

2014

Liberty Without Capacity: Why States Should Ban Adolescent Driving

Vivian E. Hamilton

William & Mary Law School, vhamilton@wm.edu

Repository Citation

Hamilton, Vivian E., "Liberty Without Capacity: Why States Should Ban Adolescent Driving" (2014). *Faculty Publications*. 1731.
<https://scholarship.law.wm.edu/facpubs/1731>

LIBERTY WITHOUT CAPACITY: WHY STATES SHOULD BAN ADOLESCENT DRIVING

*Vivian E. Hamilton**

TABLE OF CONTENTS

I.	INTRODUCTION	1021
II.	ADOLESCENT DRIVING	1024
A.	PUBLIC HEALTH DIMENSIONS	1026
1.	<i>Single- vs. Multiple-Vehicle Crashes</i>	1028
2.	<i>Gender</i>	1028
3.	<i>Sixteen- and Seventeen-Year-Old Drivers vs. Older Teen Drivers</i>	1029
B.	REGULATORY CONTEXTS	1031
1.	<i>Regulation and Emergence of the Age of Licensure</i>	1032
2.	<i>Conventional Licensing</i>	1034
3.	<i>Graduated Driver Licensing</i>	1037
C.	SOCIO-CULTURAL CONTEXT	1040
1.	<i>Social Functions</i>	1040
2.	<i>Cultural Meanings</i>	1044
III.	THE ADOLESCENT DRIVER	1047
A.	CHARACTERISTICS AND CONTEXTUAL INFLUENCES	1048
1.	<i>Characteristics of Adolescent Driving</i>	1048
2.	<i>Contextual Influences on Adolescent Driving</i>	1049
3.	<i>Passengers, Older and Younger</i>	1049
4.	<i>Time of Day</i>	1051
5.	<i>Sleep Deprivation</i>	1052

* Associate Professor of Law, William & Mary School of Law. B.A. Yale College; J.D. Harvard Law School. For their generous comments, I thank Alfred Brophy, Naomi Cahn, Neal Devins, James Dwyer, Timothy Holbrook, Ronald Krotoszynski, Rebecca Green, Alan Meese, Sharon Rush, Kathryn Sabbeth, and the participants of the October 2012 Faculty Scholarship Conference hosted by Tulane Law School. For their excellent research assistance, I thank Lianna Bash and Cassandra Roeder.

B.	COMPLEX PSYCHOMOTOR SKILLS: EXPERTISE THROUGH EXPERIENCE.....	1053
1.	<i>Basic Driving Skills vs. Real-World Driving Competence</i>	1053
2.	<i>The Role of Guided Practice</i>	1054
C.	THE EFFECTS OF REGULATORY IMMATURITY	1055
1.	<i>Insights from Behavioral Psychology</i>	1057
2.	<i>Insights from the Developmental Neurosciences</i> ..	1059
D.	UNALTERABLE RISK: THE COMBINED EFFECTS OF INEXPERIENCE AND NORMATIVE DEVELOPMENTAL PROCESSES	1063
IV.	PROPOSED RESPONSES, LEGAL AND EXTRALEGAL.....	1064
A.	THE LIBERAL STATE'S ENDS, IMMATURE CITIZENS' INTERESTS	1066
B.	EFFECTIVELY ELIMINATING ADOLESCENT CRASH RISK.....	1067
1.	<i>Lowering the Age of Learner's Licensure</i>	1067
2.	<i>Raising the Age of Provisional and Full Licensure</i>	1069
C.	REDUCING ADOLESCENT CRASH RISK	1071
1.	<i>Institutional and Legal Reforms</i>	1071
2.	<i>Extralegal and Social Interventions</i>	1072
D.	POLITICAL AND LEGAL CHALLENGES	1074
1.	<i>Political Hurdles</i>	1075
2.	<i>State Police Power, Federal Spending Power</i>	1077
3.	<i>Adolescents' and Parents' Legal Rights</i>	1080
V.	CONCLUSION.....	1083

I. INTRODUCTION

Car crashes kill more teens each year than any other cause;¹ and of the crashes in which they are involved, teens are overwhelmingly at fault.² Decades of law reform efforts have led to mandatory seatbelt laws, an increased legal drinking age, and graduated-driver-licensing systems.³ Yet traffic fatalities, which have held steady for nearly a decade, account for nearly 40% of all deaths of sixteen- to nineteen-year-olds.⁴ Adopting sixteen as the presumptive age of licensure has made the United States the earliest-licensing nation in the developed world.⁵ U.S. teens acquire licenses to drive at younger ages and with less experience than do young people in other nations. They also have a greater risk of being injured or killed in a car crash than do their

¹ The next three leading causes of teen death—homicides, suicides, and cancer-related illness—trail only distantly. *Fatality Facts 2012: Teenagers*, INS. INST. HIGHWAY SAFETY, <http://www.ihs.org/ihs/topics/t/teenagers/fatalityfacts/teenagers/2012> (last visited June 1, 2014). In 2010, 3,115 thirteen- to nineteen-year-olds died in motor-vehicle crashes, 1,927 died as a result of homicides, 1,863 as a result of suicides, and 792 from malignant neoplasms, or cancers. *Id.*; see also Dara R. Blachman & David Abrams, *Behavioral and Social Science Contributions to Preventing Teen Motor Crashes: Systems Integrative and Interdisciplinary Approaches*, 35 AM. J. PREVENTIVE MED. S285, S285 (Supp. 2008) (“Motor-vehicle crashes are the leading preventable cause of death for U.S. teenagers . . .”).

² Studies have found young drivers to be at fault in 75% to 80% of the car crashes in which they are involved. See Keli A. Braitman et al., *Crashes of Novice Teenage Drivers: Characteristics and Contributing Factors*, 39 J. SAFETY RES. 47, 52 (2008) (finding that three-fourths of the teenagers studied were at fault); 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 SCI. 1917, 1917 (2012) (noting that nearly eight out of ten novice drivers in Queensland, Australia were found at fault in the car accidents in which they were involved from 1998 to 2008).

³ See *infra* Part II.A. Graduated licensing requires beginning drivers to obtain first a learner’s permit allowing only supervised driving for a specified period, then a provisional license allowing unsupervised driving subject to restrictions, and lastly, full licensure. See *infra* Part II.B.3.

⁴ NAT’L RESEARCH COUNCIL ET AL., PREVENTING TEEN MOTOR CRASHES: CONTRIBUTIONS FROM THE BEHAVIORAL AND SOCIAL SCIENCES, WORKSHOP REPORT 7 (2007).

⁵ See Patricia F. Waller et al., *Changes in Young Adult Offense and Crash Patterns Over Time*, 33 ACCIDENT ANALYSIS & PREVENTION 117, 118 (2001) (“In industrialized nations other than the US, driver licensure does not ordinarily occur until age 17 or 18.”). Six states license prior to age sixteen (Idaho, Montana, New Mexico, North Dakota, South Dakota, and South Carolina); the majority of states—thirty-seven—allow learner’s permits prior to age sixteen, but not licenses; nine states allow learner’s permits only at age sixteen (Connecticut, Delaware, District of Columbia, Kentucky, Massachusetts, New Jersey, New York, Pennsylvania, and Rhode Island.). Allan F. Williams & Julie Tison, *Motor Vehicle Fatal Crash Profiles of 13–15-Year-Olds*, 43 J. SAFETY RES. 145, 146 (2012).

counterparts in other developed nations.⁶ Driving, then, is arguably the greatest public health threat facing U.S. teens.⁷

This Article draws on principles of social ecology to explain adolescent driving as a public health issue comprising complex adolescent-environment interactions.⁸ This explanation interrelates research from the social and developmental sciences (public health; traffic safety; applied, behavioral, cognitive, developmental, and social psychology; and developmental neuroscience). It also accounts for existing regulatory structures and, with an eye towards potential reform, considers political challenges, constitutional boundaries, and the basic obligations of the liberal democratic state to its immature citizens.

Despite the tremendous costs to public health imposed by adolescent driving, and the wide range of legal and policy issues implicated, neither legal academics working in the area of public health law nor those working in adolescent rights have focused attention on adolescent licensure.⁹ While our academic inattention might be explained, it can no longer be justified nor excused.¹⁰

⁶ NAT'L RES. COUNCIL ET AL., *supra* note 4, at 1. Although the risk of crash-related injury and death is lower in countries including Australia, Canada, and the nations of the European Union (E.U.) than in the United States, crashes are the leading cause of teen death and injury in these countries 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).

⁷ See Braitman et al., *supra* note 2, at 47 (discussing elevated crash rates for teen drivers); Jean T. Shope & C. Raymond Bingham, *Teen Driving: Motor-Vehicle Crashes and Factors That Contribute*, 35 AM. J. PREVENTIVE MED. S261, S263 (2008) (similar); WORLD HEALTH ORG., *YOUTH AND ROAD SAFETY* 2-3 (Tami Toroyan & Margie Peden eds., 2007), available at http://whqlibdoc.who.int/publications/2007/9241595116_eng.pdf?ua=1 (noting that road traffic injuries are also the leading cause of death for teens worldwide).

⁸ See Carol W. Runyan & Michael Yonas, *Conceptual Frameworks for Developing and Comparing Approaches to Improve Adolescent Motor-Vehicle Safety*, 35 AM. J. PREVENTIVE MED. S336, S336-38 (Supp. 2008) (describing the social-ecological framework and applying it to teen driving).

⁹ Legal academics have tended to focus attention on rights extended to young people in other regulatory contexts, such as abortion, medical decisionmaking, and juvenile justice. This work has in recent years begun to consider various law and policy implications of research in child and adolescent development. This research has perhaps received most attention in the juvenile justice context, in which questions of socio-emotional control and decisionmaking capacity are central. See, e.g., ELIZABETH S. SCOTT & LAURENCE STEINBERG, *RETHINKING JUVENILE JUSTICE* 160-65 (2008) (discussing the MacArthur Juvenile Adjudicative Study, a large-scale study designed to compare the specific capacities of juveniles and adults that are directly implicated in assessing adjudicative competence); Catherine J. Ross, *A Stable Paradigm: Revisiting Capacity, Vulnerability and the Rights Claims of Adolescents after Roper v. Simmons*, in *LAW, MIND & BRAIN* 183, 184-87 (Michael Freeman &

Law reform efforts to date have had limited success not only because they have only imperfectly taken account of extant research, but also because they have been politically tentative, scattered, and piecemeal. To effectively address this critical public health issue, regulatory structures would take account of the accumulated contributions from this research and analyze its policy implications. This Article does so and argues for the most effectual legal reforms and extralegal interventions to which this examination inexorably points.

To that end, it proceeds in three parts. Part II places the issue of adolescent licensure and driving in social, legal, and cultural context. It first surveys the nature and public health implications of teen crashes, particularly the disproportionate number of crashes caused by adolescent drivers aged sixteen to seventeen. It then traces the evolution of state licensure regulation and assesses the current regulatory landscape. Finally, it describes how adolescent licensure and driving convey cultural meanings and perform social functions wholly apart from any utilitarian transportation function.

Insights from learning theory and adolescent development help explain the observed characteristics of adolescent driving and the

Oliver R. Goodenough eds., 2009) (discussing the impact of MRI research on the Court's decision in *Roper v. Simmons* holding that the death penalty cannot constitutionally be applied to crimes committed when the defendant was a minor). The trend has become sufficiently strong that legal commentators and researchers alike have cautioned against improvident or premature use of the still-developing scientific literature in policymaking. See, e.g., Emily Buss, *What the Law Should (and Should Not) Learn from Child Development Research*, 38 HOFSTRA L. REV. 13, 14–15 (2009) (arguing against a narrow focus on capacity and developmental “facts” in favor of a broader assessment of developmental “effects” when determining how developmental differences should shape children’s rights); Terry A. Maroney, *The False Promise of Adolescent Brain Science in Juvenile Justice*, 85 NOTRE DAME L. REV. 89, 89 (2009) (warning that both relevant legal doctrine and shortcomings inherent to the science itself limit the applicability of developmental neuroscience to juvenile justice issues); Stephen J. Morse, *Lost in Translation?: An Essay on Law and Neuroscience*, in 13 LAW AND NEUROSCIENCE 529, 562 (Michael Freeman ed., 2010) (“Neuroscience has the potential to make internal contributions to legal doctrine and practice if the relation is properly understood. For now, however, such contributions are modest at best . . .”); Laurence Steinberg, *Should the Science of Adolescent Brain Development Inform Public Policy?*, AM. PSYCHOLOGIST 739, 747 (2009) (noting a number of limiting factors when using neuroscience to inform public policy).

¹⁰ 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).

contextual influences that affect it, for better and for worse. Part III surveys this cross-disciplinary research, laying the empirical foundations for the recommendations made in Part IV. It examines research that aims to distinguish the development-related causes of adolescent crash risk (which are normative and not susceptible to change through external interventions) from experience-related causes (which are amenable to interventions—specifically, education and driving practice).

In light of the state's basic obligations to its immature citizens, Part IV argues that states ought to adopt the only regulatory adjustment capable of effectively eliminating the leading cause of adolescent death—raising the minimum unsupervised driving age. At the same time, it suggests retaining or lowering the age of learner's licensure (the age at which adolescents may drive under adult supervision). It then provides a set of interventions short of raising the age of licensure that would still provide some benefit. Finally, it anticipates and aims to meet political and legal objections.

II. ADOLESCENT DRIVING

Adolescent driving is a complex social and public health issue. Principles of social ecology aim to explain complex person-environment interactions by identifying and taking account of the interrelationships between personal, -social, cultural, and institutional contexts that form the environment in which persons live.¹¹ Because socio-ecological models examine multiple levels and sources of influence on behavior, they can also help identify multiple levels of interventions.¹² Multilevel interventions can be particularly effective in changing behavior, especially in the public health context.¹³

I draw on a socio-ecologic framework to characterize adolescent driving and then to propose legal reform and other interventions most likely to be effective. The framework conceptualizes public

¹¹ See generally Lindsay McLaren & Penelope Hawe, *Ecological Perspectives in Health Research*, 59 J. EPIDEMIOLOGY & COMMUNITY HEALTH 6 (2005) (outlining the elements of an ecological approach to public health issues).

¹² *Id.*

¹³ *Id.*

health problems as resulting from multiple interacting factors that operate at four broadly defined levels to influence behavior: First, the *intrapersonal level* involves individual characteristics—judgment, decisionmaking processes, self-regulatory capacities (such as managing distractions), knowledge of driving rules and maneuvering skills, and perception of and reaction to risk.¹⁴ Second, the *interpersonal level* involves interactions with others—e.g., peer and parental relationships.¹⁵ Third, the *institutional level* comprises those institutions and organizations that influence an individual, such as schools or churches.¹⁶ Finally, the *sociocultural level* incorporates both broad social norms as well as laws and the mechanisms of their enforcement.¹⁷

This Part first describes the public health dimensions of adolescent driving. 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.¹⁸ 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.¹⁹ 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.”²⁰

To mitigate the dangers posed by immature drivers, states imposed minimum age and other requirements for licensure.²¹ This Part next chronicles the evolution of relevant aspects of state licensing and regulatory structures, and analyzes their relative successes and failures.

¹⁴ Runyan & Yonas, *supra* note 8, at S337.

¹⁵ *Id.*

¹⁶ *Id.* at S337–38.

¹⁷ *Id.* at S338.

¹⁸ See *infra* notes 24–27 and accompanying text.

¹⁹ See J.A. Groeger, *Youthfulness, Inexperience, and Sleep Loss: The Problems Young Drivers Face and Those They Pose for Us*, 12 INJ. PREVENTION, at i19, i19 (Supp. I 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.”).

²⁰ T.O. Abbott, *The Lawmaker and the Automobile: Uniformity of Laws Desirable*, 54 OUTING MAG. 613, 618 (1909).

²¹ See *infra* notes 60–62 and accompanying text.

Driving is culturally significant, and it serves social functions wholly unrelated to transportation.²² This Part concludes with an examination of the socio-cultural meanings and functions of driving and their particular salience for adolescents. It thus provides a fuller understanding of adolescent licensure and brings into sharper focus what may be lost if states further constrict or withdraw from adolescents altogether the entitlement to early licensure.

A brief definition of terms is in order: “teen” here will denote a category of individuals defined by chronological age—those thirteen to nineteen; “adolescence” will denote a category defined by developmental stage—that between childhood and adulthood, generally spanning ages twelve to seventeen;²³ and “emerging adulthood” will denote the developmental stage between adolescence and adulthood generally spanning ages eighteen to twenty-four.

A. PUBLIC HEALTH DIMENSIONS

Teen drivers aged sixteen to nineteen crash at rates four times higher than those twenty and older.²⁴ This group of teen drivers also has nearly three times the *fatal* crash rate per mile driven.²⁵ An estimated 48,000 sixteen- to nineteen-year-olds will die in car crashes between 2003 and 2012, and well over 2 million more will suffer crash-related injuries.²⁶ Even higher numbers of nonteenaged drivers, passengers, and pedestrians, moreover, are injured or killed each year in crashes caused by teen drivers.²⁷

States, often prodded by the promise of federal monies, have enacted various measures to reduce crash-related injuries and fatalities among teens and the general population. These

²² See *infra* Part II.C.

²³ See Charles Geier & Beatriz Luna, *The Maturation of Incentive Processing and Cognitive Control*, 93 PHARMACOLOGY, BIOCHEMISTRY & BEHAV. 212, 212 (2009) (defining “adolescence” similarly).

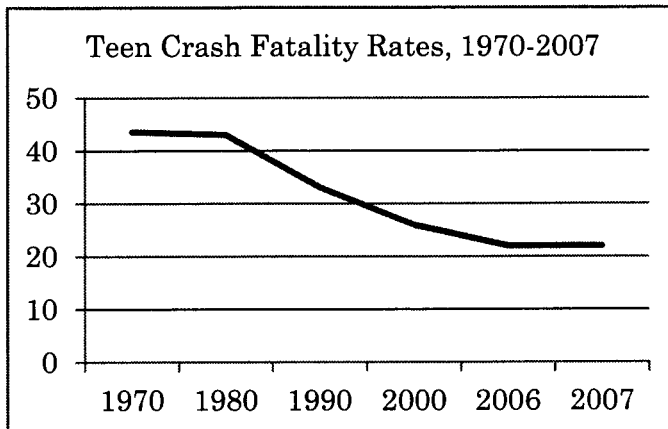
²⁴ Braitman et al., *supra* note 2, at 47.

²⁵ INS. INST. HIGHWAY SAFETY, *supra* note 1.

²⁶ See NAT’L RES. COUNCIL ET AL., *supra* note 4, at 7 tbl.2-1 (reporting analysis based on calculations from the Fatality Analysis Reporting System). In 2004 alone, for example, more than 300,000 fifteen- to twenty-year-olds were injured in collisions. *Id.*

²⁷ 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 5, at 146.

measures have included seatbelt laws, an increased legal drinking age, and stricter requirements for acquiring early licensure.²⁸ Together with improved vehicle safety, these measures have yielded positive effects. The crash-related death rate for fifteen- to nineteen-year-olds peaked in 1970 at 43.6 deaths per 100,000 resident population, then began to decline—first modestly, reaching 43.0 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 in 2000, 23.3 in 2006, then remaining at 22.0 in the years that followed.²⁹ Table 1 graphically depicts this trend.

Table 1.³⁰

²⁸ NAT'L RES. COUNCIL ET AL., *supra* note 4, at 2.

²⁹ NATIONAL CENTER FOR HEALTH STATISTICS, HEALTH, UNITED STATES, 2010: WITH SPECIAL FEATURE ON DEATH AND DYING 176–79 tbl.37 (2011). Researchers calculate crash rates using different methods, all of which portray crash prevalence based on some unit of exposure. Global levels of exposure include, for example, 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 7, at S262. 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 per week in 1975 but 200 miles per week in 2000, a crash rate that remained unchanged or even increased slightly might 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.

³⁰ NAT'L CTR. HEALTH STAT., *supra* note 29, at 176, tbl.37; see also Shope & Bingham, *supra* note 7, at S262 fig.1 (breaking the rates down by gender).

Crashes involving teen drivers impose significant economic costs, which exceeded \$40 billion annually even a decade ago.³¹ 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 the injured family members, the costs of caring for them, and frequently, the loss of earnings of non-injured family members who must reallocate their time from market to caregiving work.³²

This section next describes characteristics of adolescent crash involvement generally. It then focuses more closely on the crash involvement of teens of different ages.

1. *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.³³ 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.³⁴ For example, one study of newly licensed teen drivers in Connecticut found that, in the crashes in which the teenagers were at fault (76% of the crashes in which they were involved), nearly 40% occurred when the driver ran off the road.³⁵

2. *Gender.* The crash rates for both female and male young drivers are significantly higher than for older drivers.³⁶ 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

³¹ WORLD HEALTH ORG., *supra* note 7, at 8 (citing TRANSP. RESEARCH CTR., *YOUNG DRIVERS: THE ROAD TO SAFETY* (2006)). In 2002, motor-vehicle crashes involving fifteen- to twenty-year-old drivers cost the United States approximately \$41 billion. *Id.* Research uncovered no publicly-available cost estimates from more recent years.

³² WORLD HEALTH ORG., *supra* note 7, at 7–8.

³³ H.Y. Chen et al., *Risk and Type of Crash Among Young Drivers by Rurality of Residence: Findings from the DRIVE Study*, 41 ACCIDENT ANALYSIS & PREVENTION 676, 679 (2009).

³⁴ *Id.* at 681.

³⁵ Braitman et al., *supra* note 2, at 49, 50 tbl.5. The study found that 31% of the crashes involved rear-ending another vehicle, and 20% involved violating another car's right-of-way. *Id.* at 50 tbl.5.

³⁶ See *infra* note 40 and accompanying text.

female counterparts.³⁷ The difference between the crash rates of male and female teens has tended to be even greater, with male teens having much higher crash rates.³⁸ The gap between the crash rates of male and female teens has narrowed somewhat over time, but it remains significant.³⁹ For female adolescents, the overall crash rate per mile driven is currently about three times as high as the rate for older drivers; for male adolescents, the rate is six times as high.⁴⁰

3. *Sixteen- and Seventeen-Year-Old Drivers vs. Older Teen Drivers.* Traffic and highway safety researchers have conducted large-scale studies of the driving and crash patterns of “novice” drivers—i.e., those in the first two years of licensure permitting unsupervised driving.⁴¹ These studies have found crash rates to be consistently highest among sixteen-year-olds, declining substantially with each year of increasing age.⁴² Crash rates in

³⁷ J.J. Arnett, *Developmental Sources of Crash Risk in Young Drivers*, 8 INJURY PREVENTION, at ii17, ii19 (2002); Carol Holland et al., *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).

³⁸ NAT'L RES. COUNCIL ET AL., *supra* note 4, at 6–7.

³⁹ *Id.* The problem of young male driver fatalities exists in other developed nations as well. In Queensland, Australia, for example, 81% of all seventeen- to twenty-four year old drivers killed in car crashes in 2010 were male. Bridie Scott-Parker et al., *Speeding by Young Novice Drivers: What Can Personal Characteristics and Psychosocial Theory Add to Our Understanding?*, 50 ACCIDENT ANALYSIS & PREVENTION 242, 243 (2013).

⁴⁰ Robert D. Laird, *Teenage Driving Offers Challenges and Potential Rewards for Developmentalists*, 5 CHILD DEV. PERSP. 311, 311 (2011) (comparing adolescent crash rates with those for drivers aged thirty to fifty-nine).

⁴¹ See Nils Petter Gregersen et al., *Accident Involvement Among Learner Drivers—an Analysis of the Consequences of Supervised Practice*, 35 ACCIDENT ANALYSIS & PREVENTION 725, 727 (2003) (comparing the crash risk of drivers during supervised practice to that of drivers during the first two years of licensure); Daniel R. Mayhew et al., *Changes in Collision Rates Among Novice Drivers During the First Months of Driving*, 35 ACCIDENT ANALYSIS & PREVENTION 683, 684 (2003) (studying crash risk of drivers during first two years of licensure in Nova Scotia).

⁴² Anne T. McCartt et al., *Driving Experience, Crashes and Traffic Citations of Teenage Beginning Drivers*, 35 ACCIDENT ANALYSIS & PREVENTION 311, 311 (2013); *id.* Per mile driven, sixteen-year-olds have nearly three times as many crashes overall as nineteen-year-olds, and more than twice as many fatal crashes. *Id.*; INS. INST. FOR HIGHWAY SAFETY, *supra* note 1. Studies found that sixteen-year-olds had 31 crashes per million miles traveled, compared to 9 for nineteen-year-olds, and 9.1 fatal crashes per 100 million miles traveled compared to 3.8. Allan F. Williams, *Teenage Drivers: Patterns of Risk*, 34 J. SAFETY RES. 5, 6 tbls.1 & 3 (2003). These data are comparable to 1990 crash rates, where sixteen-year-olds had 43 crashes per million miles driven compared with 15 for eighteen- to nineteen-year-olds. Allan F. Williams et al., *Characteristics of Fatal Crashes of 16-Year-Old*

general decline with both maturity (estimated in terms of chronological age) and experience (estimated by number of miles driven).⁴³ As a group, all novice drivers have higher crash rates than do more experienced drivers.⁴⁴ At each month of driving experience, however, younger novices have significantly higher crash rates than do older novices.⁴⁵ In the first few months of driving, young novices' crash rate is twice that of older novices.⁴⁶ The gap narrows over time, but a 45% difference in crash rates persists even after two years of licensure.⁴⁷

Increasingly refined studies have found that age-related factors predominate in the earlier years of adolescence, then decline relative to experience.⁴⁸ Thus, the crash risk for fifteen-year-old beginners is much higher than that for seventeen-year-old beginners, but eighteen-year-old beginners have only a slightly higher crash risk than twenty-year-old beginners.⁴⁹ In other words, at younger ages, driving inexperience plays a role, but a secondary one.⁵⁰ At later ages, different levels of driving experience account for more of the differences in crash rates.⁵¹ Crash rates are consistently highest for the youngest novice drivers, for whom age- and development-related factors compound the risk related to their driving inexperience.⁵²

Drivers: Implications for Licensure Policies, 16 J. PUB. HEALTH POL'Y 347, 347 (1995) (reporting data derived from the 1990 Nationwide Personal Transportation Survey).

⁴³ A. James McKnight & A. Scott McKnight, *Young Novice Drivers: Careless or Clueless?*, 35 ACCIDENT ANALYSIS & PREVENTION 921, 921 (2003).

⁴⁴ *Id.*

⁴⁵ Mayhew et al., *supra* note 41, at 685.

⁴⁶ *Id.* (reporting crash rates of 114 per 10,000 young novice drivers compared to 56 per 10,000 older novice drivers).

⁴⁷ *Id.* (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).

⁴⁸ See Nils Petter Gregersen & Per Bjurulf, *Young Novice Drivers: Towards a Model of Their Accident Involvement*, 28 ACCIDENT ANALYSIS & PREVENTION 229, 231 (1996) (citing several such studies).

⁴⁹ *Id.*

⁵⁰ Allan F. Williams, *Young Driver Risk Factors: Successful and Unsuccessful Approaches for Dealing with Them and an Agenda for the Future*, 12 INJURY PREVENTION, at i4, i4 (Supp. I 2006).

⁵¹ See Gregersen & Bjurulf, *supra* note 48, at 231 (finding that experience is more important than age from seventeen years of age).

⁵² *Id.* Consistent with other researchers' findings, Gregersen and Bjurulf 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.*

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 sixteen 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."⁵³ After Canada lowered its age of licensure from eighteen to sixteen, for example, new drivers' accident involvement increased by an estimated 12%, and new driver fatalities by 24%.⁵⁴

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

B. REGULATORY CONTEXTS

This section chronicles states' adoption of general licensure requirements, the emergence of sixteen as the presumptive age of licensure, and the implementation, beginning in the late 1990s, of graduated licensing systems. It concludes 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.⁵⁵

⁵³ Daniel R. Mayhew et al., *Why 16?*, INS. INST. HIGHWAY SAFETY, Aug. 2000, at 2, available at <http://www.iihs.org/frontend/iihs/documents/masterfiledocs.ashx?id=1261>. Mayhew, Senior Vice President of the Traffic Injury Research Foundation, has studied and published research on road safety and young drivers for more than three decades. See *Dan Mayhew*, TRAFFIC & INJ. RES. FOUND., http://www.tirf.ca/about/2012_bios_danm.pdf (last visited June 7, 2014) (listing career and research highlights).

⁵⁴ Gregersen & Bjurulf, *supra* note 48, at 231. Canada lowered its age of licensure in 1962. *Id.*

⁵⁵ See Herb M. Simpson, *The Evolution and Effectiveness of Graduated Licensing*, 34 J. SAFETY RES. 25, 27 (2003) (noting that regulatory efforts such as graduated licensing

1. *Regulation and Emergence of the Age of Licensure.* States largely left passenger cars and their drivers unregulated until the early twentieth century, when the proliferation of cars on roadways not designed to handle them led to pollution, noise, collisions, and growing numbers of casualties.⁵⁶ States initially addressed the growing 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.⁵⁷

Northeastern and more urbanized states were the first to require that all drivers be licensed.⁵⁸ 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.⁵⁹ A few states passed laws prohibiting individuals below a minimum age—usually eighteen—from driving, even before enacting general licensure

systems saw virtually no progress until the late 1980's in New Zealand, and even there it evolved slowly).

⁵⁶ See JOHN A. HEITMANN, *THE AUTOMOBILE AND AMERICAN LIFE* 19 (2009) (describing the “spectacular rise in American auto production” in the early twentieth century, which was spurred on by the fact that the fledgling auto industry faced “virtually no government restriction,” and which resulted in the proliferation of gasoline-powered automobiles chosen for their ability to deal with poor roads); Mayhew et al., *supra* note 53, at 10 (noting that public authorities began to realize in the early 1900s that they needed to deal with the rise in congestion, collisions, and deaths that coincided with the rise in motorization, but that the rapid proliferation of vehicles “left lawmakers far behind”). At the beginning of the twentieth century, new automotive manufacturing techniques accelerated production and fueled an exponential growth in automobile ownership. See HEITMANN, *supra*, at 19 (suggesting that the spectacular rise in American auto production resulted from the use of uniformly machined parts and economies of scale). Cars powered by internal combustion engines had been available by the end of the nineteenth century, but labor-intensive production processes limited their availability. See *id.* at 18–19 (discussing the work of several pre-nineteenth century pioneers, but showing that the significant rise in vehicle production did not begin until manufacturing techniques advanced). From 1907 to 1920, the number of motor-vehicle related deaths increased from approximately 400 to 12,500. Mayhew et al., *supra* note 53, at 10.

⁵⁷ Abbott, *supra* note 20, at 614–15.

⁵⁸ See Mayhew et al., *supra* note 53, at 4 (noting that Massachusetts and Missouri were the first to adopt such laws, followed by several other northeastern states). Early licensure requirements applied only to paid chauffeurs, who were believed to have less incentive to drive carefully than did car owners themselves. See Abbott, *supra* note 20, at 615–16 (discussing contemporary licensure requirements for chauffeurs).

⁵⁹ See Mayhew et al., *supra* note 53, at 6–7, 18 (discussing in depth the origins of age requirements).

requirements.⁶⁰ Pennsylvania's 1909 law was the first to contain provisions aimed at younger drivers, requiring those under eighteen to obtain a special license.⁶¹ Some states introduced "junior operator" licenses akin to today's learner's permits and provisional licenses, which allowed sixteen- and seventeen-year-olds to drive only with adult supervision or subject to other restrictions.⁶²

The needs of families in agricultural communities, who tended to rely on the labor of their younger adolescents, led many farm states to adopt lower minimum licensing ages—typically fourteen, fifteen, or sixteen.⁶³

Mayhew and colleagues have noted that many child labor laws permitted teens aged fourteen to sixteen and those aged sixteen to eighteen to perform certain defined categories of work (generally prohibiting those younger than fourteen from working), which may help explain the eventual convergence on age sixteen as the minimum age of licensure.⁶⁴ In 1926, the National Conference for Street Highway Safety promulgated the Uniform Vehicle Code, recommending age sixteen as the minimum age for licensure but requiring parental consent in order for minors to obtain a license.⁶⁵ Courts held that parents who allowed adolescents to drive in violation of statutory minimum age requirements themselves acted negligently and could be held liable for the injuries subsequently caused by their children's negligent vehicle

⁶⁰ See *id.* at 6 (listing five states—Colorado, Illinois, Maine, New York, and Texas).

⁶¹ *Id.*

⁶² *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 is accompanied by a duly licensed chauffeur or the owner of the motor vehicle being operated." N.Y. HIGH. LAW § 282(2) (Consol. 1917).

⁶³ See Mayhew et al., *supra* note 53, at 7, 9–10 (noting fifteen predominantly rural states adopting these minimum ages, and explaining it in terms of the need for adolescent labor in agriculture). Some states also legislated exceptions to minimum age requirements that allowed younger persons to operate farm vehicles. *Id.* at 14.

⁶⁴ *Id.* at 9–10. 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 twentieth century, enacted child labor laws to protect children from employment deemed abusive or otherwise harmful to them. *Id.*

⁶⁵ *Id.*; James P. Economos, *Driver Licensing and the Court*, 17 TRAFFIC DIG. & REV. 3 (1969).

operation.⁶⁶ Influenced perhaps by both the Uniform Code and the general trend among states, most states that introduced minimum licensure ages in the 1920s set their licensing age at sixteen.⁶⁷

Less than ten years after adopting the first Uniform Code, however, the National Conference amended its age-related provisions, concluding that a better approach to licensure 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.⁶⁸ State legislatures declined to revisit the issue, though, retaining their pre-established minimum ages of licensure through the twentieth century—sixteen for most, fourteen or fifteen in a few, and in the State of New Jersey only, seventeen.⁶⁹

2. *Conventional Licensing.* For much of the twentieth century, obtaining a license was quick and easy. Most states simply required that applicants pass a written exam and a road test.⁷⁰ The exams generally tested basic knowledge of traffic rules, and the road tests required that drivers demonstrate a minimal level of competency.⁷¹ Successful applicants immediately acquired full licensure—i.e., the entitlement to drive without supervision or other restrictions.⁷²

More states began issuing junior operator licenses, which became known as learners' permits.⁷³ Learner's permits allow beginning drivers to gain practice under adult supervision prior to applying for licensure.⁷⁴ Today, most states permit adolescents to

⁶⁶ See, e.g., *Schultz v. Morrison*, 91 Misc. 248, 250–51 (N.Y. Sup. Ct. 1915) (“While 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.” (internal quotation marks omitted)).

⁶⁷ See Mayhew et al., *supra* note 53, at 9–10 (noting that these two factors “influenced other states to follow suit” and that “some degree of uniformity was achieved”).

⁶⁸ *Id.* at 13.

⁶⁹ *Id.*; Williams, *supra* note 50, at 15; see also Allan F. Williams & Daniel R. Mayhew, *Graduated Licensing and Beyond*, 35 AM. J. PREVENTIVE MED. S324, S324 (Supp. 2008) (summarizing an analysis of U.S. licensure laws prior to 1996).

⁷⁰ See Simpson, *supra* note 55, at 26 (discussing licensure requirements under conventional licensing systems).

⁷¹ *Id.*

⁷² *Id.*

⁷³ See Mayhew et al., *supra* note 53, at 7.

⁷⁴ Simpson, *supra* note 55, at 26.

acquire learners' permits by ages fourteen to sixteen, with parental consent.⁷⁵ While they initially tended to be optional, states began making the learner's permit a precondition for full licensure.⁷⁶ Most states now require that a learner's permit be held for some minimum period, from sixty days to a year, prior to applying for licensure.⁷⁷

In an attempt to curb the high crash rates of novice drivers (those whose licenses permit unsupervised driving), several states added probationary or provisional licensure stages preceding full licensure.⁷⁸ Probationary licensure subjects novice drivers who commit violations to more severe penalties (generally fines or license suspension) than would apply to fully-licensed drivers.⁷⁹ Evaluations of probationary licensing systems have found them to have modest positive effects.⁸⁰ Provisional licenses impose restrictions on novice drivers' privileges, most commonly including nighttime driving and passenger restrictions.⁸¹ The same sorts of restrictions constitute components of the more recently adopted graduated licensing systems adopted by states.⁸²

Many states introduced formal driver education programs in the early- to mid-twentieth century as a way to improve young drivers' skills and safety.⁸³ Completing a driver education program became a prerequisite for sixteen- and seventeen-year-olds seeking licensure.⁸⁴ Those who did not complete a driver education program were required to wait until age eighteen before seeking licensure.⁸⁵

⁷⁵ Mayhew et al., *supra* note 53, at 17.

⁷⁶ *Id.*

⁷⁷ Daniel R. Mayhew et al., *The Learner's Permit*, 34 J. SAFETY RES. 35, 36 (2003).

⁷⁸ Simpson, *supra* note 55, at 26.

⁷⁹ *Id.*

⁸⁰ *Id.*; Williams, *supra* note 50, at i5; Williams & Mayhew, *supra* note 69, at S324. Critics have argued that probationary licensing fails to assist drivers whose errors reflect lack of skill rather than intentional disregard of 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. Simpson, *supra* note 55, at 26.

⁸¹ Simpson, *supra* note 55, at 26.

⁸² See *infra* notes 101–02 and accompanying text.

⁸³ Mayhew et al., *supra* note 53, at 15.

⁸⁴ *Id.* at 16.

⁸⁵ *Id.*

The demand for driver education exploded in the 1950s and 1960s.⁸⁶ 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.⁸⁷

Evaluations of driver education programs in the decades that followed, however, consistently found that they failed to reduce driver crash risk.⁸⁸ 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.⁸⁹

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 *increased* the number and risk of crashes for young drivers.⁹⁰ Students who completed driver-education programs were more likely to obtain licensure, be in car crashes, and incur traffic violations than students who did not participate in driver education.⁹¹ Driver education also had the unintended effect of exacerbating young drivers' optimism bias—the unfounded belief that one is more skilled and less likely to experience a collision than one's peers—potentially because participants in training programs overestimated the skills gained from the program.⁹² Drivers' optimism bias correlates with overconfidence and risk-taking.⁹³

By greatly increasing the number of young licensed drivers without decreasing their crash rates, the net effect of driver

⁸⁶ *Id.*

⁸⁷ *Id.* at 15–16.

⁸⁸ Williams & Mayhew, *supra* note 69, at S324.

⁸⁹ Williams, *supra* note 50, at i5.

⁹⁰ Soc'y for Adolescent Med., *Driver Education: Position Paper of the Society for Adolescent Medicine*, 21 J. ADOLESCENT HEALTH 416, 416–17 (1997) (arguing for the repeal of legislation providing for earlier licensure for adolescents who have completed a driver education course).

⁹¹ *Id.* at 417.

⁹² White et al., *supra* note 6, at 1310.

⁹³ Chris G. Sibley & Niki Harré, *A Gender Role Socialization Model of Explicit and Implicit Biases in Driving Self-Enhancement*, 12 TRANSP. RES. PART F: TRAFFIC PSYCHOL. & BEHAV. 452, 459 (2009).

education was a much higher adolescent traffic fatality rate.⁹⁴ Following these disappointing research findings, the federal government withdrew funding for driver education programs, and their popularity and availability decreased significantly.⁹⁵

3. *Graduated Driver Licensing*. 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.⁹⁶

The proposed system, known as Graduated Driver Licensing (GDL), was not particularly radical. GDL comprises three phases of licensure—the learner's permit, a provisional license, and full licensure.⁹⁷

The first phase of GDL is the learner's permit phase, which involves a period of supervised driving.⁹⁸ Unlike the learner's permit provisions of some conventional systems, however, the learner's permit in a GDL system is mandatory and must be held for a minimum period of time, from several months to a year.⁹⁹

After holding a learner's permit for the statutorily prescribed period of time and completing the set number of practice hours where required, applicants may obtain provisional licenses.¹⁰⁰ Like the provisional licensure requirements in conventional systems, the GDL provisional license permits unsupervised driving but imposes restrictions aimed at reducing the novice's

⁹⁴ Leon S. Robertson, *Crash Involvement of Teenaged Drivers When Driver Education is Eliminated from High School*, 70 AM. J. PUB. HEALTH 599, 599 (1980).

⁹⁵ Mayhew et al., *supra* note 53, at 16. The National Highway Traffic Safety Administration abandoned driver education as a priority by 1982. *Id.*

⁹⁶ Simpson, *supra* note 55, at 27; Patricia F. Waller, *The Genesis of GDL*, 34 J. SAFETY RES. 17, 17–18 (2003).

⁹⁷ James Hedlund et al., *What We Know, What We Don't Know, and What We Need to Know About Graduated Driver Licensing*, 34 J. SAFETY RES. 107, 107 (2003); Simpson, *supra* note 55, at 27; Patricia F. Waller, *Challenging the Status Quo in Driver Licensing*, 76 TRAFFIC SAFETY 20 (1976).

⁹⁸ Hedlund et al., *supra* note 97, at 109.

⁹⁹ Simpson, *supra* note 55, at 27. Some states require parents to verify that the learner has completed a requisite number of supervised practice hours. Hedlund et al., *supra* note 97, at 110.

¹⁰⁰ Hedlund et al., *supra* note 97, at 111.

exposure to hazardous driving contexts.¹⁰¹ The most common examples include passenger restrictions, nighttime driving restrictions, and prohibitions on operating on high-speed roadways.¹⁰²

The National Highway Traffic Safety Administration (NHTSA) developed a model GDL law in 1977, but it was two decades before the states took legislative note of it.¹⁰³ 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 1987.¹⁰⁴ Empirical evidence of the positive effects of its system then provided added impetus for U.S. jurisdictions to follow suit.¹⁰⁵

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.¹⁰⁶ The NTSB issued safety recommendations in 1993, proposing the adoption of GDL,¹⁰⁷ and later updated its recommendations to include passenger¹⁰⁸ and wireless-communication-device restrictions.¹⁰⁹

In 1996, Florida was the first U.S. state to replace its conventional licensure system with a GDL system.¹¹⁰ Its system

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ JULIE A. CROKE & WILLIAM B. WILSON, MODEL FOR PROVISIONAL (GRADUATED) LICENSING OF YOUNG NOVICE DRIVERS (1977); Williams & Mayhew, *supra* note 69, at S324-25.

¹⁰⁴ Simpson, *supra* note 55, at 27; Waller, *supra* note 96, at 22.

¹⁰⁵ See Simpson, *supra* note 55, at 29 (noting "substantial reductions in casualty collisions").

¹⁰⁶ For a discussion of NHTSA and NTSB recommendations, as well as the 1996 GDL Model Law based on the NTSB recommendations and adopted by the National Commission on Uniform Traffic Laws and Ordinances, see Michelle Browning Coughlin, *Proposing a Uniform National Graduated Driver License Law to Reduce Motor-Vehicle Fatalities Among Teenagers*, 46 U. LOUISVILLE L. REV. 495, 500-04, 509-10 (2008).

¹⁰⁷ NAT'L TRANSP. SAFETY BD., SAFETY RECOMMENDATION H-93-1 THROUGH -9, at 13-14 (Mar. 11, 1993), available at http://www.nts.gov/doclib/recletters/1993/H93_1_9.pdf.

¹⁰⁸ NAT'L TRANSP. SAFETY BD., SAFETY RECOMMENDATION H-02-30 AND -31, at 1 (Nov. 8, 2002), available at http://www.nts.gov/doclib/recletters/2002/H02_30_31.pdf.

¹⁰⁹ NAT'L TRANSP. SAFETY BD., SAFETY RECOMMENDATION H-03-08 AND -09, at 5 (June 13, 2003), available at http://www.nts.gov/doclib/recletters/2003/H03_08_09.pdf.

¹¹⁰ Anne T. McCartt et al., *Graduated Licensing Laws and Fatal Crashes of Teenage Drivers: A National Study*, 11 TRAFFIC INJURY PREVENTION 240, 241 (2010).

included a six-month mandatory learner's phase and nighttime driving curfews for sixteen-year-olds (eleven p.m. to six a.m.) and seventeen-year-olds (one a.m. to five a.m.), unless accompanied by an adult or traveling to or from work.¹¹¹

Since then, every state has implemented at least some component of GDL; some are comprehensive and include each of its primary elements, while others only include limited aspects of it.¹¹² The Insurance Institute for Highway Safety recommends that states implement a learner's permit phase, available no earlier than age sixteen, a nighttime restriction beginning no later than ten p.m., and a passenger restriction that allows no more than one passenger, with night and passenger restrictions in place until at least age eighteen.¹¹³

In states that adopted graduated licensing provisions, crashes among sixteen-year-old drivers decreased between 10% and as much as 30%.¹¹⁴ Researchers attribute the success of GDL systems in reducing teen crash risk to two primary factors: First, GDL delays unsupervised driving and limits the exposure of young drivers to more challenging driving conditions (e.g., nighttime driving restrictions substantially reduce nighttime crashes).¹¹⁵ Second, GDL requires beginning drivers to perform the type of extended supervised practice and gain driving experience that may reduce crashes.¹¹⁶

Even after the implementation of GDL systems, however, young drivers continue to be significantly overrepresented in crash statistics.¹¹⁷ Researchers note that many states have suboptimal GDL systems, and that young drivers' compliance with existing requirements is imperfect.¹¹⁸ Most importantly, perhaps, GDL

¹¹¹ Allan F. Williams et al., *Views of Parents of Teenagers About Graduated Licensing Systems*, 29 J. SAFETY RES. 1, 2 (1998).

¹¹² Williams & Mayhew, *supra* note 69, at S325.

¹¹³ *Id.* at S326 (citing INS. INST. FOR HIGHWAY SAFETY, GRADUATED LICENSING: A BLUEPRINT FOR NORTH AMERICA (2004)).

¹¹⁴ Christine Branche et al., *Graduated Licensing for Teens: Why Everybody's Doing It*, 30 J.L. MED. & ETHICS 146, 146 (Supp. 2002); Anne T. McCartt et al., *Age of Licensure and Monitoring Teenagers' Driving: Survey of Parents of Novice Teenage Drivers*, 38 J. SAFETY RES. 697, 698 (2007).

¹¹⁵ Hedlund et al., *supra* note 97, at 109.

¹¹⁶ *Id.*

¹¹⁷ Scott-Parker et al., *supra* note 39, at 249.

¹¹⁸ Williams & Mayhew, *supra* note 69, at S325.

systems reflect a compromise that still allows a considerable amount of driving at relatively young ages.¹¹⁹ And as noted above, young drivers' crash, injury, and fatality rates result from both age-related developmental factors and driving inexperience.¹²⁰ As one of its original architects has observed, GDL aims at reducing the inexperience component of young drivers' crash risk; it was not designed, nor is it capable of addressing, deliberate rule-flouting, risk-taking, or impulsive behaviors often associated with young drivers (and addressed at greater length in Part III, *infra*).¹²¹

C. SOCIO-CULTURAL CONTEXT

Passenger cars most obviously serve what has become an essential social function—private transportation facilitating individuals' mobility. In the late nineteenth and early- to mid-twentieth centuries, especially in rural and agricultural states, adolescent driving also enabled young people to contribute vital labor to family production work.¹²² Cars and driving have also come to serve social functions and comprise cultural meanings far beyond their utilitarian transportation-related purposes, however. This section examines the most significant of these.

1. *Social Functions.* How necessary is the increased mobility of sixteen- and seventeen-year-olds made possible by their licensure? In the 2007 report of a National Academy of Sciences workshop, an interdisciplinary group of researchers studying adolescent health and development and traffic safety concluded that "there is no good reason to license young people to drive at age 16."¹²³ 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.¹²⁴

Historically, young people in farming communities operated farm equipment at an early age, commonly using roads to travel

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ Waller, *supra* note 96, at 19.

¹²² Mayhew et al., *supra* note 53, at 10.

¹²³ NAT'L RES. COUNCIL ET AL., *supra* note 4, at 42.

¹²⁴ Mayhew et al., *supra* note 53, at 13–14.

between fields.¹²⁵ The percentage of Americans engaged in agricultural work has plummeted, however—from 35% in the early years of the twentieth century to 2.5% today.¹²⁶ Today's farmers produce between five and ten times the output per man-hour worked as did farmers at the beginning of the twentieth century.¹²⁷ Farming simply does not require the manpower it once did, and the need of agrarian families to have young teens licensed and able to contribute to the 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.¹²⁸ Yet there is scant empirical work examining the necessity of adolescent mobility. A 1985 study compared the lifestyles of licensed and unlicensed fifteen- and sixteen-year-olds in three states and found higher rates of licensure associated with teens performing more family errands (e.g., shopping) and providing transportation for siblings (both of which ease parents' burden), whereas lower rates were associated with greater reliance on parents or other family members for transportation.¹²⁹ On the other hand, lower rates of licensure did not reduce job holding or participation in social activities requiring transportation, nor did it increase use of public transportation.¹³⁰ A study of New Jersey's seventeen-year-old licensing age found the lifestyle effects of the higher licensing age to be minimal.¹³¹

In light of the geographic and economic realities of American (particularly nonurban) family life, one imagines that early licensure can indeed provide familial benefits. Adolescent mobility can facilitate adolescents commuting to and from school,

¹²⁵ *Id.* at 14.

¹²⁶ Stephen Moore & Julian L. Simon, *The Greatest Century That Ever Was: 25 Miraculous Trends of the Past 100 Years*, POL'Y ANALYSIS NO. 364, Dec. 15, 1999, at 6 tbl.1, available at <http://www.cato.org/pubs/pas/pa364.pdf>.

¹²⁷ *Id.* at 17 fig.13.

¹²⁸ Allan F. Williams & David F. Preusser, *Night Driving Restrictions for Youthful Drivers: A Literature Review and Commentary*, 18 J. PUB. HEALTH POL'Y 334, 335 (1997).

¹²⁹ David F. Preusser et al., *Driver Licensing Age and Lifestyles of 16 Year Olds*, 75 AM. J. PUB. HEALTH 358, 359–60 (1985). The states were Michigan, New Jersey, and New York. *Id.*

¹³⁰ *Id.* at 360. Regional unemployment rates and child labor laws did affect teen employment. *Id.* at 359–60.

¹³¹ McCartt et al., *supra* note 114, at 698.

extracurricular and social activities, and paid work,¹³² relieving parents of some of the time-consuming and logistically challenging demands of serving as their children's chauffeurs (particularly when parents must simultaneously meet work and other household responsibilities).¹³³

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 for help with transportation as justifying their teens obtaining licenses as early as possible.¹³⁴ In two of the states, no parent cited teens' own job-related commutes as justifying early licensure; 5% of parents in a third state cited teens' own job-related obligations.¹³⁵

A higher proportion of U.S. adolescents drive than in most other countries.¹³⁶ 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 eighteen.¹³⁷ 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 eighteen, but sixteen- and seventeen-year-olds who complete a training program may obtain licensure earlier.¹³⁸ Most young French people, however, decline to

¹³² Mayhew et al., *supra* note 53, at 14. In 1929, New York, for example, made provisions for sixteen- and seventeen-year-olds to obtain junior permits allowing them to drive to and from work or school. *Id.*

¹³³ Laird, *supra* note 40, at 314; *see also* Arthur L. Kellermann & Ricardo Martinez, *Hot Wheels*, 35 AM. J. PREVENTIVE MED. S310, S310 (Supp. 2008) (providing an anecdote from a co-author's life). Kellermann and Ricardo write 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 S310–11.

¹³⁴ McCartt et al., *supra* note 114, at 701 tbl.5. No parents cited this as a factor in Minnesota, and only 2% of North Carolina and Rhode Island parents did so. *Id.*

¹³⁵ *Id.* No parent cited this factor in either Minnesota or North Carolina; 5% of Rhode Island parents did so. *Id.*

¹³⁶ Williams & Preusser, *supra* note 128, at 335.

¹³⁷ Mayhew et al., *supra* note 53, at 18.

¹³⁸ *Id.* The French refer to this system as the "apprentissage" system of driver training. *Id.*

participate in the early licensure program—only about 10% of them avail themselves of the opportunity.¹³⁹ 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.¹⁴⁰ It is possible that alternative modes of transportation meet the mobility needs of European adolescents, reducing the importance of providing for early licensure.¹⁴¹ European countries tend to be highly urbanized and have extensive public transportation systems.¹⁴² Cycling is also a more common mode of transportation than it is in the United States, facilitated by shorter distances between rural areas and urban centers.¹⁴³ Finally, car owners pay significantly higher taxes abroad than they do in the United States, making car ownership less accessible.¹⁴⁴

Wholly apart from their transportation function, cars can also provide an actual physical space that serves as an important social context for U.S. adolescents.¹⁴⁵ Cars function as a place where adolescents can be together, independent of parental oversight.¹⁴⁶ 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.¹⁴⁷ For emerging adults (those aged eighteen to 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 to use the car as a social gathering place.¹⁴⁸

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ Arnett, *supra* note 37, at ii20.

¹⁴⁵ See *id.* (noting that in the United States, there is a sense that without a car, “you are not really a legitimate member of American Society”).

¹⁴⁶ See Geoffrey Underwood, *On-Road Behaviour of Younger and Older Novices During the First Six Months of Driving*, 58 ACCIDENT ANALYSIS & PREVENTION 235, 236 (2013) (“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.”).

¹⁴⁷ Arnett, *supra* note 37, at ii18.

¹⁴⁸ *Id.*

2. *Cultural Meanings.* Licensure thus heralds the achievement of an important milestone and is a much-anticipated developmental rite of passage for most adolescents.¹⁴⁹ Driving is a right withheld from children and younger adolescents, so the acquisition of licensure signals a young person's movement into a new quasi-status, one reserved for adolescents who have moved one significant step closer to adulthood.¹⁵⁰ Many teens view owning a car—or at least having regular access to one—as a near-entitlement.¹⁵¹

Teens thus tend to be highly motivated to acquire licensure as soon as they are legally able.¹⁵² Many parents may 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.¹⁵³ As a result of the desires of their teens to acquire and exercise the significant driving entitlement, Mayhew argues that “parents too often allow inexperienced and immature youth to operate motor vehicles.”¹⁵⁴

Licensing is not merely a symbolic marker of social status. Teens perceive driving as affecting status among peers and also the opposite sex/romantic interests.¹⁵⁵ Popular culture has for decades portrayed driving itself—risky driving, in particular—as

¹⁴⁹ Joseph P. Allen & Bradford Brown, *Adolescents, Peers, and Motor Vehicles: The Perfect Storm?*, 35 AM. J. PREVENTIVE MED. S289, S289 (Supp. 2008); Robert Graham & Jennifer Appleton Gootman, *Overview and Introduction, Preventing Teen Motor Crashes: Contributions from the Behavioral and Social Sciences and Summary of the Report of the National Research Council and Institute of Medicine*, 35 AM. J. PREVENTIVE MED. S253, S255 (Supp. 2008); Bridie Scott-Parker et al., *Understanding the Psychosocial Factors Influencing the Risky Behaviour of Young Drivers*, 12 TRANSP. RES. PART F: TRAFFIC PSYCHOL. & BEHAV. 470, 470 (2009).

¹⁵⁰ Bruce G. Simons-Morton et al., *Increasing Parent Limits on Novice Young Drivers: Cognitive Mediation of the Effect of Persuasive Messages*, 21 J. ADOLESCENT RES. 83, 85 (2006).

¹⁵¹ Arnett, *supra* note 37, at ii20.

¹⁵² McCartt et al., *supra* note 114, at 701–02.

¹⁵³ *Id.* at 705.

¹⁵⁴ Mayhew et al., *supra* note 53, at 15 (citing DANIEL R. MAYHEW & HERBERT M. SIMPSON, *THE ROLE OF DRIVING EXPERIENCE: IMPLICATIONS FOR THE TRAINING AND LICENSING OF NEW DRIVERS* (1995)).

¹⁵⁵ Scott-Parker et al., *supra* note 149, at 472–73.

“cool, youthful, and fun.”¹⁵⁶ Race-car driving is an immensely popular sport, and fast driving generally is promoted across media.¹⁵⁷ The dangerous yet skillful driving in the car-chase scenes typical of action movies exemplifies, for example, the superior courage and masculinity of male protagonists. Audiences for race-car driving and action movies consist predominantly of teenage boys and emerging adult men,¹⁵⁸ although the extent to which cultural messages influence adolescent behavior remains unclear.¹⁵⁹

What is clear and incontrovertible is that teenaged males engage in riskier driving behavior¹⁶⁰ and have higher crash and fatality rates than do females.¹⁶¹ Researchers have thus 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.¹⁶² They and other researchers have found that both men and women have some tendency towards optimism bias, viewing themselves as above-average drivers.¹⁶³ As noted above, 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.¹⁶⁴

¹⁵⁶ Daniel P. Keating & Bonnie Halpern-Felsher, *Adolescent Drivers: A Developmental Perspective on Risk, Proficiency, and Safety*, 35 AM. J. PREVENTIVE MED. S272, S276 (Supp. 2008).

¹⁵⁷ J.T. Shope, *Influences on Youthful Driving Behavior and Their Potential for Guiding Interventions to Reduce Crashes*, 12 INJURY PREVENTION, at i9, i11 (Supp. I 2006).

¹⁵⁸ Arnett, *supra* note 37, at ii19.

¹⁵⁹ Keating & Halpern-Felsher, *supra* note 156, at S276.

¹⁶⁰ Allen & Brown, *supra* note 149, at S292.

¹⁶¹ See *supra* notes 35–40 and accompanying text.

¹⁶² See, e.g., Sibley & Harré, *supra* note 93, at 454 (studying the role gender identification plays in risky driving behavior and in both explicit and implicit self-enhancement biases); Niki Harré & Chris G. Sibley, *Explicit and Implicit Self-Enhancement Biases in Drivers and Their Relationship to Driving Violations and Crash-Risk Optimism*, 39 ACCIDENT ANALYSIS & PREVENTION 1155, 1155 (2007) (studying 158 drivers in New Zealand using the Implicit Association Test (IAT) to measure gender differences in crash-risk optimism).

¹⁶³ Sibley & Harré, *supra* note 93, at 452. 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., *supra* note 6, at 1310.

¹⁶⁴ Sibley & Harré, *supra* note 93, at 453.

Men have significantly higher levels of self-enhancement on the ability dimension than do women, perceiving their driving ability and skill level as superior to other drivers'.¹⁶⁵ Studies indicate that this heightened bias exists *explicitly* (drivers consciously rate themselves relative to others) as well as *implicitly* (instruments measure drivers' reaction times when pairing concepts that reflect unconscious or automatic associative beliefs).¹⁶⁶

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 automatic associations occurring outside of conscious awareness and declared belief structures. Sibley and Harré found "an extremely strong path between being a man, identifying as such[,] and driving ability self-enhancement at this automatic, unconscious level."¹⁶⁷

These findings led them to conclude that gender differences in crash rates and fatality rates are at least partially the result of socialization experiences that relate masculine identity with risk-taking and that are absorbed from repeated pairings of these concepts in society.¹⁶⁸

Crash risk increases, moreover, when young male drivers are accompanied by a male passenger, but decreases when they drive with female passengers.¹⁶⁹ 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."¹⁷⁰

The following Part describes characteristics of adolescent driving, the contextual factors that affect it (both internal and

¹⁶⁵ *Id.* at 452–53.

¹⁶⁶ *Id.* at 453. To identify and measure implicit attitudes, researchers used the 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. *Id.* Men's reaction times were quicker than women's when matching the self relative to others with words representing driving ability and skills. *Id.*

¹⁶⁷ *Id.* Explicit and implicit self-enhancement only weakly correlate, suggesting that they reflect distinct mental processes, but each independently predicts crash-risk optimism. *Id.* at 453.

¹⁶⁸ *Id.* at 459.

¹⁶⁹ Allen & Brown, *supra* note 149, at S292.

¹⁷⁰ Arnett, *supra* note 37, at ii19.

external to the adolescent), and the process of acquiring driving competence.

III. THE ADOLESCENT DRIVER

All teen drivers crash at higher rates than do older drivers.¹⁷¹ Younger teens, however, crash at rates significantly higher than those of older teens. By far the highest crash rates are those of sixteen-year-olds (250% higher than those of eighteen-year-olds), followed by those of seventeen-year-olds (50% higher than those of eighteen-year-olds).¹⁷²

Inexperience and developmental immaturity are generally the primary factors that contribute to adolescent crash risk. Driving inexperience, however, is not the primary cause of the higher crash risk of younger teens. At younger ages (fifteen to seventeen) driving inexperience is secondary to developmental immaturity.¹⁷³ 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 specifically, and supported by research of the adolescent brain.¹⁷⁴

This Part explores adolescent driving inexperience and developmental immaturity separately. The learning processes required for the acquisition of competent driving skill differ 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

¹⁷¹ Braitman et al., *supra* note 2, at 47. As a group, teens crash at four times the rate than that of drivers aged twenty and over. *Id.* (reporting crash rates per mile driven); see also McKnight & McKnight, *supra* note 43, at 921 (“[T]he non-fatal accident rate for 16-year-old novices is more than 10 times that of adults and almost three times that of 18-year-olds.”); Shope & Bingham, *supra* note 7, at S261 (breaking down teen crash rates by age and comparing them to that of drivers aged forty-five to fifty-four).

¹⁷² Arnett, *supra* note 37, at ii17; see also NAT’L RES. COUNCIL ET AL., *supra* note 4, at 6 (noting that drivers in their first six months of licensure, which in the United States are likely to be younger teens, have higher fatal crash rates compared to more experienced drivers than do drivers after their first six months of licensure).

¹⁷³ See *infra* Part III.C.

¹⁷⁴ See *infra* Part III.C.

acquisition is incomplete in adolescence.¹⁷⁵ Aspects of adolescent development and behavior that are relevant to driving are normative—not pathological or aberrational—and are thus resistant or not amenable to change through education or other interventions.

This Part concludes by exploring the combined effects of age-related developmental factors and inexperience on adolescent driving risk. Any regulatory system that entrusts adolescents with the responsibility of driving ought to account for these separate causes of adolescent crash risk.

A. CHARACTERISTICS AND CONTEXTUAL INFLUENCES

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 on wet roadways).¹⁷⁶ Other characteristics of young people's 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).¹⁷⁷ They have poorer hazard perception than do older drivers, and are less likely to recognize and respond appropriately to hazards and developing traffic risks.¹⁷⁸ Young males generally

¹⁷⁵ SUBCOMM. ON YOUNG DRIVERS, FUTURE DIRECTIONS FOR RESEARCH ON MOTOR VEHICLE CRASHES AND INJURIES INVOLVING TEENAGE DRIVERS 9 (2009), available at <http://www.youngdriversafety.org/docs/2008%20Mid-yr-rpt.pdf>.

¹⁷⁶ See Braitman et al., *supra* note 2, at 47 (finding that such behavior contributes to the fatal crashes of sixteen-year-old drivers); Shope, *supra* note 157, at i10 (noting the tendency of young drivers to speed).

¹⁷⁷ Shope, *supra* note 157, at i10; Williams, *supra* note 50, at i4; see also Hedlund et al., *supra* note 97, at 108 (finding teenagers less able to assess driving hazards and more likely to drive in a risky fashion than older drivers).

¹⁷⁸ Alan E. Drummond, *The Role of Experience in Improving Young Driver Safety*, in NEW TO THE ROAD: REDUCING THE RISKS FOR YOUNG MOTORISTS 41, 44 (Herbert Simpson ed., 1996); Shope, *supra* note 157, at i10; Williams, *supra* note 50, at i4.

exhibit these risky driving behaviors to a greater extent than young female drivers.¹⁷⁹

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.¹⁸⁰ One study of the crashes of newly licensed teen drivers found that the factors most likely to contribute to the crashes involved the driver failing to detect another vehicle or traffic control, speeding, or losing control of the vehicle.¹⁸¹ A majority of their crashes (about 60%) involved more than one contributing factor.¹⁸²

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. For example, 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 passenger-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."¹⁸³

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

3. *Passengers, Older and Younger.* Adolescent driving behavior and crash risk vary tremendously depending on who is in the car with them.¹⁸⁴ Driving with adult passengers has a protective

¹⁷⁹ See C. Horvath et al., *Peer Passenger Identity and Passenger Pressure on Young Drivers' Speeding Intentions*, 15 TRANSP. RES. PART F: TRAFFIC PSYCHOL. & BEHAV. 52, 54 (2011) (finding that young male drivers felt normative pressure to speed both when other passengers were present and when driving alone).

¹⁸⁰ McKnight & McKnight, *supra* note 43, at 924.

¹⁸¹ Braitman et al., *supra* note 2, at 52; see also Michael M. Gonzales et al., *Student Drivers: A Study of Fatal Motor Vehicle Crashes Involving 16-Year-Old Drivers*, 45 ANNALS EMERGENCY MED. 140, 140 (2005) (conducting a similar study of fatal crashes in Colorado and obtaining similar results).

¹⁸² Braitman et al., *supra* note 2, at 52.

¹⁸³ Keating & Halpern-Felsher, *supra* note 156, at S274.

¹⁸⁴ See Laird, *supra* note 40, at 313 (noting that adolescent crash rates vary depending on the number, age, and gender of passengers).

effect, and it is then that adolescent crash risk is at its lowest.¹⁸⁵ Despite having less driving experience, learners driving under adult supervision have much lower crash rates than do novice (i.e., unsupervised) drivers.¹⁸⁶ Of sixteen-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.¹⁸⁷ Indeed, learners' crash risk approximates that of experienced adults.¹⁸⁸ Researchers reason that adult passengers act as copilots of sorts, offering advice and alerting the beginning driver to potential dangers.¹⁸⁹

When young drivers carry peer passengers, on the other hand, adolescent crash and fatality rates are at their highest.¹⁹⁰ Younger drivers are more likely to speed, exhibit risky driving behaviors, drive while impaired, and fail to wear seatbelts when accompanied by peer passengers.¹⁹¹ Their accident rates are substantially higher than when they drive alone.¹⁹² Their crash and fatality rates are highest when driving with two or more teenage passengers.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,

¹⁸⁵ See Chris Lee & Mohamed Abdel-Aty, *Presence of Passengers: Does it Increase or Reduce Drivers' Crash Potential?*, 40 ACCIDENT ANALYSIS & PREVENTION 1703, 1703 (2008) ("[C]rash potential is reduced when middle-age passengers accompany teenage drivers as guardians, whereas crash potential increases when teenage passengers accompany teenage drivers.").

¹⁸⁶ Mayhew et al., *supra* note 41, 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 sixteen to nineteen) and older novice drivers (ages twenty and older). *Id.*

¹⁸⁷ Robert G. Ulmer et al., *Teenage Crash Reduction Associated with Delayed Licensure in Connecticut*, 32 J. SAFETY RES. 31, 32 (2001). There were 6,145 sixteen-year-old drivers involved in fatal crashes during this period. *Id.*

¹⁸⁸ Robert D. Foss, *Improving Graduated Driver Licensing Systems: A Conceptual Approach and Its Implications*, 38 J. SAFETY RES. 185, 187 (2007).

¹⁸⁹ Allen & Brown, *supra* note 149, at S289.

¹⁹⁰ See Laird, *supra* note 40, at 313 (finding rates are highest when teen drivers carry two or more teen passengers).

¹⁹¹ Allen & Brown, *supra* note 149, at S289; Lee & Abdel-Aty, *supra* note 184, at 1703, 1708.

¹⁹² Laird, *supra* note 40, at 313.

¹⁹³ *Id.*; Lee & Abdel-Aty, *supra* note 185, at 1704.

following more closely behind other vehicles and driving above posted speed limits.¹⁹⁴

Researchers analyzing the effects of carrying peer passengers have categorized teen passenger influence into two broad types—proximal (or direct) and distal (or indirect).¹⁹⁵ 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.¹⁹⁶ Even absent any explicit action on the part of peer passengers, however, research suggests that the mere presence of peer passengers influences young drivers.¹⁹⁷ This distal or indirect influence of passengers seems to result from drivers' perceived pressure to conform to in-group norms that establish group-appropriate (but often risky) behavior.¹⁹⁸

Most teenage passenger deaths occur when other teenagers are driving.¹⁹⁹ Recent studies have found the death rate for teenage passengers to be higher than for passengers of all other age groups combined.²⁰⁰

4. *Time of Day.* For motorists of all ages, driving at night, especially after midnight, is riskier than driving during the day.²⁰¹ The nighttime crash risk is disproportionately high for young drivers, however, and it is particularly elevated for sixteen- to seventeen-year-old drivers.²⁰² Researchers offer several explanations for the heightened dangers posed by nighttime

¹⁹⁴ Laird, *supra* note 40, at 313 (citing Bruce Simons-Morton et al., *The Observed Effects of Teenage Passengers on the Risky Driving Behavior of Teenage Drivers*, 37 ACCIDENT ANALYSIS & PREVENTION 973 (2005)); Lee & Abdel-Aty, *supra* note 185, at 1703. A British study found that "[t]he presence of young female passengers was associated with safer driving for young men, but the presence of young male passengers was associated with dangerous driving (for example, higher speed, smaller following distance) for both young male and young female drivers." Arnett, *supra* note 37, at ii18.

¹⁹⁵ Laird, *supra* note 40, at 313.

¹⁹⁶ *Id.*

¹⁹⁷ Horvath et al., *supra* note 179, at 53.

¹⁹⁸ *Id.*

¹⁹⁹ INS. INST. HIGHWAY SAFETY, *supra* note 1. In 2010, 59% of thirteen- to nineteen-year-old passengers killed died in vehicles driven by another teenager. *Id.*

²⁰⁰ Susan A. Ferguson et al., *Progress in Teenage Crash Risk During the Last Decade*, 38 J. SAFETY RES. 137, 141 (2007).

²⁰¹ Sean T. Doherty et al., *The Situational Risks of Young Drivers: The Influence of Passengers, Time of Day and Day of Week on Accident Rates*, 30 ACCIDENT ANALYSIS & PREVENTION 45, 45 (1998).

²⁰² Williams & Preusser, *supra* note 128, at 335, 336 fig.1.

driving. First, darkness itself renders the driving task more difficult.²⁰³ Second, the types of teen social activities (such as weekend parties) where drivers tend to carry peer passengers and which correlate with impaired and risky driving occur more frequently at night.²⁰⁴ Finally, sleep deprivation, addressed next, can contribute to increased nighttime driving risk.

5. *Sleep Deprivation.* Sleep deprivation (e.g., eighteen to twenty-four 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 impulsivity—at levels comparable to impairments caused by alcohol intoxication.²⁰⁵ Among individuals suffering from moderate levels of sleep deprivation, moreover, even very low amounts of alcohol can impair performance.²⁰⁶

Sleep deprivation is widespread among adolescents, who typically sleep anywhere between one and three hours less than is required by their natural sleep cycles.²⁰⁷ 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.²⁰⁸ Drivers aged eighteen and younger have by far the highest rates of fatigue-related crashes of all age groups.²⁰⁹

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, . . . then goes out to a late-night

²⁰³ *Id.* at 336.

²⁰⁴ *See id.* (“[R]isky driving, generally associated with recreational activities, is more likely to occur at night.”). In general, however, alcohol-impaired driving is more common among emerging adults than among teenaged drivers. Shope, *supra* note 157, at i10.

²⁰⁵ Ronald E. Dahl, *Biological, Developmental, and Neurobehavioral Factors Relevant to Adolescent Driving Risks*, 35 AM. J. PREVENTIVE MED., at S278, S282–83 (Supp. 2008).

²⁰⁶ *Id.* at S283. Doses of alcohol less than 40 milligrams per 100 milliliters can compound the effects of sleep deprivation. *Id.*

²⁰⁷ Keating & Halpern-Felsher, *supra* note 156, at S274.

²⁰⁸ *See* Groeger, *supra* note 19, at i22 (noting that half of all teen crashes occur at night, even though only 20% of teen driving occurs at night); Shope, *supra* note 157, at i10 (“Most adolescents do not get enough sleep, and that sleep loss interferes with their functioning.”).

²⁰⁹ Groeger, *supra* note 19, at i22 (reporting analysis of 2001–2002 Fatality Analysis Reporting System traffic crash data). Emerging adult drivers aged nineteen to twenty-four 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.*

party on Friday, and drives home under the combined influence of sleep deprivation and alcohol.”²¹⁰ He concludes, “It is difficult to imagine a more dangerous combination of driving risks.”²¹¹

B. COMPLEX PSYCHOMOTOR SKILLS: 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.²¹² As with other complex psychomotor skills, driving ability develops only with the experience that comes with practice over an extended period of time.²¹³

1. *Basic Driving Skills vs. Real-World Driving Competence.* 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.²¹⁴ While basic knowledge and maneuvering ability are certainly necessary for driving competence, however, they are far from sufficient.²¹⁵ In addition to basic vehicle-handling skills, driving requires a host of other skills, 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 external distractions.²¹⁶

Novice drivers, deprived of the adult “copilots” who initially supervised their driving as learners, encounter multiple situations

²¹⁰ Dahl, *supra* note 205, at S283.

²¹¹ *Id.*

²¹² SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 9.

²¹³ Keating & Halpern-Felsher, *supra* note 156, at S273; SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 9; Waller, *supra* note 96, at 18.

²¹⁴ SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 9.

²¹⁵ Drummond, *supra* note 178, at 44; SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 9.

²¹⁶ Groeger, *supra* note 19, at i20; Nils Petter Gregersen, *What Should Be Taught? Basic Vehicle Control Skills or Higher Order Skills?*, in *NEW TO THE ROAD: REDUCING THE RISKS FOR YOUNG MOTORISTS* 103, 104 (Herbert Simpson ed., 1996); SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 7, 9.

that are new to them, and the tasks of processing and responding to each of these situations demand significant cognitive resources.²¹⁷ 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.²¹⁸

With deliberate, effortful practice, the coordinated performance of driving components becomes automated, and the demands on cognitive resources lessen.²¹⁹ Because driving is cognitively demanding for the inexperienced driver, however, distractions can easily disrupt the driver's performance, which is already relatively inconsistent.²²⁰ 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.²²¹

2. *The Role of Guided Practice.* Guided practice facilitates expertise development, and learning theorists stress its importance during the process of skill acquisition.²²² 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.²²³

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

²¹⁷ Gregersen, *supra* note 216, at 104.

²¹⁸ Gregersen & Bjurulf, *supra* note 48, at 232.

²¹⁹ *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 19, at i20.

²²⁰ Groeger, *supra* note 19, at i20.

²²¹ *Id.*

²²² Keating & Halpern-Felsher, *supra* note 156, at S273.

²²³ *Id.*

improving licensing safety.²²⁴ Driver-education programs, traffic safety experts now suggest, might at best be an effective way to acquire initial basic driving skills.²²⁵ But the Subcommittee on Young Drivers of the Transportation Research Board estimated that it currently takes eighteen to twenty-four months of independent driving for novice drivers to accumulate the experience required for driving competence.²²⁶

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 two-thirds in the next 250 miles, and continue to decline modestly as independent driving experience increases.²²⁷

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 decisionmaking capacities—which also can only occur over time as development progresses—to acquiring driving competence.

C. THE EFFECTS OF REGULATORY IMMATURITY

As discussed above, competent driving requires the effortful acquisition of knowledge and skill. Competent and safe driving also requires mature self-regulatory capacity—the ability to control one’s attention, emotions, and behavior across a variety of social situations and contexts.²²⁸ Regulatory competence involves the ability to function (here, to maneuver a vehicle) proficiently in

²²⁴ Simpson, *supra* note 55, 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, *supra* note 96, at 18.

²²⁵ Williams, *supra* note 50, at i5. 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. *Id.*

²²⁶ SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 9.

²²⁷ Keating & Halpern-Felsher, *supra* note 156, at S273; *see also* Laird, *supra* note 40, at 311 (finding “very high crash rates during the first few months of independent driving that decline rapidly for about 6 months and then more slowly for years”); McCartt et al., *supra* note 42, at 311–12 (summarizing multiple studies coming to similar conclusions). 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., *supra* note 41, at 684.

²²⁸ Dahl, *supra* note 205, at S278; Graham & Gootman, *supra* note 149, at S255.

the face of challenging circumstances or major distractions.²²⁹ 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).²³⁰

Both drivers whose inexperience demands they devote significant cognitive resources to the driving task and drivers who lack mature self-regulatory capacities are more susceptible to distractions and the lapses in attention they may cause.²³¹ Failures of self-regulatory control can also make drivers more vulnerable to unchecked emotion and the resulting impulsive actions to which they may lead.²³²

The development of regulatory competence is ongoing during adolescence. 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.²³³ Although research in both fields is still developing, essential insights drawn from each field 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.²³⁴ And partly because this development is

²²⁹ Keating & Halpern-Felsher, *supra* note 156, at S274.

²³⁰ *Id.*

²³¹ *Id.*; Dahl, *supra* note 205, at S278.

²³² See Dahl, *supra* note 205, at S278 (“[A]n impulsive action triggered by a strong emotion can lead to deadly consequences in an automobile.”).

²³³ 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. Researchers can also use fMRI to compare patterns of neural activity of different groups, such as children, adolescents, and adults. See *id.* at 1655 (discussing several such studies). 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 1660–61.

²³⁴ Dahl, *supra* note 205, at S278.

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 mid-adolescence, individuals have the cognitive capacity to make competent decisions. Second, certain contexts can hinder the decisionmaking abilities that adolescents otherwise possess.²³⁵

Cognitive capacity, including learning and reasoning from facts and experience and information processing, improves more or less linearly throughout childhood, reaching adult-like levels by mid-adolescence.²³⁶ The reasoning and basic information-processing capacities of the typical sixteen-year-old, according to researchers, are essentially indistinguishable from those of adults.²³⁷

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

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.²³⁸ Early behavioral decision models

²³⁵ See B.J. Casey et al., *The Adolescent Brain*, 28 DEVELOPMENTAL REV. 62, 64, 68 (2008) (noting that “adolescents are able to reason and understand risks of behaviors in which they engage,” but finding that individual differences in reward-related processing can exacerbate developmental changes, making some teens more prone to engage in risky behavior); Geier & Luna, *supra* note 23, at 218 (finding that adolescent brains differ from adult brains in aspects of reward processing and cognitive control).

²³⁶ Laurence Steinberg et al., *Are Adolescents Less Mature Than Adults?: Minors' Access to Abortion, the Juvenile Death Penalty, and the Alleged APA “Flip-Flop,”* 64 AM. PSYCHOLOGIST 583, 590–92 (2009).

²³⁷ Laurence Steinberg, *A Social Neuroscience Perspective on Adolescent Risk-Taking*, 28 DEVELOPMENTAL REV. 78, 80 (2008).

²³⁸ 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, *supra* note 237, at 79.

Developmental scientists reason that evolutionary processes would have selected for these characteristics, which presumably motivated adolescents (of all cultures and species) to leave their natal environments and seek out mates. Laurence Steinberg, *A Behavioral*

attributed these behavioral characteristics to cognitive deficiencies that caused adolescents to misperceive risks and to fail to appreciate the long-term consequences of their decisions.²³⁹ Studies, however, revealed no cognitive differences between adolescents and adults that could explain their different propensities for risk-taking.²⁴⁰

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.”²⁴¹ Cognitive deficiencies do not account for adolescents’ propensity for risky and impulsive decisionmaking.²⁴² Researchers have endeavored to determine why adolescents nonetheless frequently make *irrational*, risky decisions.

Behavioral scientists examined more closely the real-world contexts²⁴³ in which adolescents make decisions, gaining valuable insights into adolescent decisionmaking processes.²⁴⁴ Their findings confirmed adolescents’ competence to make rational decisions—at least when making decisions in the artificial conditions of the research laboratories in which they complete tasks involving minor, symbolic risks.²⁴⁵ The real-world contexts—including driving contexts—in which adolescents make decisions, however, can drastically affect the quality of their decisionmaking.²⁴⁶

Scientist Looks at the Science of Adolescent Brain Development, 72 BRAIN & COGNITION 160, 161 (2010).

²³⁹ Valerie F. Reyna & Frank Farley, *Risk and Rationality in Adolescent Decision Making: Implications for Theory, Practice, and Public Policy*, 7 PSYCHOL. SCI. PUB. INT. 1, 33 (2006).

²⁴⁰ Steinberg, *supra* note 237, at 80.

²⁴¹ *Id.*

²⁴² *Id.*

²⁴³ 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. Klaczynski eds., 2005).

²⁴⁴ See Steinberg, *supra* note 237, at 100 (recommending such a change in focus).

²⁴⁵ See *id.* at 80 (finding few, if any, age-related differences in lab studies on evaluation of risk); Reyna & Farley, *supra* note 239, at 2 (criticizing lab tests for failing to account for real-world conditions).

²⁴⁶ Margo Gardner & Laurence Steinberg, *Peer Influence on Risk Taking, Risk Preference, and Risky Decision Making in Adolescence and Adulthood: An Experimental Study*, 41 DEVELOPMENTAL PSYCHOL. 625, 625 (2005); Reyna & Farley, *supra* note 239, at 12.

When decisionmaking contexts involve stressors that require the exercise of psychosocial maturity and regulatory competence—requiring that a decision be made in an unfamiliar situation (such as the new perceptual situations involved in driving); under time pressure (such as 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 or under the influence of peers (including the direct or distal influence of peer passengers)—adolescent decisionmaking suffers.²⁴⁷

Emerging research in the neurosciences helps explain why decisionmaking context matters.²⁴⁸

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 decisionmaking, and general lack of self-regulatory control on the one hand, and improved cognitive ability on the other.²⁴⁹ The

Cognitive researchers refer 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 LAW & HUM. BEHAV. 219, 220 (1996). Consistent with these observations, studies demonstrate that not all cognitive processes mature by mid-adolescence. Some processes, such as certain aspects of working memory and response inhibition, 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, 105 (2010) (suggesting that all components of working memory mature by the early twenties). Working memory and response inhibition are 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.

²⁴⁷ Reyna & Farley, *supra* note 239, at 12; Gardner & Steinberg, *supra* note 246, at 625.

²⁴⁸ See generally Valerie F. Reyna & Frank Farley, *Is the Teen Brain Too Rational?*, 17 SCI. AM. SPECIAL EDITION, June 2007, at 60 (summarizing research on teen decisionmaking regarding risky behaviors like sex and drinking, and recommending intervention programs based on more intuitive “gist-based” reasoning). 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. Reyna & Farley, *supra* note 239, at 6. Researchers advance a number of theories to explain this, some related to cognition and others grounded in neural development itself. See Baruch Fischhoff, *Assessing Adolescent Decision-Making Competence*, 28 DEVELOPMENTAL REV. 12, at 19–20 (2008) (listing cognitive factors that might contribute to teens' poor risk/benefit assessment); Geier & Luna, *supra* note 23, at 213 (attributing sensation-seeking in teens to immature brain circuitry).

²⁴⁹ See Casey et al., *supra* note 235, at 63 (discussing cognitive and neurobiological hypotheses that fail to adequately account for adolescent decisionmaking behavior). Developmental psychologist Laurence Steinberg recently emphasized the importance—to all disciplines within developmental science—of research in developmental neuroscience,

model is primarily oriented around development in two neural systems of the brain—the system associated with *cognitive control*, and the one associated with *socio-emotional maturity*, which includes self-regulatory capacities.²⁵⁰

The core insight of this dual-systems model is that these two neural systems develop along different timelines.²⁵¹ This temporal disjunction has the potential to explain adolescents' risk-taking and poor decisionmaking despite their improved cognitive ability, as well as other aspects of adolescent psychology and behavior.²⁵²

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 and processing.²⁵³ Activity in certain neural reward systems peaks rapidly and dramatically in early adolescence, around the time of pubertal maturation, then declines.²⁵⁴ Researchers believe that

suggesting that this research has the “potential to structure a new, overarching model of normative . . . adolescent development.” Steinberg, *supra* note 238, at 162. *See generally* Steinberg, *supra* note 237 (proposing a framework for theory and research informed by developmental neuroscience). *See also* Burnett et al., *supra* note 233, at 1660 (summarizing broadly compatible models).

²⁵⁰ *See* Steinberg, *supra* note 237, at 83 (framing adolescent risk-taking in terms of changes in the brain’s “socio-emotional system” and its “cognitive control system”).

²⁵¹ *See id.* at 97–98 (“[B]asic intellectual abilities reach adult levels around age 16, long before the process of psychosocial maturation is complete . . .”); Laurence Steinberg et al., *Age Differences in Sensation Seeking and Impulsivity as Indexed by Behavior and Self-Report: Evidence for a Dual Systems Model*, 44 DEVELOPMENTAL PSYCHOL. 1764, 1764 (2008) (“Neurobiological evidence in support of the dual systems model is rapidly accumulating.”).

²⁵² *See infra* notes 238–40 and accompanying text. For slightly different accounts of the dual-systems model, *see* Casey et al., *supra* note 235, at 63–64 (describing the model in terms of development of specific areas in the brain); Geier & Luna, *supra* note 23, at 213 (describing the model in terms of cognitive control and incentive processing systems); and 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).

²⁵³ *See* Steinberg, *supra* note 237, at 83 (noting that the socio-emotional system includes the “amygdala, nucleus accumbens, orbitofrontal cortex, medial prefrontal cortex, and superior temporal sulcus”).

²⁵⁴ *See* Geier & Luna, *supra* note 23, at 216–17 (discussing developmental changes in dopamine systems); Steinberg et al., *supra* note 251, at 1764–66 (“[A]dolescent risk taking is hypothesized to be stimulated by a rapid and dramatic increase in dopaminergic activity within the socioemotional system around the time of puberty . . .”). For a more detailed discussion of key aspects of this aspect of brain development, *see* CHARLES A. NELSON ET AL., NEUROSCIENCE OF COGNITIVE DEVELOPMENT: THE ROLE OF EXPERIENCE AND THE DEVELOPING BRAIN 24 (2006).

this peak in activity makes adolescents experience potentially rewarding stimuli as even more rewarding than during either childhood or adulthood.²⁵⁵ 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.”²⁵⁶

For young drivers, strongly desirable sensations associated with driving include excitement, power, and increased status among peers.²⁵⁷ A propensity for sensation-seeking has consistently been associated with risky driving, traffic violations, and car crashes.²⁵⁸

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.²⁵⁹ The cognitive control system follows a more gradual and linear developmental trajectory than does the socio-emotional system and, along with other structural changes in the brain, correlates with the maturation of basic cognitive processes by age sixteen.²⁶⁰

Other structural changes that increase connections within and between different regions of the brain correlate with behavioral improvements in higher-order and executive functions (such as

²⁵⁵ See Steinberg, *supra* note 237, at 85 (theorizing that this is caused by a temporary lack of “buffering capacity” in dopamine release systems).

²⁵⁶ Steinberg et al., *supra* note 251, at 1765.

²⁵⁷ See 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 BRIT. J. PSYCHOL. 248, 250–51 (2012) (citing reported studies).

²⁵⁸ *Id.* at 251.

²⁵⁹ Luna et al., *supra* note 246, at 101. This system includes the prefrontal cortex, which is involved in executive, decisionmaking, and self-regulatory functions, and “association” areas, which connect different regions of the brain and thus support the complex integration of functions. See Steinberg, *supra* note 237, at 93–94 (describing the effects of maturation of the prefrontal and parietal association cortices). 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 37 ADVANCES IN CHILD DEVELOPMENT AND BEHAVIOR 233, 240 (Patricia Bauer ed., 2009).

²⁶⁰ See Steinberg, *supra* note 237, at 93–95 (describing specific structural developments in the cognitive control system). For more detailed descriptions of these structural changes, see 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 COGNITIVE SCI. 60, 62 (2005); and Arthur W. Toga et al., *Mapping Brain Maturation*, 29 TRENDS NEUROSCIENCES 148, 149–50 (2006).

response inhibition, planning, spatial working memory, etc.).²⁶¹ Increased connectivity between regions involved in social and emotional information processing, and those involved in cognitive control processes correlates with the coordination of affect (the external expression of emotions) and cognition.²⁶² 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.²⁶³

In summary, adolescents' basic cognitive abilities are mature by age sixteen, giving them the capacity to reason, learn, process information, and make the rational decisions required to acquire basic driving knowledge and skills. But their susceptibility to the confounding influence of heightened sensitivity to reward increases and peaks around mid-adolescence, inclining 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 or overwhelm cognitive processes and shape adolescent behaviors, especially in pressured situations or those triggering heightened emotion.²⁶⁴ The emotional regulation and impulse control necessary for safe driving both improve through adolescence and into the mid-twenties.²⁶⁵

²⁶¹ See Steinberg, *supra* note 237, at 94–96 (describing the effects of increases in white brain matter in certain regions of the brain).

²⁶² See *id.* at 95–96 (suggesting that adolescents' brains may, less likely than those of adults, activate multiple cortical and subcortical areas simultaneously in response to emotional stimuli, resulting in a deficit in synchronization of affect and cognition).

²⁶³ See *id.* at 94 (finding that some of these functions showed continued improvement through age eighteen, and others continued to improve into the early twenties); 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, 1016 (reporting "a steady increase in resistance to general peer influence with age"). See generally Luna et al., *supra* note 246 (examining fMRI studies to track the development of different brain functions through adolescence).

²⁶⁴ See Luna, *supra* note 259, at 257 (concluding that though "inhibitory processes are available by childhood . . . the ability to flexibly and consistently execute control continues to improve through adolescence"); Steinberg, *supra* note 237, at 96–98 ("This lack of cross-talk across brain regions results not only in individuals acting on gut feelings without fully thinking . . . but also in thinking too much when one's gut feelings ought to be attended to . . .").

²⁶⁵ Luna, *supra* note 259, at 257; Steinberg, *supra* note 237, at 97–98 (finding that the process of psychosocial maturation is not complete until "well into the young adult years").

Research into the adolescent brain thus supports the consistent findings of cognitive psychologists that “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.”²⁶⁶

D. UNALTERABLE RISK: THE COMBINED EFFECTS OF INEXPERIENCE AND NORMATIVE DEVELOPMENTAL PROCESSES

The combined effects of inexperience and immature self-regulatory capacity can result in driving behavior that leads to potentially serious, or even fatal, consequences.²⁶⁷ Professor Jeffrey Arnett, whose study of adolescence was cited by the U.S. Supreme Court in *Roper v. Simmons*,²⁶⁸ points out that sixteen-year-olds are at a “markedly different stage of adolescent development” than are eighteen-year-olds.²⁶⁹ By ages fifteen or sixteen, 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 eighteen to twenty-four months of driving experience.²⁷⁰ This 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.²⁷¹ The Transportation Research

²⁶⁶ Groeger, *supra* note 19, at i19.

²⁶⁷ Dahl, *supra* note 205, at S278.

²⁶⁸ 543 U.S. 551, 569 (2005) (holding unconstitutional the imposition of capital punishment on juveniles younger than eighteen).

²⁶⁹ Williams, *supra* note 50, at i4 (citing Arnett, *supra* note 37, at ii17–ii23).

²⁷⁰ See *supra* note 226 and accompanying text. “Some of the factors contributing to a large proportion of novice teenage drivers’ crashes (for example, 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.” Braitman et al., *supra* note 2, at 52.

²⁷¹ SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 7.

Board's Subcommittee on Young Drivers soundly rejected this view, 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."²⁷² Empirical data comparing the crash rates of younger and older novices²⁷³ and research in adolescent development²⁷⁴ convincingly demonstrate otherwise.

Driving inexperience, as noted above, is not the overriding, or even primary, cause of adolescent crash risk. At younger driver ages—i.e., fifteen to seventeen—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.²⁷⁵

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 specifically, and supported by research of the adolescent brain.²⁷⁶ Incomplete, ongoing development of the capacities required to regulate behavior and emotions, impairment of decisionmaking abilities in pressured situations, and inclination towards risk-taking behavior are all characteristics typical of adolescence—and all confound the successful execution of the nascent driving competence adolescents do possess.

IV. PROPOSED RESPONSES, LEGAL AND EXTRALEGAL

Despite more than a decade of varied legislative efforts, sixteen- and seventeen-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.²⁷⁷ Existing measures, even those having some positive effects, insufficiently safeguard both young drivers and the public at large from young drivers' immaturity and inexperience.²⁷⁸ Instead, "the sheer magnitude of the injuries and

²⁷² *Id.*

²⁷³ See *supra* Part II.A.3.

²⁷⁴ See *supra* Part III.C.

²⁷⁵ See *supra* notes 49–51 and accompanying text.

²⁷⁶ See *supra* Parts III.C.1–2.

²⁷⁷ Mayhew et al., *supra* note 53, at 19.

²⁷⁸ *Id.*

fatalities that continue to result from teen crashes” alone, according to the 2007 report of the National Academies’ interdisciplinary workshop, “shows that current prevention efforts are inadequate.”²⁷⁹

If future regulatory efforts are to accomplish what past efforts have not, lawmakers considering how to approach the serious public health problem posed by young drivers must 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.”²⁸⁰

Part II delineated the nature of the public health problem that is adolescent driving, including current regulatory and socio-cultural contexts that shape it. Part III gathered and interrelated cross-disciplinary research to explain the intrapersonal and interpersonal factors that affect adolescent driving.

This final Part derives from the first two a set of legal proposals to address this public health issue, guided by the basic ends of the liberal state and its obligations to its immature citizens and accounting for the liberty interests of those citizens themselves. It argues 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 effectively 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 pressing this reform, presumably for political reasons. This Part argues for evidence-based advocacy to help overcome these political hurdles.²⁸¹

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

Finally, it explains 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

²⁷⁹ NAT’L RES. COUNCIL ET AL., *supra* note 4, at 2.

²⁸⁰ SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 7.

²⁸¹ See Graham & Gootman, *supra* note 149, at S255 (discussing the importance of evidence-based advocacy in the context of teen driving issues).

with current constitutional protections afforded both young people and their parents.

A. THE LIBERAL STATE'S ENDS, IMMATURE CITIZENS' INTERESTS

In previous work, I have argued that even immature citizens have a minimum basic entitlement to liberty, and described the nature of the state's duty to guarantee it.²⁸² Especially relevant to the state's decisionmaking in the context of adolescent driving, however, is the importance of the state's identifying the interests of the young—which change dramatically as they develop to maturity—and considering them in its decisionmaking.

The young have two basic categories of interests: welfare interests and autonomy interests.²⁸³ Their welfare interests pertain to their well-being, irrespective of any choice they might make.²⁸⁴ Among their welfare interests are an interest in acquiring the prerequisites necessary to attain their mature capacities, and an interest in being protected from their own deficiencies.²⁸⁵ Their autonomy interests include making self-determining choices and having the liberty to exercise the liberties of which they are capable.²⁸⁶

The state thus owes its immature citizens its best effort to determine, and extend to them, those liberties they are capable of exercising. It also owes them, however, its best effort to restrain them from exercising liberties that exceed their capacities, and is particularly justified in doing so when their bad decisions harm not only the immature citizens themselves, but others as well.

In light of the evidence presented above, the state's primary obligation with respect to adolescent drivers is to protect them—and other members of society—from their deficiencies. Its secondary obligation is to facilitate their acquiring the ability to competently exercise what is, to many citizens, an important liberty.

²⁸² See Vivian E. Hamilton, *Immature Citizens and the State*, 2010 BYU L. REV. 1055, 1076–82 (arguing that the state owes duties to its immature citizens both as citizens who happen to be immature and as citizens who will be mature in the future).

²⁸³ *Id.* at 1095.

²⁸⁴ *Id.*

²⁸⁵ *Id.*

²⁸⁶ *Id.*

B. EFFECTIVELY ELIMINATING ADOLESCENT CRASH RISK

Allan Williams and colleague David Preusser, each of whom has completed more than two decades of highly regarded research in traffic and highway safety, have concluded that “[o]ne way to address the resulting young driver problem would be to follow the Europeans and simply delay driver licensing until adolescent development is largely complete.”²⁸⁷ They go on to reject this approach, however, perceiving two barriers to its success—“[(1)] the need to accumulate driving experience and [(2)] the need for mobility, especially in suburban and rural areas.”²⁸⁸ Although the costs of raising the age of licensure should be balanced against any gains in road safety, Williams and Preusser arguably overstate the extent to which sixteen- and seventeen-year-old licensure serves a social function so critical that its loss outweighs the gains in safety achieved by delaying that licensure.

This section proposes (1) lowering the age of learner’s licensure in order to facilitate young drivers’ accumulation of significant driving experience prior to unsupervised driving, and (2) raising the age of unsupervised licensure (both provisional and full) 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.²⁸⁹ The driving experience—and increased skill—acquired by adolescents during mandatory learner’s periods partially account for the success of licensing systems that impose those requirements.²⁹⁰

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 they admit that “there is presently little evidence that any kind of education or training other than ‘just driving,’ effectively reduces crash rates.”²⁹¹ Acquiring experience thus takes time, but evidence suggests that it is time well spent. As Professor Waller

²⁸⁷ Williams & Preusser, *supra* note 128, at 335.

²⁸⁸ *Id.*

²⁸⁹ See *supra* Part II.A.3.

²⁹⁰ See *supra* Part II.B.3.

²⁹¹ Foss, *supra* note 188, at 186.

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."²⁹²

Adolescents should thus begin the process of driving-skill acquisition as early as is practicable, but only under the conditions demonstrated to carry the lowest possible risk (outside of a simulated environment)—i.e., with adult supervision.²⁹³

By ages fifteen or sixteen, adolescents' cognitive capacities are comparable to those of adults, and they are able to learn the rules governing driving and acquire basic driving skills.²⁹⁴ 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.²⁹⁵ When crashes involving learner's permit holders do occur, they typically involve learners driving unsupervised, in violation of permit requirements.²⁹⁶

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 eighteen.²⁹⁷ The age of learner's licensure was lowered in 1993, however, from seventeen and a half to sixteen.²⁹⁸ Studies found that drivers who obtained learner's permits at age sixteen accumulated more hours of supervised practice (without any pre-licensure increase in crash

²⁹² Waller, *supra* note 96, at 18.

²⁹³ See *supra* Part III.A.3.

²⁹⁴ See *supra* Part III.C.

²⁹⁵ Mayhew et al., *supra* note 41, at 684; see also Williams & Tison, *supra* note 5, at 147 (studying fatal crash data for thirteen- to fifteen-year-old drivers and finding that "[l]earners with an adult passenger stood out as having the most favorable crash profile").

²⁹⁶ Hedlund et al., *supra* note 97, at 110.

²⁹⁷ See Waller et al., *supra* note 5, at 117 (implying that Sweden's age for full licensure was eighteen prior to 1993).

²⁹⁸ *Id.* (citing Nils Petter Gregersen et al., *Sixteen Years Age Limit for Learner Drivers in Sweden—An Evaluation of Safety Effects*, 32 ACCIDENT ANALYSIS & PREVENTION 25 (2000)); see also Lawrence P. Lonero, *Trends in Driver Education and Training*, 35 AM. J. PREVENTIVE MED. S316, S318 (Supp. 2008) (noting the "positive safety results in Sweden" after the change).

risk), and had a 35% decrease in crash risk upon acquiring full licensure at age eighteen.²⁹⁹

In the United States, it is likely that providing for as long a period of supervised driving practice as is feasible will result in corresponding gains in experience and subsequently reduce crash risk upon the acquisition of unsupervised licensure. It is also possible that lowering or maintaining the age of learner's licensure—to between fourteen and sixteen—may have the political benefit of providing young people with a tangible sense of progress towards full licensure.

2. *Raising the Age of Provisional and Full Licensure.* The United States is an early licensing country—indeed, the earliest licensing country in the developed world.³⁰⁰ The adoption of age sixteen as the presumptive norm reflects both arbitrary convention and historical factors (i.e., the needs of agricultural communities) that no longer justify early licensure.³⁰¹ Delaying unsupervised licensure can significantly diminish the effect of age-related developmental factors that contribute to adolescent crash risk.³⁰²

The younger the age at which a driver becomes licensed, the higher the crash (and fatal crash) risk. Because inexperience is a factor, lowering the age of learner's licensure and extending this 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. Studies suggest, however, that age-related developmental characteristics contribute most significantly to crash risk at the younger licensing ages.³⁰³ In other words, practice hours may somewhat reduce but cannot overcome the risks posed by developmental immaturity.

The major contributor to crash reduction attributable to GDL systems is the delay in licensure that tends to accompany those licensing systems.³⁰⁴ 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

²⁹⁹ Waller et al., *supra* note 5, at 117–18.

³⁰⁰ See *supra* note 5 and accompanying text.

³⁰¹ See Mayhew et al., *supra* note 53, at 17–18 (suggesting that these factors explain why the minimum age in the United States is lower than that of other developed nations).

³⁰² Williams, *supra* note 50, at i4.

³⁰³ *Id.*

³⁰⁴ McCartt et al., *supra* note 114, at 698.

teens become licensed.³⁰⁵ States whose GDL systems have resulted in delays in licensure have generally seen the largest crash reductions among young drivers.³⁰⁶ Under these systems, younger, less mature drivers, the most crash-prone, have less unsupervised driving exposure (i.e., they spend fewer hours on the road). The result is a predictable reduction in crashes.³⁰⁷ 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.”³⁰⁸

Thus, those licensing provisions that operate to raise the age of licensure—even by requiring, for example, that a sixteen-year-old hold a learner’s permit for six or eight 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-seventeen licensing law associated it with reductions between 65% and 85% in sixteen-year-old crash involvement.³⁰⁹ Some of the reduction in driver crash involvement was offset by higher crash involvement of seventeen-year-old drivers, which seemed compatible with driver inexperience.³¹⁰

³⁰⁵ See NAT’L RES. COUNCIL ET AL., *supra* note 4, at 10 (noting that GDL programs “prolong the time it takes to become fully licensed”); Williams & Mayhew, *supra* note 69, at S326 (arguing that the safety benefits of GDL programs come primarily from “licensure delay”).

³⁰⁶ See Williams & Mayhew, *supra* note 69, at S326 (finding evidence that GDL systems that combine extended learner periods with nighttime and passenger restrictions see the greatest crash reductions, and arguing that the extended learner period, achieved primarily through licensure delay, is the biggest contributing factor).

³⁰⁷ *Id.* See generally Anne T. McCartt et al., *New Jersey’s License Plate Decal Requirement for Graduated Driver Licenses: Attitudes of Parents and Teenagers, Observed Decal Use, and Citations for Teenage Driving Violations*, 14 TRAFFIC INJ. PREVENTION 244 (2013).

³⁰⁸ McCartt et al., *supra* note 110, at 245.

³⁰⁹ Allan F. Williams et al., *Variations in Minimum Licensing Age and Fatal Motor Vehicle Crashes*, 73 AM. J. PUB. HEALTH 1401, 1402 (1983).

³¹⁰ *Id.* at 1402–03. Despite the increased crash involvement of seventeen-year-olds, the net effect of the New Jersey law is, according to researchers, “strongly positive.” *Id.* at 1403.

Recent proposals predict, however, that a licensing system that both delays licensure to age seventeen and implements elements of GDL provisions would lead to major reductions in young drivers' crashes.³¹¹

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

C. REDUCING ADOLESCENT CRASH RISK

Short of (or in addition to) reducing the age for 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. Institutional- and sociocultural-level reforms can account for, and may positively influence, 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.³¹² Additional restrictions may provide further protective benefits. These restrictions might include prohibitions on handheld or hands-free devices (preventing cell phone use, texting, etc.) or other distractions.³¹³

In response to the overwhelming evidence of the negative effect of peer passengers, all but three states have enacted some form of passenger restriction on young drivers.³¹⁴ While regulations restricting new teenage drivers have been effective in reducing crashes involving peer passengers, their effectiveness has been limited by teenage drivers' well-documented and common noncompliance with the restrictions.³¹⁵ Increased enforcement and

³¹¹ See McCartt et al., *supra* note 110, at 245–46.

³¹² Keating & Halpern-Felsher, *supra* note 156, at S274 (suggesting that GDL restrictions that address these concerns are “likely to help adolescents acquire and solidify driving skills”).

³¹³ *Id.*

³¹⁴ *Graduated Driver Licensing (GDL) Laws*, GOVERNORS HIGHWAY SAFETY ASS'N (June 2014), http://www.ghsa.org/html/stateinfo/laws/license_laws.html.

³¹⁵ Williams & Tison, *supra* note 5, at 148; Lee & Abdel-Aty, *supra* note 185, at 1703.

mechanisms that facilitate their enforcement are needed. An example of one such enforcement mechanism is the New Jersey requirement—recently upheld by the New Jersey Supreme Court against constitutional challenge—that all drivers under age twenty-one display highly visible decals on their vehicles.³¹⁶

Given high nighttime and fatigue-related crash rates, most states have imposed nighttime driving restrictions on teenage drivers.³¹⁷ 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.³¹⁸ 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,³¹⁹ 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.³²⁰ “[P]eers 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.”³²¹

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.³²² There has been little research on the impact of

³¹⁶ Trautmann *ex rel.* Trautmann v. Christie, 48 A.3d 1005, 1007 (N.J. 2012) (per curiam).

³¹⁷ McCartt et al., *supra* note 114, at 698.

³¹⁸ See Keating & Halpern-Felsher, *supra* note 156, at S274 (citing Groeger, *supra* note 19).

³¹⁹ *Id.*

³²⁰ See *supra* Part II.C.

³²¹ Keating & Halpern-Felsher, *supra* note 156, at S276.

³²² Researchers have developed a more sophisticated understanding of certain characteristics that enhance the influence of the antecedent messages. For a discussion of

PSAs, with assessments generally showing them to be ineffective or only marginally effective.³²³ When they do demonstrate positive results, moreover, benefits tend to last only as long as the PSA intervention itself. For example, one 4.5-month multimedia traffic-safety campaign that targeted young drivers in northeastern Tennessee correlated with a 21.6% decrease in at-fault crashes of sixteen- to nineteen 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.³²⁴ 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.³²⁵

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 midteens (twenty times higher than prepubescent levels) increase aggressive behavior generally, including aggressive driving.³²⁶ Males also have higher sensation-seeking tendencies than females, which potentially contributes to their risky driving behavior.³²⁷ Other researchers argue that socialization and conformity with gender norms are more significant factors.³²⁸ These researchers argue that, even in the presence of high levels of testosterone,

these, see Kimberly P. Whittam et al., *Effectiveness of a Media Campaign to Reduce Traffic Crashes Involving Young Drivers*, 36 J. APPLIED SOC. PSYCHOL. 614, 615 (2006).

³²³ *Id.* at 615.

³²⁴ *Id.* at 624. The campaign’s theme was “What’s the Hurry?” and included two thirty-second television announcements, two corresponding radio announcements, and a billboard display. *Id.* at 617–18.

³²⁵ *Id.* at 624–25.

³²⁶ *E.g.*, Arnett, *supra* note 37, at ii19. Female adolescents also experience elevated levels of testosterone, but it is a relatively modest increase compared to that experienced by males. *Id.*

³²⁷ 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 SCI. 424, 430 (2011). Cestac and co-authors conducted a study in France, concluding that men seem to perceive more social pressure to speed than do women. *Id.*

³²⁸ See Sibley & Harré, *supra* note 93, at 458–59 (proposing a “gender role socialization model” of driving self-enhancement); Cestac et al., *supra* note 327, at 431 (concluding that social comparison plays the predominant role in the speeding intention of drivers who have held their licenses for one to three years).

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.³²⁹

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” driving).³³⁰ They acknowledge the difficulty in dislocating ingrained and widespread cultural practices.³³¹ As sites in which to begin these sorts of efforts, though, they suggest public advertising and incorporating them into school curricula.³³²

D. POLITICAL AND LEGAL CHALLENGES

The regulatory systems implemented to govern teen licensure aim to increase public safety by reducing teen crash risk, but their effects can be far-reaching and trigger a wide range of concerns. For example, licensure regulations implicate the appropriate balance between federal- and state-level legal responses with which public health law 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.³³³

This section first identifies two political hurdles to enacting licensure reform. It argues that the first—political inattention—is

³²⁹ Sibley & Harré, *supra* note 93, at 460.

³³⁰ *Id.*

³³¹ *Id.*

³³² *Id.*

³³³ See *supra* Part IV. B–C.

under-acknowledged by those working in the field, whereas the second—widespread popular resistance—is overstated. The 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.

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.³³⁴ Government support of such research has come even more slowly. From 1972 to 2008, for example, there were 314 federally funded studies of adolescents and substance use, but only fifteen federally funded studies of adolescents and driving.³³⁵ 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 references for articles addressing teen driving.³³⁶ In light of the significant health burden imposed by motor vehicle crashes involving teen drivers, this academic and political inattention must be overcome. 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, for example, the Insurance Institute for Highway Safety) and state legislatures have made meaningful 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

³³⁴ See Laird, *supra* note 40, 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.”); Shope & Bingham, *supra* note 7, at S261 (complaining that the “safety of teenage drivers has too often been neglected in books and publications on adolescent health”).

³³⁵ Blachman & Abrams, *supra* note 1, at S285.

³³⁶ SUBCOMM. ON YOUNG DRIVERS, *supra* note 175, at 5.

option.³³⁷ It is undoubtedly true that "[l]egislative change requires continuous effort, especially when safety has to compete with custom and convenience, as it so often does."³³⁸ However, studies suggest that skeptics may overestimate the level of public resistance, and that such resistance may be more readily overcome than many believe.³³⁹ 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 one in five parents reported that safety concerns had led them to attempt (usually unsuccessfully) to delay their children obtaining a learner's permit.³⁴⁰ Another study surveying parents of graduating seniors in several Eastern states found that a significant majority supported minimum licensing ages of seventeen to eighteen or older in Connecticut (60%) and New York (61%).³⁴¹ In New Jersey, where the minimum licensing age was already seventeen, 92% supported the higher licensing ages (with 65% endorsing age seventeen and 25% endorsing ages eighteen or older).³⁴² Only in Delaware, an historically "easy-licensing" state, did a minority of parents (but a significant minority—37%) endorse licensing ages of seventeen or older.³⁴³

In a study of Connecticut and Florida parents' opinions on newly enacted legislation in those states, around 90% supported mandatory supervised learner's periods and nighttime curfews.³⁴⁴ In Connecticut, 82% of parents favored a nighttime curfew—even

³³⁷ See, e.g., Mayhew et al., *supra* note 53, at 19 (lamenting that "political and social pressures" have prevented raising the licensing age to eighteen or nineteen (citing A.F. Williams, *Laws and Regulations Applicable to Teenagers or New Drivers: Their Potential for Reducing Motor Vehicle Injuries*, in YOUNG DRIVER ACCIDENTS—IN SEARCH OF SOLUTIONS 43 (D.R. Mayhew et al. eds., 1983))).

³³⁸ Keating & Halpern-Felsher, *supra* note 156, at S272.

³³⁹ See Williams & Mayhew, *supra* note 69, at S325 ("[R]aising the minimum licensing age has never been seriously considered, even though it is widely supported in surveys of parents.").

³⁴⁰ Scott-Parker et al., *supra* note 149, at 470.

³⁴¹ William et al., *supra* note 111, at 5 tbl.4.

³⁴² *Id.*

³⁴³ *Id.*

³⁴⁴ *Id.* at 5.

though the legislature had removed the curfew provision from the enacted statute.³⁴⁵ Even those parents who anticipated that the new laws would inconvenience them and their children strongly favored the new legislation.³⁴⁶ 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.”³⁴⁷

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 sixteen, “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.”³⁴⁸ Where exactly to strike the balance between safety and mobility is a social policy decision, and ideally requires additional empirical study of the necessity of adolescent mobility.

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 “[t]he 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 guarantee of that right.”³⁴⁹

³⁴⁵ *Id.*

³⁴⁶ *Id.*

³⁴⁷ Waller, *supra* note 96, at 20–21 (citing Patricia F. Waller et al., *Parental Views of and Experience with Michigan’s Graduated Licensing Program*, 31 J. SAFETY RES. 9 (2000)). A proposed passenger restriction failed to pass, and nighttime restriction was shortened to restrict nighttime driving only from midnight to five a.m. *Id.* at 22.

³⁴⁸ Susan A. Ferguson et al., *Differences in Young Driver Crash Involvement in States with Varying Licensure Practices*, 28 ACCIDENT ANALYSIS & PREVENTION 171, 180 (1996) (citations omitted).

³⁴⁹ *Berberian v. Petit*, 374 A.2d 791, 794 (R.I. 1977); *see also Berberian v. Lussier*, 139 A.2d 869, 872 (R.I. 1958) (“[T]he right to use the public highways for travel by motor

Driving is thus subject to state-imposed conditions that must satisfy only minimal constitutional requirements of reasonableness.³⁵⁰ So long as regulations satisfy minimum constitutional requirements, courts will not second-guess legislatures' policy decisions.³⁵¹

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.³⁵² Age-based restrictions have been no exception, and courts have sustained them against both state and federal constitutional challenges.³⁵³ 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."³⁵⁴ 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 that nonetheless, "[t]he line must be drawn somewhere," and that although some persons below the 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."³⁵⁵

vehicles is one which properly can be regulated by the legislature in the valid exercise of the police power of the state.").

³⁵⁰ See *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, 742 (Fla. 1953) (same).

³⁵¹ See, e.g., *Trautmann ex rel. Trautmann v. Christie*, 15 A.3d 22, 29 (N.J. Super. Ct. App. Div. 2011), *aff'd*, 48 A.3d 1005 (N.J. 2012) ("We decline to discuss plaintiffs' policy arguments. The wisdom of [the state law requiring those under twenty-one to display decals on the outside of cars while driving] is a question for the Legislature not the courts.").

³⁵² *Mayhew et al.*, *supra* note 53, at 4 (quoting R.L. Donigan & E.C. Fisher, *Driver Licensing and the Law*, 13 TRAFFIC DIG. & REV. 20, 21 (1965)).

³⁵³ See, e.g., *State ex rel. 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").

³⁵⁴ *Id.*

³⁵⁵ *Id.*; see also *Charbonneau v. MacRury*, 153 A. 457, 463-64 (N.H. 1931) (admitting that the state's minimum age provision "arbitrarily" denies persons under sixteen the right to drive, but noting that "[t]he necessities of society . . . require that some age should be considered as prima facie evidence of maturity"); *Schultz v. Morrison*, 91 Misc. 248, 250

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 drivers' 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 resisting arrest.³⁵⁶

The federal government, on the other hand, lacks the power to regulate traffic safety or licensure. That is not to say that the federal government lacks influence over highway and traffic safety measures. To the contrary, Congress has made effective use of its spending power,³⁵⁷ conditioning federal monies on state adoption of desirable legislation. For example, twenty-one 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 twenty-one.³⁵⁸

Congress continues to use its spending power to encourage the states to enact legislation aimed at improving traffic safety—including legislation targeting young drivers. In 2012, for example, Congress passed the Moving Ahead for Progress in the 21st Century Act, which included amendments to the Highway

(N.Y. Sup. Ct. 1915), *aff'd*, 156 N.Y.S. 1144 (N.Y. App. Div.) (observing that a New York statute prohibiting unsupervised driving by persons under eighteen 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 others”).

³⁵⁶ See *State v. Smith*, 276 A.2d 369, 375 (N.J. 1971) (upholding statute allowing revocation as punishment for narcotics use); *Appeal of Deems*, 395 A.2d 616, 617 (Pa. Commw. Ct. 1978) (upholding statute allowing revocation after conviction for selling vehicles with defaced serial numbers); *Bieling v. Malloy*, 346 A.2d 204, 207 (Vt. 1975) (upholding statute allowing revocation for nonpayment of poll taxes); Michael S. Vaughn et al., *A Legislative and Constitutional Examination of “Abuse and Lose” Juvenile Driving Statutes*, 19 AM. J. CRIM. L. 411, 422 (1992) (citing a Florida decision upholding a statute allowing revocation for resisting arrest).

³⁵⁷ “The Congress shall have 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, cl. 1.

³⁵⁸ Pub. L. No. 98-363, § 6(a), 98 Stat. 435, 437–39 (1984) (codified as amended at 23 U.S.C. § 158 (2012)). The Supreme Court upheld the Act in *South Dakota v. Dole*, 483 U.S. 203, 212 (1987).

Safety Act.³⁵⁹ 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.”³⁶⁰

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. Courts 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.”³⁶¹ Litigants have also argued unsuccessfully 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 as “utterly frivolous.”³⁶²

Even if licensure fails to rise to the level of a constitutionally protected right, state classifications that draw distinctions between classes of individuals must comport with the requirements of the Fourteenth Amendment's Equal Protection Clause, under which classifications drawn along certain lines are inherently suspect—namely those based on race, national origin, or alienage.³⁶³ 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

³⁵⁹ Pub. L. No. 112-141, sec. 31102(g), § 402(m), 126 Stat. 405, 738 (2012) (codified at 23 U.S.C. § 402 (2012) (originally enacted as Highway Safety Act of 1966, Pub. L. No. 89-564, ch. 4, § 402, 80 Stat. 731, 731-33)).

³⁶⁰ 23 U.S.C. § 402(m) (2012).

³⁶¹ *Berberian v. Petit*, 374 A.2d 791, 794 (R.I. 1977).

³⁶² *Id.*

³⁶³ *McLaughlin v. Florida*, 379 U.S. 184, 192 (1964); *Loving v. Virginia*, 388 U.S. 1, 11 (1967); *Bolling v. Sharpe*, 347 U.S. 497, 499 (1954); *Hirabayashi v. United States*, 320 U.S. 81, 100 (1943); *Korematsu v. United States*, 323 U.S. 214, 216 (1944); *Oyama v. California*, 332 U.S. 633, 646 (1948).

most deferential standard of review.³⁶⁴ Age-based classifications thus survive “if the legislature could have reasonably concluded that the challenged classification would promote a legitimate state purpose.”³⁶⁵ As noted above, courts have upheld minimum age requirements against equal protection challenges:

[T]he state has a legitimate interest in preventing the operation of motor vehicles by those unable to exercise mature judgment[;] . . . individualized testing for maturity in this context is a practical impossibility[,] and . . . 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.”³⁶⁶

The research reported above merely extends both the common-sense observations of early-twentieth-century legislators and the grounded conclusions of Congress (expressed in current and earlier versions of the Federal Highway Safety Act) of the heightened risks posed by teen drivers. Informed by additional insights from this research, legislation imposing additional age-based restrictions on young drivers 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 that their children acquire licensure earlier rather than later or object to certain restrictions imposed on young drivers, the state’s countervailing interest in the public welfare and its child citizens gives it expansive regulatory rights.³⁶⁷ Thus, the Supreme

³⁶⁴ See *Mass. Bd. of Ret. v. Murgia*, 427 U.S. 307, 312–13 (1976) (holding that a statute requiring uniformed state police officers to retire at age fifty did not violate the Equal Protection Clause).

³⁶⁵ *Exxon Corp. v. Eagerton*, 462 U.S. 176, 196 (1983).

³⁶⁶ *Berberian v. Petit*, 374 A.2d at 795 (quoting *Dandridge v. Williams*, 397 U.S. 471, 485 (1970)).

³⁶⁷ 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

Court has upheld all manner of regulations that otherwise interfere with parental rights, such as a broad ability to regulate children's education. Conversely, parents wishing to delay their children 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.

Regulations' effects on both the young and their parents recently converged in *Trautmann v. Christie*, in which parents challenged on behalf of their teen children a New Jersey law requiring drivers under twenty-one to display a decal on the car identifying them as young drivers subject to various restrictions.³⁶⁸ 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.³⁶⁹ The parents argued that the law was preempted by a federal statute protecting drivers' privacy rights, violated equal protection rights guaranteed by both the Federal and New Jersey Constitutions, and would lead to unconstitutional searches and seizures.³⁷⁰ The attorney who brought and argued the case before the court, the father of a teenaged girl, expressed concern that the decals would increase the likelihood of teens being profiled by police or targeted by sexual predators.³⁷¹ Other New Jersey parents shared his concern and thus resisted the regulation on the grounds that they, better than the state, could determine how best to protect their

"[t]hat the State may do much, go very far, indeed, in order to improve the quality of its citizens, physically, mentally and morally").

³⁶⁸ *Trautmann ex rel. Trautmann v. Christie*, 48 A.3d 1005, 1007 (N.J. 2012) (per curiam) (upholding N.J. STAT. ANN. §§ 39:3–13.2a, 39:3–13, 39:3–13.4f, as amended by L. 2009, c. 37 ["Ch. 37"]).

³⁶⁹ N.J. TEEN DRIVER STUDY COMM'N, TEEN DRIVER STUDY COMMISSION RECOMMENDATION REPORT 1 (2008).

³⁷⁰ *Trautmann*, 48 A.3d at 1007–08. Plaintiffs argued first that the Federal Driver's Privacy Protection Act, 18 U.S.C. §§ 2721–2725, preempted Ch. 37, because the federal statute prohibits states from disclosing drivers' "personal information." *Id.* at 1007. Second, they argued that Ch. 37 treated young N.J. drivers differently from young drivers licensed in other states who were permitted to drive in New Jersey, thus violating the equal protections clauses of the federal and state constitutions. *Id.* at 1007; see U.S. CONST. amend. XIV, § 1; N.J. CONST. art. I, para. 1. Finally, they argued that, by permitting police to identify their age group, Ch. 37 constituted an "unreasonable search," also in violation of the federal and state constitutions. *Trautmann*, 48 A.3d at 1008; see U.S. CONST. amend. IV, XIV; N.J. CONST. art. I, para. 7.

³⁷¹ Kate Zernike, *Youth Driving Laws Limit Even the Double Date*, N.Y. TIMES, Aug. 14, 2012, at A1.

children.³⁷² The headline of a *New York 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*.³⁷³ In August 2012, the New Jersey Supreme Court rejected the challenge and upheld the statute.³⁷⁴

As discussed in Part IV.A above, policymakers considering measures whose effect would constrict the liberties of a category of individuals should consider more than whether their legislative efforts would survive constitutional scrutiny. Licensure restrictions implicate liberties important to individuals, even if they 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 generally agrees that liberties that individuals are themselves entitled to exercise include those which they are *capable* of exercising. Especially in contexts where individual decisionmaking is not purely self-regarding—where others will bear the negative externalities of incompetently made decisions—the state is not only justified, but obligated, to withhold or delay the unfettered right to exercise a certain liberty.

V. CONCLUSION

The immature regulatory competence of adolescents confounds the execution of their still-nascent driving skills in real-world

³⁷² See generally McCartt et al., *supra* note 307.

³⁷³ Zernike, *supra* note 371.

³⁷⁴ *Trautmann*, 48 A.3d at 1007. Affirming and adopting the legal reasoning of the Appellate Division, the New Jersey Supreme Court held that (1) the N.J. statute neither contravened nor was preempted by the Federal Driver's Privacy Protection Act, since displaying the decals did not constitute disclosure of the sort of "highly restricted personal information" protected by the Act; (2) the statute was rationally related to the legitimate interest of the New Jersey licensing system, which governs only drivers licensed by the state, and thus violates neither the state nor federal equal protection clauses; and (3) while a decal affixed to the exterior of a car might be plainly observable by law enforcement, such observation, without more, does not constitute a search. Any detention of a car bearing a decal by a law enforcement officer, moreover, must comport with the same constitutional requirements governing stops of other vehicles. *Id.* at 1007–09.

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 increased maturity 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 should safely begin in mid-adolescence (ages fourteen to sixteen). 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 requires raising the age of licensure, ideally to eighteen.