]isky driving is still only part of the masculine package because society has put it there, and there is no reason to believe that it cannot be replaced with a more constructive norm.”\(^{325}\)

Since popular culture and society in general associate risky driving with male identity, researchers have urged taking steps to undermine these associations and replace them with others (such as pairing masculinity with “responsible” rather than “skillful” or “daring”

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\(^{320}\) *Id.* The campaign’s theme was “What’s the Hurry?” and included two 30-second television announcements, two corresponding radio announcements, and a billboard display. *Id.* at 617-18.

\(^{321}\) *Id.* at 624-25.

\(^{322}\) See, e.g., Arnett, *supra* note __, at S.i.19. Female adolescents also experience elevated levels of testosterone, but it is a relatively modest increase compared to that experienced by males. *Id.*

\(^{323}\) Julien Cestac et al., *Young Drivers’ Sensation Seeking, Subjective Norms, and Perceived Behavioral Control and Their Roles in Predicting Speeding Intention: How Risk-Taking Motivations Evolve with Gender and Driving Experience*, 49 SAFETY SCIENCE 424, 430 (2011). Cestac et al. conducted a study in France, concluding that men seem to perceive more social pressure to speed than do women. *Id.*

\(^{324}\) Sibley & Harré *supra* note __, at S.272; Cestac et al., *supra* note __, at 430.

\(^{325}\) Sibley & Harré *supra* note __, at S.272.
They acknowledge the difficulty in dislocating ingrained and widespread cultural practices. As sites in which to begin these sorts of efforts, though, they suggest public advertising and incorporating them into school curricula.

C. Meeting Political and Legal Challenges

This section first identifies two political hurdles to enacting licensure reform. I argue that the first—political inattention—is under-acknowledged by those working in the field, whereas the second—widespread popular resistance—is overstated. This section next turns briefly to the nature and scope of legal authority respectively granted state and federal governments to legislate in this area. Finally, it addresses the rights and interests of adolescents and their parents who will be most directly and immediately affected by regulatory reform. “Legislative change requires continuous effort, especially when safety has to compete with custom and convenience, as it so often does.”

1. Political Hurdles

Despite the impact of adolescent driving on public welfare, and the inadequacy of current regulatory structures, research by those who study adolescent development and health risk behavior has come slowly. Government support of such research has come even more slowly. From 1972-2008, for example, there were 314 federally-funded studies of adolescents and substance use, but only 15 federally-funded studies of adolescents and driving. The quantity of published research on teen driving in general pales in comparison with that on other adolescent health issues. Thus from 1985 to 2009, a search found 12,888 references for articles addressing teen smoking, compared to 1,601

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326 Sibley & Harré, Gender Role Socialization Model, supra note __, at 460.
327 Id.
328 Id.
329 Keating & Halpern-Felsher, supra note __, at S272.
330 Laird, supra note __, at 314. (“Longitudinal studies of adolescent development routinely track high-risk behaviors such as sexual promiscuity and drug use yet rarely consider driving behaviors even though driving is directly responsible for more teenage deaths.”). See also, Shope & Bingham, supra note __, at S.261.
331 Blackman & Abrams, supra note __, at s.285.
references for articles addressing teen driving.\textsuperscript{332} In light of the significant health burden imposed by motor vehicle crashes involving teen drivers, an initial challenge is to overcome this academic and political inattention. To do so requires concerted efforts to publicize the findings of traffic safety research, educate the public on the nature of the young driver problem, and advocate for reform at the state and federal legislative levels. A number of independent organizations (including, e.g., the Insurance Institute for Highway Safety) and state legislatures have made significant strides, but significant reductions in crashes and fatalities will not occur without widespread reform.

Legislators and academics both frequently express the view that increasing the age of licensure is not a politically feasible option,\textsuperscript{333} but studies suggest that they may overestimate the level of public resistance, and that such resistance may be more readily overcome than many believe.\textsuperscript{334} Surveys of parents consistently find significant support for raising the licensing age, and overwhelming majorities have supported increasing various restrictions on young drivers, such as mandatory learner’s phases. Importantly, in states where restrictions have been put into place, parents report near-universal support of them.

One study found that 1 in 5 parents reported that safety concerns had led them to attempt (usually unsuccessfully) to delay their children’s obtaining a learner’s permit.\textsuperscript{335} Another study surveying parents of graduating seniors in several Eastern states found that a significant majority supported minimum licensing ages of 17-18 or older in Connecticut (60%) and New York (61%). In New Jersey, where the minimum licensing age was already 17, 90% supported the higher licensing ages (with 65% endorsing age 17 and 25% endorsing ages 18 or older). Only in Delaware, an historically “easy-licensing” state, did a minority of parents (but a significant minority—37%) endorsing licensing ages of 17 or older.\textsuperscript{336}

In a study of Connecticut and Florida parents’ opinions on newly-enacted legislation in those states, 90% supported mandatory

\textsuperscript{332} Williams et al., \textit{Future Directions for Research, supra} note __, at 5.

\textsuperscript{333} Mayhew, \textit{supra} note __, at 19 (citing A.F. Williams, \textit{Laws and Regulations Applicable to Teenagers or New Drivers: Their Potential for Reducing Motor Vehicle Injuries, in Young Driver Accidents—In Search of Solutions} (Daniel R. Mayhew et al., eds., Traffic Injury Research Foundation, Ottawa, Ontario, 1983) 43.

\textsuperscript{334} Williams & Mayhew, \textit{supra} note __, at S.325.

\textsuperscript{335} Scott-Parker et al., \textit{Psychosocial Factors Influencing Young Drivers, supra} note __, at 470.

\textsuperscript{336} \textit{Id.} at 5, Table 4, \textit{Preferred Minimum Licensing Age for Full-Privilege Driving}. 
supervised learner’s periods and nighttime curfews.\textsuperscript{337} In Connecticut, 82% of parents favored a nighttime curfew—even though the legislature had removed the curfew provision from the enacted statute.\textsuperscript{338} Even those parents who anticipated that the new laws would inconvenience them and their children strongly favored the new legislation.\textsuperscript{339} In Michigan, where legislation imposing supervised practice requirement passed only narrowly (and after other restrictions were removed from the proposed bill), the average number of hours of supervised practice reported by parents “was far more than that required, and parents described how the experience brought home to them how much the young driver needed even more practice. Most indicated that they would continue to place restrictions on their young driver, even after the state allowed unsupervised driving.”\textsuperscript{340}

Without question, delaying adolescent licensure will sacrifice some mobility and convenience. At the same time, research has demonstrated that in New Jersey, the only state with a licensing age above 16, that “licensure at age 17 has little effect on the lifestyle or employment of New Jersey 16-year-olds while producing a substantial reduction in their crash involvement.”\textsuperscript{341} Where to strike the balance between safety and mobility is a social decision.

\textbf{2. State Police Power, Federal Spending Power}

The issuance, regulation, and revocation of driver’s licenses all fall squarely within states’ police power to legislate to advance the public welfare and protect the safety of its citizens. Despite the importance to individuals of the ability to drive, courts have held that “the right to operate a motor vehicle is wholly a creation of state law; it certainly is not explicitly guaranteed by the Constitution, and nothing in that document . . . has even the slightest appearance of an implicit

\begin{footnotes}
\footnotetext[337]{Williams et al., \textit{Views of Parents}, supra note __, at 5.}
\footnotetext[338]{\textit{Id.}}
\footnotetext[339]{\textit{Id.}}
\footnotetext[340]{Waller, \textit{Genesis of GDL}, supra note __ at 20–21 (citing Patricia F. Waller, M.L. Olk, & Jean T. Shope, \textit{Parental Views of and Experience with Michigan’s Graduated Licensing Program}, 31 \textit{J. of Safety Research} 9 (2000). A proposed passenger restriction failed to pass, and nighttime restriction was shortened to restrict nighttime driving only from midnight to 5 a.m. \textit{Id.}}
\footnotetext[341]{Susan A. Ferguson, William A. Leaf, Allan F. Williams & David F. Preusser, \textit{Differences in Young Driver Crash Involvement in States with Varying Licensure Practices}, 28 \textit{Accident Analysis & Prevention} 171, 180 (1996).}
\end{footnotes}
guarantee of that right.” Driving is thus subject to state-imposed conditions that must satisfy only minimal constitutional requirements of reasonableness. So long as regulations satisfy minimum constitutional requirements, courts will not second-guess legislatures’ policy decisions.

The public has generally accepted, and courts have almost universally upheld, licensing requirements and other motor-vehicle regulations as valid exercises of states’ police power to promote public safety and welfare. Age-based restrictions have been no exception, and courts sustained them against both state and federal constitutional challenges. In a 1930 decision upholding a statute in the face of one such challenge, the Nebraska Supreme Court held that the state need only demonstrate that the “classification is reasonable.” It acknowledged that a minimum age requirement might very well deny an otherwise-competent person younger than the set minimum age the right to drive, but noted nonetheless that “[t]he line must be drawn somewhere,” and that although some persons below set age requirement might be better drivers even than some adults, “the fact remains that, as a class, they have not, at that age, attained the discretion and judgment which would make it safe for them to operate motor vehicles upon the highway.”

342 Berberian v. Petit, 374 A.2d 791, 794 (1977); Berberian v. Lussier, 139 A.2d 869, 872 (R.I. 1958) (“[T]he right to use the public highways for travel by motor vehicles is one which properly can be regulated by the legislature in the valid exercise of the police power of the state.”).

343 Sedlacek v. Ahrens, 530 P.2d 424, 426 (Mont. 1974) (holding that the state has the power to suspend or revoke a license if the licensee fails to comply with certain conditions); Thornhill v. Kirkman, 62 So.2d 740 (Fla. 1953) (same).

344 See, e.g., Trautmann v. Christie, 15 A.3d 22 (N.J. Super.A.D. 2011), 29 (“We decline to discuss plaintiffs’ policy arguments. The wisdom of [the state law requiring those under 21 to display decals on the outside of cars while driving] is a question for the Legislature not the courts.”).


346 See, e.g., Oleson v. Graunke, 229 N.W. 329, 330 (Neb. 1930) (holding that the State’s “limit of 16 years is not arbitrary but is a reasonable exercise of the police power, and . . . is not violative of either the state or Federal constitutions, which forbid the taking of private property without due process.”); See also, Charbonneau v. MacRury, 153 A. 457 (N.H.) (same).

347 Oleson v. Graunke, 229 N.W. at 330.

348 Id. See also Schultz v. Morrison, 91 Misc. 248, at 250 (observing that a New York statute prohibiting unsupervised driving by persons under 18 has by doing so “declare[d] that such persons do not possess the requisite care and judgment to run motor vehicles on the public highways without endangering the lives and limbs of
States may thus impose conditions on licensure that aim to ensure the competence of all drivers, and revoke licensure when drivers commit certain offenses. States’ authority to regulate licensure goes further, however, and they may revoke driver’s licenses even for non-driving offenses. Courts have upheld, for example, state statutes that revoke licensure for nonpayment of taxes, marijuana possession, automobile theft, and non-payment of child support.349

The federal government, on the other hand, lacks the power to regulate traffic safety or licensure. That is not to say, however, that the federal government lacks influence over highway and traffic safety measures. To the contrary, Congress has made effective use of its spending power, conditioning federal monies on state adoption of desirable legislation.350 For example, 21 became the drinking age only after Congress enacted the National Minimum Drinking Age Act, which reduced the amount of federal highway funds given to states that failed to raise their minimum legal drinking ages to 21.351

Congress continues to use its spending power to encourage the states to enact legislation aimed at improving traffic safety—including legislation targeting young drivers. This year, for example, Congress passed the Moving Ahead for Progress in the 21st Century Act, which included amendments to the Teen Traffic Safety Program.352 To encourage states to “improve traffic safety for teen drivers,” its provisions would fund state efforts to increase seatbelt use, reduce speeding, reduce “impaired and distracted driving,” and “reduce other behaviors by teen drivers that lead to injuries and fatalities.”353


350 “The Congress shall have the Power to lay and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common Defence and general Welfare of the United States.” U.S. CONST. ART. I, § 8.


353 Id. at § 402(m) (2012).
3. Adolescents’ and Parents’ Legal Rights

Although licensure and the mobility and autonomy that accompany it are undoubtedly of real importance to adolescents, it is quite inconceivable that courts would reverse a century-old course and consider driver’s licensure—let alone adolescent licensure—a right entitled to any sort of heightened constitutional protection. Research uncovered no such intimation in courts’ holdings, which have instead uniformly rejected such arguments. The Supreme Court of Rhode Island for example, found the issue an easy one to decide, stating that when the claimed right is the “right to operate a motor vehicle on the public highways, . . . we have no hesitation in holding that this is not a fundamental right.”354 Litigants have also sought, also unsuccessfully, to argue that the right to drive is necessary to secure another fundamental right—the right to interstate travel. The same Rhode Island Court dismissed the argument that the denial of licensure operated to interfere with that well-established right as “utterly frivolous.”355

Even if licensure fails to rise to the level of constitutionally-protected right, state classifications that draw distinctions between classes of individuals must comport with the requirements of the 14th Amendment’s Equal Protection Clause. Classifications drawn along certain lines are inherently suspect—namely those based on race, national origin, or alienage.356 The Supreme Court has held, however, that statutory distinctions based on age are not suspect and, unless they infringe a fundamental right, will be subjected only to the most deferential standard of review.357 Age-based classifications thus survive “if the legislature could have reasonably concluded that the challenged classification would promote a legitimate state purpose.”358 As noted above, courts have upheld minimum age requirements against equal protection challenges:

354 Berberian v. Petit, 374 A.2d at 794.
355 Berberian v. Petit, 374 A.2d at 794.
357 Massachusetts Bd. of Retirement v. Murgia, 427 U.S. 307 (1976) (holding that a statute requiring uniformed state police officers to retire at age 50 did not violate the Equal Protection Clause).
“The state has a legitimate interest in preventing the operation of motor vehicles by those unable to exercise mature judgment, that individualized testing for maturity in this context is a practical impossibility and that in the interest of highway safety a line had to be drawn somewhere. Such a line is necessarily inexact; it may well exclude some qualified individuals. Where rationality is the test, however, ‘a State does not violate the Equal Protection Clause merely because the classifications made by its laws are imperfect.’”

The research reported above merely extends the common-sense observations of early-20th-century legislators, as well as the empirically-grounded conclusions of both Congress (expressed in current and earlier versions of the Federal Highway Safety Act), of the heightened risks posed by teen drivers. Legislation informed by additional insights from this research that impose additional age-based restrictions on would almost surely survive this most deferential standard.

While parents have the presumptive right to direct the upbringing of their children, and some parents would undoubtedly prefer their children acquire licensure earlier rather than later, the state’s countervailing interest in the public welfare and its child citizens gives it expansive rights of regulation. Thus, the Supreme Court has upheld all manner of regulations that otherwise interfere with parental rights, such as a broad ability to regulate children’s educations. Conversely, parents wishing to delay their children’s acquiring licensure beyond a state-imposed minimum age would likely (as they currently do) be given that right, at least until their child reaches the age of majority.

Policymakers considering measures whose effect would constrict the liberties of a category of individuals consider more than whether their legislative efforts would survive constitutional scrutiny. Licensure restrictions implicate important liberties important to individuals, even if these do not merit fundamental constitutional protection. Failure to give them full consideration contravenes the nation’s historical commitment (in theory, if not always in practice) to the foundational norm of individual liberty. Yet even the most committed liberal

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360 See, e.g., Meyer v. Nebraska, 262 U.S. 390, 401 (1923) (invalidating state legislation restricting the teaching of foreign languages in elementary schools, but acknowledging “that the state may do much, go very far, indeed, in order to improve the quality of its citizens, physically, mentally and morally”).
generally agrees that liberties that individuals are themselves entitled to exercise include those which they are capable of exercising. Especially in contexts where individual decision-making is not purely self-regarding—i.e., where others will bear the negative externalities of incompetently-made decisions—the state is not only justified, but obligated, to withhold from individual—or in this case, delay their acquisition of—the unfettered right to exercise a certain liberty.

CONCLUSION

The immature regulatory competence of adolescents confounds the execution of their still-nascent driving skills in real-world contexts. For all beginners, the acquisition of driving skill comes only with guided practice and experience over many months. Guided practice is essential to expertise development. But only time and the development that comes with it can lead to the reliable exhibition of regulatory competence. Thus, licensure reform should provide for an extended supervised learning period, which safely begin in mid-adolescence (ages 15 or 16). Unsupervised licensure should be delayed until young people have gained the expertise that comes with practice and experience, and the regulatory competence that comes with age and development. This thus requires raising the age of unsupervised licensure, ideally to 18.