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PANEL IV: EDUCATION

RIGHTS AND WRONGS IN THE DEBATE OVER SINGLE-SEX SCHOOLING

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INTRODUCTION	971
I. LOOKING BACK	973
A. <i>A Dubious History</i>	973
B. <i>Brain Research Overtakes the Course</i>	980
C. <i>The Opposition Mobilizes</i>	983
II. DECONSTRUCTING “THE PSEUDOSCIENCE OF SINGLE-SEX SCHOOLING”	988
A. <i>Debunking Brain Research</i>	989
B. <i>The Inconclusivity Conundrum</i>	992
C. <i>Do Single-Sex Programs Harm Students?</i>	995
D. <i>Recent Findings from Abroad</i>	998
III. CONTEXT MATTERS	1003
A. <i>Single-Sex Classes vs. Schools</i>	1004
B. <i>Race, Ethnicity, and Social Class</i>	1007
C. <i>Thinking Globally</i>	1013
IV. MOVING FORWARD	1024
CONCLUSION.....	1027

INTRODUCTION

In September 2011 an article entitled *The Pseudoscience of Single-Sex Schooling* appeared in the journal *Science*.¹ Unlike articles typically published in peer-reviewed journals, the primary intent in this case was not to inform the scholarly community but rather to accomplish larger political and legal ends. Co-authored by eight prominent psychologists and neuroscientists, it immediately made the front pages of national newspapers and soon took the international media by storm. From the United Kingdom to Australia, New

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¹ Diane F. Halpern et al., *The Pseudoscience of Single-Sex Schooling*, 333 SCIENCE 1706, 1706-07 (2011).

Zealand, India, and South Africa, it gave rise to a global debate about the pros and cons of single-sex schooling.²

As directly intended, the article has since given “scientific” legitimacy to a broad-scale attack spearheaded by the American Civil Liberties Union (ACLU), with ongoing support from an organization formed by the article’s authors to promote coeducation. The “immediate” targets of that attack are certain coeducational public schools that now offer separate classes for girls and boys in core subjects.³ The ACLU maintains that these programs are following practices grounded in disputed theories claiming hard-wired differences between the sexes.⁴ The “ultimate” targets are the very concept of single-sex schooling and the federal regulatory amendments that have permitted the approach to gain hold.

In a series of court challenges and cease-and-desist letters sent to school districts, the ACLU has charged not only that specific policies and classroom practices violate Title IX⁵ and the Fourteenth Amendment to the U.S. Constitution, but also that the revised Title IX regulations issued by the U.S. Department of Education in 2006⁶ are themselves unsound as a matter of law and policy. Most significantly, those revised regulations expressly afford school districts flexibility in creating separate classes in coed schools. Tangled up in the ACLU’s claims and the consequent litigation are two landmark decisions of the U.S. Supreme Court: *Brown v. Board of Education*,⁷ the 1954 decision striking down racially segregated public schools, and *United States v. Virginia*,⁸ the 1996 ruling declaring unconstitutional the exclusion of women from the state-supported Virginia Military Institute. The arguments advanced in the *Science* article and ACLU documents and press releases are now shaping

² Nick Collins, *Children at Single-Sex Schools ‘More Likely to be Sexist,’* TELEGRAPH (Sept. 22, 2011, 7:01 PM), <http://www.telegraph.co.uk/education/educationnews/8781907/Children-at-single-sex-schools-more-likely-to-be-sexist.html>; see also Andrew Stevenson & Jen Rosenberg, *Forget the Gender Consensus on Single-Sex Education*, AGE, Sept. 23, 2011, at 5; Retha Grobbelaar, *Single-Sex School Report Dissed*, TIMES LIVE (Nov. 24, 2011, 11:57 PM), <http://www.timeslive.co.za/local/2011/11/24/single-sex-school-report-dissed>; *Sex Segregation in Schools Detrimental to Equality*, SCI. DAILY (Sept. 22, 2011), <http://www.sciencedaily.com/releases/2011/09/110922141910.htm>; Stacey Wood & Kerry McBride, *Single-Sex Schools Rate Poorly in Study*, STUFF (Sept. 23, 2011), <http://www.stuff.co.nz/national/education/5670792/Single-sex-schools-rate-poorly-in-study>.

³ Halpern et al., *supra* note 1, at 1707.

⁴ *Teach Kids, Not Stereotypes*, ACLU (Mar. 28, 2013), <http://www.aclu.org/womens-rights/teach-kids-not-stereotypes>.

⁵ Title IX of the Education Amendments of 1972, 20 U.S.C. §§ 1681-1688 (2012).

⁶ Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance, 71 Fed. Reg. 62,530 (Oct. 25, 2006) (to be codified at 34 C.F.R. pt. 106).

⁷ 347 U.S. 483 (1954).

⁸ 518 U.S. 515 (1996).

the debate on single-sex schooling across the globe, with serious implications for education policy, especially in the United States.

This Article uses the ACLU challenges, together with the *Science* article, as a framework for examining the forces and motives that initially inspired and continue to derail the current revival of single-sex programs; the rights and wrongs that animate the ongoing controversy; and the measures needed to set the discussion on a track that is ideologically neutral, legally and empirically sound, and globally relevant. In the process, it analyzes a sample of studies commonly invoked by opponents, as well as other findings refuting those arguments, and weighs the cultural, political, and economic factors that may affect outcomes among different student populations, both in the United States and abroad. Overall, it presents a nuanced argument that denounces hard-wired biological justifications for separating students by sex while offering social rationales and research evidence supporting the benefits that some students gain from evenhandedly designed programs that comply with the law. In the end, it offers a transnational perspective that underscores the many complexities underlying claims about the “end of men” and the “rise of women.”⁹

I. LOOKING BACK

Single-sex schooling evokes passionate responses among individuals and groups. All claim to promote the best interests of students, both girls and boys. To fully comprehend the rancor the controversy has generated, as well as the complex legal and policy questions raised, it is helpful to look back over the past forty years of the struggle to achieve equal educational opportunity and gender equity.

A. *A Dubious History*

In the United States, coeducation historically has been the norm among public schools, particularly in the elementary grades. The initial rationale for coeducation was pragmatic rather than based in any grand pedagogical or psychological theories of social arrangement. It was simply cost-effective to educate students together. The approach gradually gained ground on the secondary level where by 1900 ninety-eight percent of the public high schools nationwide were coeducational. At that time, out of 628 cities reporting, only twelve operated any single-sex schools.¹⁰ Girls far outnumbered and outperformed boys, leading educators to fret over the vexing “boy problem,” most evident among the working class.¹¹

⁹ HANNA ROSIN, *THE END OF MEN: AND THE RISE OF WOMEN* (2012).

¹⁰ DAVID TYACK & ELISABETH HANSOT, *LEARNING TOGETHER: A HISTORY OF COEDUCATION IN AMERICAN PUBLIC SCHOOLS* 114 (1990).

¹¹ *Id.* at 170-71.

Until the 1970s, with rare exceptions, the few single-sex public schools that existed were primarily in large cities. These were either academically selective schools, such as Boston Latin for boys and the Philadelphia High School for Girls, or vocational schools, like New York City's Girls' Commercial High School and the once all-male Aviation High School. The vocational schools, established in the early 1900s, largely served the children of immigrants, blacks, Mexican Americans, and others considered intellectually unsuited to academic pursuits. They offered a highly gendered curriculum, tracking male students into fields like drafting, woodworking, and auto mechanics, and females into lower-paying careers like dressmaking and secretarial work. At the other end of the socioeconomic spectrum, the early private colleges and universities also remained segregated by sex. The most elite among them, including Harvard, Yale, and Princeton, admitted only men. Regardless of sector or level, with few exceptions, the education offered to females in separate schools was not as academically rigorous or as well funded as the education offered to males.¹²

The modern-day women's movement, taking its cue from civil rights activists, fought to reverse these inequities. In the 1970s world of "liberal feminism," typified in the work of the National Organization for Women (NOW) and the ACLU Women's Rights Project, women were considered "the same as," and therefore "equal to," men on all academic and professional measures. A key figure in developing that position was then-law professor and co-founder of the Women's Rights Project, Ruth Bader Ginsburg, who later spoke for a majority of Supreme Court Justices in *United States v. Virginia*. Within that frame of thought, single-sex education was viewed as inherently unequal and so the demand dramatically dropped. Some private single-sex schools and colleges opened their doors to members of the other sex. Other schools merged. A small number, many in the more-traditional South, held on resolutely to the single-sex ideal.

In the public sector separate schools either shut down or admitted both sexes under the prevailing interpretation of Title IX, the federal law adopted in 1972 that prohibits sex discrimination in education programs or activities that receive federal funds. School districts that failed to comply ran the risk of losing federal monies primarily aimed at addressing the needs of children living in high-poverty areas.¹³ Unsurprisingly, by the early 1980s single-sex schooling was widely considered anachronistic at best and highly discriminatory at worst. American feminists in particular pushed for greater equality within coeducation, in stark contrast to radical feminists in Great

¹² ROSEMARY C. SALOMONE, *SAME, DIFFERENT, EQUAL: RETHINKING SINGLE-SEX SCHOOLING* 66-70 (2003); see also TYACK & HANSOT, *supra* note 10.

¹³ Title I of the Elementary and Secondary Education Act of 1965, 20 U.S.C. §§ 6301-6578 (2012).

Britain who renounced coeducation as an instrument for reproducing male patriarchy and dominance.¹⁴

Events in Philadelphia and later in Detroit placed a legal imprimatur on the American view. In the case of Philadelphia, though an equally divided Supreme Court affirmed a lower court ruling upholding the highly resourced all-boys' Central High School,¹⁵ a state court later it struck down.¹⁶ Basing its decision on both the state and federal constitutions, the state court found that Central and its female counterpart, Girls' High School, were "materially unequal" in a concrete and measureable way and ordered that Central admit females.¹⁷ Girls' High School remained single-sex.

The Detroit case centered on a 1991 city board of education resolution to open three all-male academies designed to combat high homicide, unemployment, and dropout rates among African American males.¹⁸ The proposal unleashed a local firestorm over race and gender that reverberated nationwide. On one side stood attorneys for the ACLU, NOW, and the NAACP and its Legal Defense and Educational Fund. On the other side stood local school officials, the Detroit Urban League, and the Detroit NAACP chapter, whose executive director best captured the thinking behind the proposal. As she explained to the press, all-male schools were "a level of redress and response to discrimination."¹⁹

A federal district court judge granted the plaintiff's motion for a preliminary injunction against the schools' opening. From the judge's view, there was no evidence that the system was failing males because of the presence of females; in fact, it was failing both sexes.²⁰ The school district decided not to pursue a decision on the merits and agreed to admit girls. Nonetheless, the case had unanticipated significance. The troubling data on race and gender, gathered by both sides, underscored how public schooling was not closing the racial achievement gap for either sex. And so, despite the immediate outcome, the lawsuit set the wheels in motion for a new vision of separate schooling that initially would inspire programs for inner-city minority girls around which scholarly and political support was beginning to take shape.

¹⁴ Elizabeth Sarah et al., *The Education of Feminists: The Case for Single-Sex Schools*, in *LEARNING TO LOSE: SEXISM AND EDUCATION* 55-66 (Dale Spender & Elizabeth Sarah eds., 1980).

¹⁵ *Vorchheimer v. Sch. Dist.*, 532 F.2d 880 (3d Cir. 1976), *aff'd by an equally divided court*, 430 U.S. 703 (1977).

¹⁶ *Newberg v. Bd. of Pub. Educ.*, 26 Pa. D. & C.3d 682, 711 (1983).

¹⁷ *Id.*

¹⁸ *See* DETROIT PUB. SCHS., MALE ACADEMY GRADES K-8: A DEMONSTRATION PROGRAM FOR AT-RISK MALES 3-4 (1991).

¹⁹ Ron Russell, *Legal Arm of NAACP Threatens to Join Lawsuit Blocking All-Male Schools*, DETROIT NEWS, Aug. 21, 1991, at 1A (quoting JoAnn Nichols Watson).

²⁰ *Garrett v. Bd. of Educ.*, 775 F. Supp. 1004, 1007 (1991); *see also* SALOMONE, *supra* note 12, at 121-39 (discussing the Philadelphia and Detroit litigation).

At the same time that separate schools were disappearing from the education landscape, the notion of gender equality as “same treatment” came under attack within the feminist community itself. Critics argued that liberal feminism could not account for real differences between the sexes and the particular life experiences that gave women and men different moral and psychological perspectives. Carol Gilligan’s groundbreaking 1984 book, *In a Different Voice*,²¹ energized the sameness-difference debate. Best known for laying the theoretical base for her later research on adolescent girls, the book unintentionally gave credence to arguments supporting same-sex schooling for girls. In the 1990s several other publications reaffirmed the idea that American schools, overwhelmingly coed, were “shortchanging” girls. Girls lost their self-esteem, we were told, as they approached adolescence. Boys dominated classroom discussion and outperformed girls, especially in math and science. Two reports issued by the American Association of University Women²² fueled the debate. Several books published that same year, including *Failing at Fairness*²³ by Myra and David Sadker and Mary Pipher’s *Reviving Ophelia*,²⁴ have since become classics in gender studies.

The ground shifted as the millennium approached. A wave of popular books by respected psychologists similarly sounded the alarm that boys were not faring as well academically and emotionally as commonly believed.²⁵ They challenged the implications of both the “deficit” and the “girls-as-victims/boys-as-villains” arguments. In doing so they raised the possibility that perhaps coed schools were not the pernicious “bastions of male privilege” that the gender equity project had assumed. Some commentators rejected as dangerously wrong the myth that schools were denying girls their due. They argued that such claims diverted attention from African American boys and their profound educational and social deficits.²⁶

A consensus began to build that perhaps schools were “shortchanging” girls and boys in both the same and different ways. The question was how to identify the causes and how best to remedy the problem. The idea took hold that perhaps separating students by sex might effectively enhance the academic

²¹ CAROL GILLIGAN, *IN A DIFFERENT VOICE: PSYCHOLOGICAL THEORY AND WOMEN’S DEVELOPMENT* (1982).

²² AM. ASS’N OF UNIV. WOMEN, *HOW SCHOOLS SHORTCHANGE GIRLS* (1992); AM. ASS’N OF UNIV. WOMEN, *SHORTCHANGING GIRLS, SHORTCHANGING AMERICA* (1994).

²³ MYRA SADKER & DAVID SADKER, *FAILING AT FAIRNESS: HOW AMERICA’S SCHOOLS CHEAT GIRLS* (1995).

²⁴ MARY PIPHER, *REVIVING OPHELIA: SAVING THE SELVES OF ADOLESCENT GIRLS* (1994).

²⁵ See, e.g., DAN KINDLON & MICHAEL THOMPSON, *RAISING CAIN: PROTECTING THE EMOTIONAL LIFE OF BOYS* (1999); WILLIAM POLLACK, *REAL BOYS: RESCUING OUR SONS FROM THE MYTHS OF BOYHOOD* (1998).

²⁶ See JUDITH KLEINFELD, *THE MYTH THAT SCHOOLS SHORTCHANGE GIRLS: SOCIAL SCIENCE IN THE SERVICE OF DECEPTION* (1998), available at <http://education.nmsu.edu/ci/mo/rehead/documents/the-myth-that-schools-shortchange-girls.pdf>.

environment and address the particular needs of each group. As in the case of Detroit, the approach appeared particularly promising in the inner city, where schools were struggling against teenage parenting, single-parent families, drug abuse, and all the social pathologies and despair that come with poverty. Meanwhile, schooling was becoming more demanding and competitive, with accountability as the education mantra and student performance on standardized tests as the measure of success for students, teachers, and schools alike.²⁷ Educators began searching for innovative ways to both meet those demands and close the minority achievement gap.

Meanwhile, a movement promoting state-supported alternatives to conventional public schools was gaining momentum nationwide. Some policymakers, educators, and scholars viewed “school choice” through the lens of the free market. They argued that the competition generated would improve all schools.²⁸ Others saw choice as a matter of equity, to give poor families the same options long available to the rich and the middle class.²⁹ With the forces of gender equality and choice oddly coalescing, by the late 1990s single-sex schooling experienced an unforeseeable renaissance that defied and transcended political labels.

A pivotal moment came in 1996. In July of that year, New York City took a bold step. The city’s Board of Education announced that, with the vision and support of a wealthy benefactor, it planned to open an all-girls’ public school, the Young Women’s Leadership School. The setting was East Harlem, one of the city’s poorest neighborhoods. Focusing on math, science, and leadership skills, the school soon achieved remarkable success, sending close to 100% of its graduates each year to college.³⁰ The opening of that school and the model it created pulled single-sex schooling out of the dustbin of history and set in motion legal reforms and a movement that spread far beyond local and even national borders.

A number of women’s advocates, many of them alumnae of girls’ schools and women’s colleges, hailed the effort to offer in the public sector educational benefits long available and valued within private institutions.³¹ Yet despite its message and mission of empowerment, the New York school immediately

²⁷ See Rosemary C. Salomone, *The Common School Before and After Brown: Democracy, Equality, and the Productivity Agenda*, 120 *YALE L.J.* 1454, 1474-76 (2011) (reviewing MARTHA MINOW, IN *BROWN’S WAKE: LEGACIES OF AMERICA’S EDUCATIONAL LANDMARK* (2010)).

²⁸ See, e.g., JOHN E. CHUBB & TERRY M. MOE, *POLITICS, MARKETS, AND AMERICA’S SCHOOLS* 219-21 (1990).

²⁹ See, e.g., JOSEPH P. VITERITTI, *CHOOSING EQUALITY: SCHOOL CHOICE, THE CONSTITUTION, AND CIVIL SOCIETY* 209-24 (1999).

³⁰ E-mail from Kathleen Ponze, Director of New Initiatives, Young Women’s Leadership Network, to Rosemary Salomone, Professor of Law, St. John’s University School of Law (Apr. 29, 2013).

³¹ See Rosemary C. Salomone, *Feminist Voices in the Debate over Single-Sex Schooling: Finding Common Ground*, 11 *MICH. J. GENDER & L.* 63, 79-81 (2004).

drew the ire of civil liberties and organized women's group leaders who rejected the school as radically retrograde. The New York Civil Liberties Union, the New York Civil Liberties Coalition, and the New York chapter of NOW unsuccessfully pressed to prevent the school from opening. They argued that separate schools are inherently unequal and violate the Supreme Court's 1954 ruling in *Brown v. Board of Education* outlawing racially segregated schools;³² that "separate" is a euphemism for "worse"; and that single-sex schools perpetuate harmful stereotypes, especially stigmatize girls, and fail to prepare students for the real world.

More immediately, they relied on a Supreme Court decision rendered just weeks before the New York City Board of Education announced plans to open the East Harlem school. In *United States v. Virginia*,³³ the Court struck down the all-male admissions policy of the state-supported Virginia Military Institute on the ground that it violated equal protection of the law under the Fourteenth Amendment.³⁴ The Court made clear that government officials may draw classifications based on sex only where the resulting policy or program promotes an "important governmental objective" with a justification that is "exceedingly persuasive"; that the "burden of justification is demanding"; and that it "rests entirely on the State."³⁵ The Court warned that state actors must not rely on "overbroad generalizations" that might "perpetuate historical patterns of discrimination."³⁶

But the Court was careful not to dismiss all single-sex schooling. "We do not question [Virginia's] prerogative evenhandedly to support diverse educational opportunities," the Court noted.³⁷ And while the Court stated that sex classifications may not be used to "denigrat[e] . . . the members of either sex or for artificial constraints on an individual's opportunity," they are permissible when they "advance full development of the talent and capacities of our Nation's people."³⁸ The Court further acknowledged that some single-sex programs may specifically intend to overcome gender inequities – "to dissipate, rather than perpetuate, traditional gender classifications."³⁹ The courts have yet to resolve the practical scope of those parameters.⁴⁰ As Cass

³² *Brown v. Bd. of Educ.*, 347 U.S. 483, 495 (1954) ("Separate educational facilities are inherently unequal.").

³³ 518 U.S. 515 (1996).

³⁴ *Id.* at 548; *see also* U.S. CONST. amend. XIV.

³⁵ *Virginia*, 518 U.S. at 532-33.

³⁶ *Id.* at 542 (internal quotation marks omitted).

³⁷ *Id.* at 534 n.7.

³⁸ *Id.* at 533.

³⁹ *Id.* at 595 n.7 (citation omitted).

⁴⁰ For three views supporting the constitutionality of public single-sex schools, see Michael Heise, *Are Single-Sex Schools Inherently Unequal?*, 102 MICH. L. REV. 1219 (2004) (finding single-sex schools are constitutional based on formal equality); Kimberly J. Jenkins, *Constitutional Lessons for the Next Generation of Public Single-Sex Elementary*

Sunstein later observed, the problem was not that Virginia had recognized a difference between men and women, but that it effectively had “turned that difference into a disadvantage.”⁴¹

The legislative implications of the Court’s broad rationale eventually found their way into Congress. In January 2002 Congress enacted the No Child Left Behind Act, a signature measure of the Bush Administration.⁴² A provision in the Act – co-sponsored by then Senators Hillary Clinton and Kay Bailey Hutchinson, and explicitly endorsed by the late Senator Edward Kennedy – allowed federal funds for single-sex programs “consistent with applicable law.”⁴³ That precise condition put the onus on the U.S. Department of Education to revise the Title IX regulations, initially adopted in 1975, which prohibited separate-sex classes outside a very limited set of circumstances.⁴⁴ In May 2002 the Department of Education’s Office for Civil Rights (OCR) published a notice of intent⁴⁵ to revise the Title IX regulations governing single-sex programs and invited the public to comment on a series of legal questions.⁴⁶ The announcement elicited strong opposition from civil liberties and organized women’s groups.⁴⁷

More than four years later, in October 2006, OCR issued final regulations that permit non-vocational elementary and secondary schools to establish single-sex classes so long as they are voluntary, provide a “substantially equal”

and Secondary Schools, 47 WM. & MARY L. REV. 1953 (2006) (suggesting differential standards for assessing the substantial relationship prong of equal protection depending upon whether the school provides voluntary attendance and substantially equal opportunities for both sexes or fails on either or both of these counts); and Denise C. Morgan, *Anti-Subordination Analysis After United States v. Virginia: Evaluating the Constitutionality of K-12 Single-Sex Public Schools*, 1999 U. CHI. LEGAL F. 381 (finding single-sex schools are constitutional based on anti-subordination theory). *But see* Nancy Levit, *Embracing Segregation: The Jurisprudence of Choice and Diversity in Race and Sex Separatism in Schools*, 2005 U. ILL. L. REV. 455, 512 (arguing that any “official endorsement of segregation based on identity characteristics [including sex] creates inequality”).

⁴¹ CASS R. SUNSTEIN, *ONE CASE AT A TIME: JUDICIAL MINIMALISM ON THE SUPREME COURT* 165 (1999).

⁴² See No Child Left Behind Act of 2001 § 5131, 20 U.S.C. § 7215(a)(23) (2012).

⁴³ *Id.* (“Funds made available to local educational agencies under section 7211a of this title shall be used for innovative assistance programs, which may include any of the following: . . . Programs to provide same-gender schools and classrooms (consistent with applicable law).”).

⁴⁴ 34 C.F.R. § 106.41 (1975).

⁴⁵ Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance, 67 Fed. Reg. 31,098 (May 8, 2002).

⁴⁶ *Id.*

⁴⁷ See *Comments of the National Organization for Women on the Department of Education’s Notice of Intent to Regulate on Single-Sex Education*, NAT’L ORG. FOR WOMEN, <http://www.now.org/issues/education/single-sex-education-comments.html> (last visited Mar. 28, 2013).

coeducational alternative, and are based on either a “diversity” or an “educational needs” rationale.⁴⁸ The original 1975 regulations had used a “comparability” requirement whereby a school district could not exclude any student from admission to a program unless it offered “courses, services, and facilities” that were “comparable.”⁴⁹ They also had contained a “compensatory” rationale whereby school districts could take “affirmative action to overcome the effects of conditions which limited participation . . . by persons of a particular sex.”⁵⁰

OCR drafted the revisions against the backdrop of the Court’s decision in *United States v. Virginia* to insulate from constitutional attack both the new regulations and school district programs that relied on them. Nonetheless, with aspects of the constitutional standard still judicially unresolved, several questions continue to percolate beneath legal challenges to the regulations. How much rigor does the Court’s “exceedingly persuasive justification” and “hard look” review infuse into the regulations’ educational need and diversity rationales? Must the evidence of need be school specific or based on district-wide, regional, or national data? Does the diversity rationale hold constitutional weight on its own? Beyond the regulations, the most contentious and fact-specific issues are whether particular educational practices promote “overbroad generalizations” or simply reflect real differences between the sexes, and whether those differences are biologically or socially constructed.

B. *Brain Research Overtakes the Course*

As school districts moved cautiously in anticipation of the revised regulations, new voices weighed in on the advantages of single-sex schooling. Promoting hard-wired differences to justify separating students by sex, they defied the basic precept of “liberal feminism” that women and men are essentially the same. At the same time, they carried “difference feminism” to an extreme of neurological certainty that its original proponents never envisioned. They captured the discussion and took it down a perilous path. To any observer cognizant of the law, they were inviting litigation.

For many of us who supported New York City’s all-girls’ school and the subsequent regulatory amendments, this turn of events was indeed disconcerting. Our vision was to create an academic culture in which girls’ self-esteem would be tied to academic achievement. It would offer specifically “at-risk” students the knowledge, skills, and attitudes to overcome the hardships that lay in their way. We hoped that similar all-male schools would open and do the same for inner-city minority boys. We made no claims as to whether any observable differences in behavior between boys and girls were

⁴⁸ Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance, 71 Fed. Reg. 62,530 (Oct. 25, 2006) (to be codified at 34 C.F.R. pt. 106).

⁴⁹ 34 C.F.R. § 106.35 (1980).

⁵⁰ *Id.* § 106.3(b).

due to biological rather than social factors. We imagined this new crop of programs growing slowly and organically as educators developed a set of “best practices” through experience with different populations of students. It was a cautious approach, taking one small step at a time to remedy a problem that had proved intractable despite decades of federal programs targeting the economically and educationally disadvantaged. We could not foresee how a convergence of factors, including ambivalence among federal officials, misguided judgment among local school administrators, and persistence among brain research “purveyors,” would derail the course and create a setting ripe for an organized assault on single-sex schooling.

On the federal front, the revised Title IX regulations gave schools flexibility but offered local school officials no guidance on curriculum or classroom strategies. Neither Congress nor the Department of Education provided technical support or adequate and targeted funds for program planning, staff development, or monitoring despite evidence that those same deficiencies had contributed to the failure of a similar California initiative in the late 1990s.⁵¹ Proponents of brain-research rationales quickly filled the void. They maintained that boys and girls learn so differently that they should be educated separately. This “movement” was largely led not by educators, but by individuals outside the education system. They drew an overstated and unproven connection between small sex differences in brain maturation on the one hand, and specific learning styles and teaching methods on the other.

Some school officials, particularly in southern states with more traditional values, found the argument deceptively appealing. Many saw sex separation as a possible solution to the “boy problem” while also addressing the continuing “girl problem.” Looking for a “silver bullet” to meet “annual yearly progress” mandates for schools under the No Child Left Behind Act, they believed that separate learning environments might improve reading test scores (and classroom behavior) among boys, and math and science scores among girls.⁵² The purportedly “scientific” basis offered school board members and parents a plausible justification for a dramatic departure from conventional schooling. But rather than establish separate, freestanding schools (which would have been costly, administratively burdensome, politically sensitive, and slow on implementation), a number of school districts separated girls and boys for certain core subjects within existing coed schools.⁵³

⁵¹ Lea Hubbard & Amanda Datnow, *Are Single-Sex Schools Sustainable in the Public Sector?*, in *GENDER IN POLICY AND PRACTICE: PERSPECTIVES ON SINGLE-SEX AND COEDUCATIONAL SCHOOLING* 109, 118 (Amanda Datnow & Lea Hubbard eds., 2002).

⁵² Michele McNeil, *Single-Sex Schooling Gets New Showcase*, *EDUC. WK.* (May 6, 2008), http://www.edweek.org/ew/articles/2008/05/07/36singlegender_ep.h27.html (subscription required) (discussing the spread of single-sex classes in ninety-seven South Carolina public schools following 2006 revisions in Title IX regulations).

⁵³ *See, e.g., id.*

Many of these early programs opened with little planning, public participation, or clearly articulated mission. School officials had scant understanding of why they were separating students by sex or what curricular or other strategic accommodations, if any, were in order. Nor did they fully comprehend the legal requirements outlined in the revised Title IX regulations. Unlike single-sex schools, which benefited from the experience in New York, single-sex classes were sailing on uncharted waters, at least in modern-day experience in the United States. Even the private-school sector had little to offer on this count.

Local and national media soon baited the public with eye-opening stories of classrooms painted different colors or maintained at different temperatures depending on the sex of the students; teachers advised to shout at boys, but speak softly and smile at girls; girls being taught “good character” while boys were taught “heroic behavior”; girls starting the day with classical music and reading, boys with physical exercise; and girls sitting on carpeted areas to discuss their feelings because their higher oxytocin levels created a greater need to bond while boys were allowed to move around more because of lower levels of serotonin in their brains. South Carolina’s website on “Single-Gender Initiatives” suggested teaching math to boys with “competitive games using technology” but using “musical math chairs” to educate girls. For boys’ advisory period the focus was “ball toss” and “quality of a man”; for girls it was “friendship qualities.”⁵⁴

The ACLU’s Women’s Rights Project now presents a mind-boggling list of similar practices that would make most reasonable people wince.⁵⁵ The ACLU cites two books commonly used as guides in single-sex classrooms.⁵⁶ The first is *Why Gender Matters*⁵⁷ by Leonard Sax, a physician and psychologist, and founder and executive director of the National Association for Single Sex Public Education. The second is *The Boys and Girls Learn Differently Action Guide for Teachers*,⁵⁸ co-authored by Michael Gurian, a social philosopher, counselor, prolific author, and president of the Gurian Institute, an organization that runs a summer institute for teachers. Both Sax and Gurian now travel nationally and internationally consulting with school officials who put their theories into operation. Sax argued that boys do better under stress while girls

⁵⁴ S.C. DEP’T OF EDUC., LESSON PLAN FOR GIRLS, LESSON PLAN FOR BOYS (2008) (on file with author).

⁵⁵ ACLU, BOYS’ BRAINS VS. GIRLS’ BRAINS: WHAT SEX SEGREGATION TEACHES STUDENTS (2008), available at http://www.aclu.org/files/pdfs/womensrights/boysbrains_v_girlsbrains.pdf.

⁵⁶ *Id.*

⁵⁷ LEONARD SAX, WHY GENDER MATTERS: WHAT PARENTS AND TEACHERS NEED TO KNOW ABOUT THE EMERGING SCIENCE OF SEX DIFFERENCES (2005).

⁵⁸ MICHAEL GURIAN & ARLETTE C. BALLEW, THE BOYS AND GIRLS LEARN DIFFERENTLY ACTION GUIDE FOR TEACHERS (2003).

do not and therefore girls should not be given timed tests;⁵⁹ that boys should be strictly disciplined by asserting power over them while girls should be disciplined by appealing to empathy;⁶⁰ and that girls should take their shoes off in class as it helps them to relax and think better.⁶¹ Gurian counseled that boys are better than girls in math because boys' bodies receive daily surges of testosterone;⁶² that boys are abstract thinkers and are thus naturally good at philosophy and engineering, while girls are concrete thinkers and perform better in math and science if given objects like beans or buttons they can touch;⁶³ and that boys should be given Nerf baseball bats to hit things so they can release tension during class.⁶⁴

It appeared that nature had totally eclipsed nurture in child development. Biology was destiny. Pity the many girls and boys who did not fit into the sex-defined straight jacket. The "neuroscience of pedagogy" was spinning out of control. And it defied what the best of single-sex schooling, and especially the growing number of separate schools, represented. Unsurprisingly, it created the momentum for an organized assault on single-sex programs and the documented evidence for direct legal challenges that stretch beyond these disquieting facts.

C. *The Opposition Mobilizes*

Against this course of events the ACLU began testing the waters of judicial and administrative action. The success of the group's efforts has been mixed. In 2010 a federal district court in Louisiana found that the program established by the Vermillion Parish school district suffered from an "extreme lack of [district] oversight," as well as "significant flaws" in the underlying research data.⁶⁵ Yet despite those findings, citing the "best interests" of the students, the court refused to grant a temporary restraining order as the school officials had not "intended to discriminate against any child."⁶⁶ At the same time the court ordered the district in the coming school year to follow a ten-step plan, assuring that the program was "completely voluntary" and that it offered a "substantially equal co-ed opportunity to every student."⁶⁷ The Fifth Circuit disagreed with the trial court's interpretation of the law, maintaining that government classifications "explicitly based on sex" violate the Equal

⁵⁹ SAX, *supra* note 57, at 88-92.

⁶⁰ *Id.* at 179-83, 188.

⁶¹ *Id.* at 91.

⁶² GURIAN & BALLEW, *supra* note 58, at 100.

⁶³ *Id.* at 17, 90-92.

⁶⁴ *Id.* at 75.

⁶⁵ *Doe ex rel. Doe v. Vermillion Parish Sch. Bd.*, No. 09-cv-1565, at *5-6 (W.D. La. Apr. 19, 2010).

⁶⁶ *Id.*

⁶⁷ *Id.* at *6.

Protection Clause even when there is no evidence of discriminatory intent.⁶⁸ Presumably, what the court meant was that even where there is no evidence of intent to harm students, courts will nonetheless carefully scrutinize sex classifications drawn for benign or remedial purposes. The Fifth Circuit remanded the case to the district court. The dispute ultimately ended in a consent decree whereby school officials agreed not to initiate separate programs in any of the district's nineteen schools through the 2016-2017 school year.⁶⁹

The agreement was heartening to the ACLU and its supporters. Yet the fact-specific basis proved it was a unique victory. In June 2011 a federal district court in Kentucky found otherwise when presented with a starkly different set of facts.⁷⁰ The court dismissed the case on standing grounds as to the class-representative plaintiffs who failed to demonstrate they had suffered any concrete and particularized injury from the single-sex program.⁷¹ As for the individual plaintiffs' claims for monetary relief, the court granted summary judgment for the school district.⁷² The court went to great lengths to distinguish the facts from those in the Louisiana litigation, finding no evidence in the record that the single-sex offerings resulted in "substandard coed education."⁷³ More sweepingly and significantly, the court noted that the "Supreme Court has never held that separating students by sex in a public school – unlike separating students by race – or offering a single-sex public institution is *per se* unconstitutional."⁷⁴

Despite this seeming setback, the ACLU continued to pursue its course in other judicial and administrative venues. It successfully pressured Pittsburgh school officials to drop a single-sex high school, threatening to file a Title IX complaint with the U.S. Department of Education if the program continued.⁷⁵ It weighed upon the Madison, Wisconsin, school board to deny approval to a charter school that planned to offer the International Baccalaureate program with separate classes for girls and boys.⁷⁶ It requested public records from

⁶⁸ *Doe ex rel. Doe v. Vermillion Parish Sch. Bd.*, 421 F. App'x 366, 372 (5th Cir. 2011).

⁶⁹ Consent Decree, *Doe*, No. 09-cv-1565 (Oct. 13, 2011).

⁷⁰ *A.N.A. ex rel. S.F.A. v. Breckinridge Cnty. Bd. of Educ.*, 833 F. Supp. 2d 673 (W.D. Ky. 2011).

⁷¹ *Id.* at 680-81.

⁷² *Id.* at 682-83.

⁷³ *Id.* at 680.

⁷⁴ *Id.* at 678 (citing *United States v. Virginia*, 518 U.S. 515, 553 n.7 (1996); *Miss. Univ. for Women v. Hogan*, 458 U.S. 718, 720 (1982); *Vorcheimer v. Sch. Dist.*, 532 F.2d 880, 888 (3d Cir. 1976), *aff'd by an equally divided court*, 430 U.S. 703).

⁷⁵ Jason McLure, *U.S. Schools with Single-Sex Classrooms May Face ACLU Lawsuit*, REUTERS, May 22, 2012, available at <http://www.reuters.com/article/2012/05/23/us-usa-acl-u-classroom-idUSBRE84M01020120523>.

⁷⁶ Letter from Chris Ahmuty, Exec. Dir., ACLU of Wis., to Daniel Nerad et al., Madison Metro. Sch. Dist. (Dec. 15, 2010), available at http://www.aclu.org/files/assets/single_sex_s

school districts in Alabama, Florida, North Carolina, South Carolina, Virginia, and Wisconsin with the intent of initiating legal action.⁷⁷

In May 2012, armed with the “scientific” support of the *Science* article, the ACLU launched the “Teach Kids, Not Stereotypes” initiative. In a high profile press release, the organization announced that ACLU offices in Alabama, Maine, Mississippi, Virginia, and West Virginia were sending cease-and-desist letters to school districts believed to be violating federal and state law.⁷⁸ These districts, the ACLU charged, were “forcing students into a single-sex environment, relying on harmful gender stereotypes and depriving students of equal educational opportunities.”⁷⁹ In some cases, it observed, students who decided not to participate in single-sex classes had no choice but to enroll in another school.⁸⁰ Some school districts had not informed parents and guardians that they had the option to opt out of the classes. Some had offered classes to one sex and not the other.⁸¹

In a number of programs, the sex stereotyping described was palpable: teachers using microphones to pitch their voices at a level thought appropriate for boys; boys taking a run and girls doing calming exercises like yoga to prepare for a test; blue chalkboards in boys’ classrooms; and bulletin boards covered in red paper hearts for the girls.⁸² A subsequent ACLU report prepared for the OCR laid out in detail these and other practices identified from news reports and documents submitted by school officials.⁸³ “If such programs [were] not ended,” the May 2012 statement warned, the ACLU would “pursu[e] further legal action.”⁸⁴ The following month the Feminist Majority Foundation, based on a state-by-state assessment, joined the ACLU’s position advocating that the Department of Education rescind the 2006 Title IX regulatory revisions and return to the original 1975 regulations permitting “sex

chool.pdf.

⁷⁷ *ACLU of Virginia Wants Schools to Refrain from Reinstating Single-Sex Programs Rooted in Stereotypes*, ACLU VA. (May 21, 2012, 9:14 AM), <https://acluva.org/10124/aclu-of-virginia-asks-schools-to-cease>.

⁷⁸ Press Release, ACLU, ACLU Launches “Teach Kids, Not Stereotypes” Campaign Against Single-Sex Classes Rooted in Stereotypes (May 21, 2012), available at <http://www.aclu.org/womens-rights/aclu-launches-teach-kids-not-stereotypes-campaign-against-single-sex-classes-rooted>.

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² Heather Hollingsworth & Jessie L. Bonner, *Why Single-Sex Education is Spreading Across the US*, CHRISTIAN SCI. MONITOR (July 8, 2012), <http://www.csmonitor.com/USA/Latest-News-Wires/2012/0708/Why-single-sex-education-is-spreading-across-the-US>.

⁸³ ACLU, PRELIMINARY FINDINGS OF ACLU “TEACH KIDS, NOT STEREOTYPES” CAMPAIGN 3 (2012).

⁸⁴ Press Release, ACLU, *supra* note 78.

segregation only for affirmative purposes to decrease sex discrimination in desired educational outcomes.”⁸⁵

The ACLU initiative elicited visceral and divergent reactions. Some assailed the organization for “launch[ing] a nationwide jihad against single-sex education.”⁸⁶ Others hailed the strategic assault as nothing less than a “crusade against toxic sex stereotypes taught in public schools.”⁸⁷ The imagery suggested some high ideal at the heart of a war with inevitable winners and losers. There were substantial questions: Who would win and who would lose? Who were the opposing forces on either side? Were they the civil liberties groups pitted against local school districts, or competing ideologies of sameness and difference, or both? What about the students locked in this battle? Who was looking after their best interests? What were those interests to begin with?

As the 2012 school year was about to begin, the ACLU delivered on its threat, suing the Wood County School Board in West Virginia. This time the ACLU won a preliminary injunction but only on the narrow issue of whether the program was truly “voluntary” as required by the 2006 Title IX regulations.⁸⁸ School officials, the district court concluded, had not provided families with timely notice of the program or the opportunity to opt in rather than merely opt out.⁸⁹ Nor had they offered the option of a coed class in the same school.⁹⁰ The court ordered the school to reinstate coed classes for the current school year.⁹¹ On the more fundamental legal question, however, the judge found “unpersuasive” the ACLU’s argument that “no single-sex classes would ever withstand scrutiny under the Constitution or Title IX.”⁹² The judge quoted a passage from the opinion in *Breckinridge*, which stated:

No legal authority supports the conclusion that optional single-sex programs in public schools are *ipso facto* injurious to the schools’ students. Unlike the separation of public school students by race, the

⁸⁵ SUE KLEIN, FEMINIST MAJORITY FOUND., STATE OF PUBLIC SCHOOL SEX SEGREGATION IN THE UNITED STATES 2007-2010: PART III: SUMMARY AND RECOMMENDATIONS 3 (2012), available at http://www.feminist.org/education/pdfs/sex_segregation_study_part3.pdf.

⁸⁶ Robert Knight, *ACLU Declares New War on Single-Sex Education*, WASH. TIMES (May 23, 2012), <http://www.washingtontimes.com/news/2012/may/23/aclu-declares-new-war-on-single-sex-education/?page=all>.

⁸⁷ Rosalind C. Barnett & Caryl Rivers, *School Sex Segregation Loses Ground*, FORBES (June 19, 2012, 11:50 AM), <http://www.forbes.com/sites/womensenews/2012/06/19/school-sex-segregation-loses-ground/>.

⁸⁸ *Doe v. Wood Cnty. Bd. of Educ.*, 888 F. Supp. 2d 771 (S.D. W. Va. 2012).

⁸⁹ *Id.* at 777.

⁹⁰ *Id.*

⁹¹ *Id.* at 780.

⁹² *Id.* at 778.

separation of students by sex does not give rise to a finding of constitutional injury as a matter of law.⁹³

The judge further observed that the Department of Education's "2006 regulations explicitly allow for a narrow exception to the general rule of coeducational classes, and schools can certainly avoid violating Title IX in implementing single-sex classes by complying with these regulations."⁹⁴

No federal court to date has affirmed, in a decision on the merits, the proposition that single-sex programs constitute per se violations of either Title IX or the Equal Protection Clause. And so, while the ACLU has won some minor battles on discrete facts, it seems to be losing the war on the law. This is not surprising. As for Title IX, federal courts are reluctant to overturn agency regulations unless they are clearly at odds with congressional intent.⁹⁵ And as for the Equal Protection Clause, the Court's decision in *United States v. Virginia* leaves open the possibility of single-sex programs. Faced with those realizations, the organization more recently has pursued the federal administrative route. In December 2012 the ACLU filed complaints under Title IX with the OCR against the Birmingham, Alabama, and Middleton, Idaho, school districts.⁹⁶ In each case single-sex programs allegedly were in clear violation of the 2006 Title IX regulations by failing to provide adequate opting-out information to parents, failing to provide a "substantially equal coeducational" alternative, failing to adequately evaluate the effects of the approach, and promoting sex stereotypes. The complaints called upon the OCR to investigate the cited programs, to bring them into legal compliance, and to more broadly provide guidance to all school districts on how to comply with the regulations.⁹⁷

Looking over these developments, it is clear that the ACLU has had only a marginal impact on the law, as such. That being said, however, the group's efforts undeniably have had a chilling effect on the development of single-sex programs. Fear of litigation combined with the financial and administrative burdens in legally maintaining a coed option have led a number of school

⁹³ *Id.* (quoting *A.N.A. ex rel. S.F.A. v. Breckinridge Cnty. Bd. of Educ.*, 833 F. Supp. 2d 673, 678 (W.D. Ky. 2011)).

⁹⁴ *Id.* at 779. In July 2013, the judge issued a consent order whereby the school district agreed not to implement single-sex classes until after the 2014-2015 school year and to give adequate notice to parents beforehand. *Wood Co. Board Settles Single-Sex Classes Lawsuit*, ASSOCIATED PRESS, July 2, 2013, available at <http://www.sfgate.com/news/article/Wood-Co-board-settles-single-sex-classes-lawsuit-4642623.php>.

⁹⁵ See *Chevron U.S.A. Inc. v. Natural Res. Def. Council*, 467 U.S. 837 (1984); SALOMONE, *supra* note 12, at 168-72 (discussing the legislative history of the Title IX statute).

⁹⁶ Press Release, ACLU, ACLU Asks Dept of Education to Investigate Single-Sex Programs Rooted in Stereotypes (Dec. 6, 2012), available at <http://www.aclu.org/womens-rights/aclu-asks-dept-education-investigate-single-sex-programs-rooted-stereotypes>.

⁹⁷ *Id.*

districts to either forgo new initiatives or discontinue existing ones despite interest from parents and students. In South Carolina, for example, the number of schools offering single-sex classes dropped from a high of 200 in the 2008-2009 school year to sixty-eight in the 2012-2013 year.⁹⁸

In support of the ACLU's legal attack, the *Science* authors have formed an advocacy group, the American Council for Co-Educational Schooling. The group's mission is to disseminate scientific data and policy arguments that critique single-sex programs and promote the benefits of coeducation.⁹⁹ Its website underscores the belief that single-sex schooling is unequivocally "harmful."¹⁰⁰ Among the policy reasons given are: the approach "promotes gender stereotyping"; it is "unwelcoming to students who don't conform to traditional sex roles"; it sends the message that "exclusion is acceptable and diversity not valued"; it "fails to train students for shared leadership in adult workplaces, families, and communities"; and "'separate but equal' classrooms are never truly equal."¹⁰¹

II. DECONSTRUCTING "THE PSEUDOSCIENCE OF SINGLE-SEX SCHOOLING"

This brings us back to the *Science* article, which thrust the debate into the court of public opinion. The authors made three controversial arguments: (1) that rationales supporting single-sex schooling based on brain differences between girls and boys lack scientific support, (2) that there is no conclusive evidence supporting the benefits of single-sex schooling, and (3) that single-sex programs are harmful to students.¹⁰² The first, dismissing rationales based in brain research, credibly holds merit. The second, claiming inconclusive evidence, is technically correct but misleading and overstated. The third, categorically imputing harms, is inadequately supported. Each of these assertions demands separate and critical examination.

But before going further, it is important to clarify exactly what the *Science* article is and what it is not. Some commentators have mistakenly claimed it to be either a "study" or a "meta-analysis";¹⁰³ yet it is neither. It does not present

⁹⁸ Ellen Meder, *Schools Battling Courts, Cost for Single-Gender Education*, SCNOW.COM, http://www.scnw.com/news/local/article_bb4dbc75-5465-5a28-94be-91fb75a0ca17.html (last updated Dec. 21, 2012).

⁹⁹ *Why Co-Ed?*, AM. COUNCIL FOR CO-EDUCATIONAL SCHOOLING, <http://lives.clas.asu.edu/acces/why.html> (last visited Mar. 28, 2013).

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² Halpern et al., *supra* note 1.

¹⁰³ See Gene V. Glass, *Primary, Secondary, and Meta-Analysis of Research*, EDUC. RESEARCHER, Nov. 1976, at 3 (differentiating between secondary analysis, which is the "re-analysis of data for the purpose of answering the original research question with better statistical techniques, or answering new questions with old data," and meta-analysis, defined as "the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings").

original data as a study would, and it does not statistically analyze and convert the results from numerous studies into a common metric as a meta-analysis would. In fact, save for a plausible critique of unsubstantiated claims made by brain research proponents, it is instead a brief, rapid-fire sampling of several research reviews and selective findings drawn primarily from disparate studies and short-term “experiments.” The methodology and the tenuous relevance of the cited sources to single-sex schooling generally defy the very scientific rigor that the *Science* authors claim to uphold.

A. *Debunking Brain Research*

The *Science* authors rightly take issue with overstated generalizations from neuroscience.¹⁰⁴ This is an evolving field of research, which demands caution in applying tentative yet potentially consequential findings to schooling. It finds its modern-day genesis in the 1990s, which President George H.W. Bush declared the “Decade of the Brain.”¹⁰⁵ Much of the early research was conducted on animals and failed to provide usable guidelines for teaching. By the close of the decade there were warnings from within the scientific community itself that the link between neuroscience and the classroom was “a bridge too far.”¹⁰⁶

Some of the more extreme recommendations for single-sex programs are based on studies of adults¹⁰⁷ or rats¹⁰⁸ and involved small sample sizes.¹⁰⁹ As

¹⁰⁴ Halpern et al., *supra* note 1, at 1706.

¹⁰⁵ Proclamation No. 6158, 55 Fed. Reg. 29,553 (July 20, 1990).

¹⁰⁶ Sarah D. Sparks, *Neuroscientists Find Learning Is Not ‘Hard-Wired,’* EDUC. WK., June 6, 2012, at 1 (quoting cognitive scientist and philosopher John T. Bruer of the James S. McDonnell Foundation).

¹⁰⁷ Some of these studies investigate sex-based auditory sensitivity. SAX, *supra* note 57, at 44 (citing John F. Corso, *Age and Sex Differences in Pure-Tone Thresholds*, 31 J. ACOUSTICAL SOC’Y AM. 498 (1980)); *see also* Lise Eliot, *Single Sex Education and the Brain*, SEX ROLES 5 (Aug. 18, 2011), <http://link.springer.com/content/pdf/10.1007%2Fs11199-011-0037-y> (stating that the “overlap in auditory sensitivity between [the sexes] is far greater than their average threshold difference”). Other studies investigate temperature sensitivity. Leonard Sax, *Six Degrees of Separation: What Teachers Need to Know About the Emerging Science of Sex Differences*, 84 EDUC. HORIZONS 190, 193-94 (2006) (citing M.Y. Beshir & J.D. Ramsey, *Comparison Between Male and Female Subjective Estimates of Thermal Effects and Sensations*, 12 APPLIED ERGONOMICS 29 (1981)). *But see* Eliot, *supra*, at 10 (observing that Sax failed to note three other studies by the same researchers finding either smaller sex differences or a female preference for the cooler room).

¹⁰⁸ These studies examined rats’ different color preferences based on sex. SAX, *supra* note 57, at 21-22 (citing David Salyer et al., *Sexual Dimorphism and Aromatase in the Rat Retina*, 126 DEVELOPMENTAL BRAIN RES. 131 (2001)). *But see* Eliot, *supra* note 107, at 7 (stating that “studies of the human retina . . . reveal a much smaller gender difference” in retinal thickness than the rat studies on which Sax relies).

¹⁰⁹ *See* Mark Liberman, *Liberman on Sax on Liberman on Sax on Hearing*, LANGUAGE LOG (May 19, 2008, 9:50 AM), <http://languagelog.ldc.upenn.edu/nll?p=171> (discussing

one eminent psychologist has observed: “The more distant you get from the level of the classroom, the less likely [the research] is to make a difference in the classroom.”¹¹⁰ Neuroscientists, in fact, now suggest that the best way to connect neuroscience findings to teaching is to help teachers comprehend how the brain responds to experience.¹¹¹

Girls and boys as a group tend to have different interests, which influence the way they react to different school subjects. Men and women also may have different learning styles. The extent to which those differences are biologically or environmentally determined remains open to question. And though there are small average sex differences, especially in the early grades, in areas such as activity level (favoring boys) and ability to focus (favoring girls), researchers have found no convincing evidence that boys and girls, as distinct groups, actually learn differently.¹¹²

Even where sex differences in the brain can be ascribed to “biology,” that does not necessarily mean that they are fixed or “hardwired” or that they are consequential of themselves from an educational standpoint.¹¹³ Neuroscientists are now coming to understand that there is a “continuous interaction among genes, brain, and environment.”¹¹⁴ Whatever small differences exist at birth commonly gain reinforcement through social experiences. What appear to be sex-based differences or similarities in adult brain structures may have been increased, decreased, and even initially created by environmental stimuli. Those changes can occur throughout the course of a lifetime. Girls, for example, tend to begin speaking earlier than boys and so mothers tend to speak more to their daughters than to their sons, which further develops the female child’s verbal ability. Rather than nature (genes) and nurture (environment) forming a dichotomy, the two continuously interact reciprocally in a “loop-like” fashion through biological, psychological, and social variables.¹¹⁵

exaggerations and misrepresentations of scientific findings regarding sex differences in hearing in SAX, *supra* note 57); Mark Liberman, *Retinal Sex and Sexual Rhetoric*, LANGUAGE LOG (May 20, 2008, 6:03 AM), <http://languagelog.ldc.upenn.edu/nll/?p=174> (discussing similar problems with Sax’s application of findings regarding sex differences in vision).

¹¹⁰ Sparks, *supra* note 106 (quoting Professor Daniel T. Willingham, University of Virginia at Charlottesville).

¹¹¹ *Id.*

¹¹² McLure, *supra* note 75 (describing meta-analysis of studies examining more than seven million students in grades kindergarten through eleven).

¹¹³ Eliot, *supra* note 107, at 3-6.

¹¹⁴ CORDELIA FINE, DELUSIONS OF GENDER: HOW OUR MINDS, SOCIETY, AND NEUROSEXISM CREATE DIFFERENCE 177 (2010).

¹¹⁵ DIANE F. HALPERN, ISSUE OF SINGLE-SEX EDUCATION: RENE A. ROST MIDDLE SCHOOL, PREPARED FOR THE PLAINTIFFS IN THE MATTER OF CIVIL ACTION NO. 6: CV-01565, BRECKENRIDGE LITIGATION 27-28 (2009), available at http://www.aclu.org/files/assets/Expert_Report_-_Diane_Halpern.pdf; see also DIANE F. HALPERN, SEX DIFFERENCES IN COGNITIVE ABILITIES 366 (4th ed. 2012) [hereinafter HALPERN, SEX DIFFERENCES IN

We should not ignore the effects of cultural and social influences on learning. Performance in math is a clear case in point. Researchers have found that girls' test scores in math lag most behind those of boys in countries like Turkey where gender inequities are most pervasive.¹¹⁶ In countries like Iceland, Sweden, and Norway, which place the fewest social and cultural restrictions on women, girls' math scores are equal to or higher than those of boys.¹¹⁷ And though the reading gap favoring girls does not appear to be influenced by culture, but is rather present in almost all countries,¹¹⁸ it expands in societies that are more "gender-equal."¹¹⁹ But attitudes toward women are only part of the story. In countries like Japan, which place a lower value than Americans on gender equity but a higher overall value on learning math, women's scores on math tests surpass those of American men.¹²⁰ Similar cultural effects have been found in attitudes toward competition. While it is often said that women prefer to work collaboratively and men competitively, women in matrilineal societies have demonstrated greater willingness to compete than their male counterparts. In patriarchal societies, the opposite has been observed.¹²¹

In any case, whatever the source of differences, good pedagogy dictates that schools should work at overcoming student weaknesses rather than reinforcing them. Schools, moreover, need to look at students as individuals. Many but not all girls may prefer working collaboratively in groups, and many but not all boys may thrive on competition. And so there needs to be room left for the student who does not fit the gender norm. More important, learning both interactive styles is crucial for both groups to succeed personally and professionally in the adult world. Many girls do enter school with more advanced verbal skills and many boys do so with more developed visual-spatial abilities useful in math and science. Yet those differences are not universal, and their magnitude within and across the sexes is debatable. Many boys have high energy levels and difficulty staying on task, especially in the early grades. Schools need to instill in those boys a sense of impulse control, and in many girls a comfort level in moving their bodies and claiming physical

COGNITIVE ABILITIES].

¹¹⁶ Luigi Guiso et al., *Culture, Gender, and Math*, 320 SCIENCE 1164, 1164 (2008).

¹¹⁷ *Id.*

¹¹⁸ NAT'L CTR. FOR EDUC. STATISTICS, U.S. DEP'T OF EDUC., NCES 2013-010, HIGHLIGHTS FROM PIRLS 2011: READING ACHIEVEMENT OF U.S. FOURTH-GRADE STUDENTS IN AN INTERNATIONAL CONTEXT 14 fig.3 (2012) (finding a significant difference favoring girls in average fourth-grade reading scores in forty-seven of the fifty-three education systems studied).

¹¹⁹ Guiso et al., *supra* note 116, at 1164-65.

¹²⁰ See *The PISA 2009 Profiles by Country/Economy*, OECD, <http://stats.oecd.org/PISA2009Profiles/#> (last visited Apr. 1, 2013) (reporting that the mean score for female students in Japan is 524 while the mean score for males in the United States is 497).

¹²¹ Uri Gneezy et al., *Gender Differences in Competition: Evidence from a Matrilineal and a Patriarchal Society*, 77 ECONOMETRICA 1637 (2009).

and social space.¹²² And what about verbal or sedentary boys and spatially able or energetic girls who fall outside those general parameters? The very fact that the United States has almost closed the gender gap in math achievement historically favoring boys demonstrates that “abilities” can be improved with adequate training.¹²³

B. *The Inconclusivity Conundrum*

As the foregoing discussion demonstrates, the *Science* article authors legitimately have upended studies selectively invoked by brain research proponents. They are equally guilty, however, of cherry picking research findings to support their own outsized claims opposing single-sex schooling. They specifically fall short on the question of inconclusive findings, ignoring researchers’ warnings not to confuse correlation with causation. At the same time, they demand of single-sex schooling an unreasonably high level of “conclusive” scientific evidence that, applied to other educational approaches and programs, would stifle all educational innovation. A few examples demonstrate the point.

The authors argue that single-sex schooling, as a matter of policy, should “stand on evidence that it produces better educational outcomes than coeducational schooling,” a vague, narrow, and debatable premise that begs clarification.¹²⁴ Are outcomes measured simply in achievement test scores? What about other measures like college attendance, advanced coursework in non-traditional subjects, increased self-confidence, ultimate career choices? To demonstrate that such programs do not make the grade, the authors cite a large-scale research review that found no apparent differences in test scores between single-sex and coed programs.¹²⁵ Yet they fail to mention that the researchers themselves question whether the “empirical methods of science” are the most effective way to capture “particular criteria, for particular children, in particular contexts.”¹²⁶ The researchers suggest that perhaps deciding between the two approaches is simply a “matter of judgment.”¹²⁷

¹²² Charles H. Hillman et al., *Aerobic Fitness and Cognitive Development: Event-Related Brain Potential and Task Performance Indices of Executive Control in Preadolescent Children*, 45 DEVELOPMENTAL PSYCHOL. 114 (2009) (finding that physical fitness through aerobic activity is positively associated with better cognitive performance among preadolescents).

¹²³ Janet S. Hyde et al., *Gender Similarities Characterize Math Performance*, 321 SCIENCE 494, 495 (2008).

¹²⁴ Halpern et al., *supra* note 1, at 1706.

¹²⁵ *Id.* (citing ALAN SMITHERS & PAMELA ROBINSON, *THE PARADOX OF SINGLE-SEX AND CO-EDUCATIONAL SCHOOLING* 30-31 (2006)).

¹²⁶ SMITHERS & ROBINSON, *supra* note 125, at 30.

¹²⁷ *Id.* at 31.

The *Science* article notes that data from the Programme for International Student Assessment (PISA)¹²⁸ likewise show “little overall difference” between single-sex and mixed-sex academic outcomes.¹²⁹ But here again, the PISA report urges restraint in extrapolating from the results. The number of students studied was “relatively small” and PISA measures neither social environment nor student social development, which as the report states, is “an important goal of education.”¹³⁰

The authors further dismiss a 2005 review of forty studies on single-sex schools commissioned by the U.S. Department of Education.¹³¹ Though the review found “equivocal” results on a range of academic and social outcomes, between 35 and 45% of the studies showed results favorable to single-sex schooling on concurrent outcomes.¹³² Only 2 to 10% showed results favorable to coed schools.¹³³ The remaining 39 to 53% of the studies showed a null result.¹³⁴ The review’s investigators note the limitations in the research design and caution against drawing definitive conclusions from their findings.¹³⁵ They especially underscore the small number of sufficiently controlled studies available on each outcome, the differing criteria and statistical controls used across studies, the lack of well-developed hypotheses, and the narrow set of outcomes examined.¹³⁶ In the end, in addition to the relatively low support found for coed schooling, the report underscores the weaknesses of existing studies and the need for more controlled and carefully designed research comparing single-sex and coed programs.

The *Science* authors argue that “blind assessment, randomized assignment,” and “consideration of selection factors” are essential for determining whether educational innovations are effective.¹³⁷ That may be the case in the world of

¹²⁸ PISA is an international assessment program administered every three years in countries belonging to the OECD and a group of partner countries. It provides information on the competencies of fifteen-year-olds in reading, mathematics, and science and attempts to measure the extent to which students are able to apply what they have learned in school to novel settings.

¹²⁹ Halpern et al., *supra* note 1, at 1706.

¹³⁰ OECD, EQUALLY PREPARED FOR LIFE?: HOW 15-YEAR-OLD BOYS AND GIRLS PERFORM IN SCHOOL 48 (2009), available at <http://www.oecd.org/pisa/pisaproducts/pisa2006/42843625.pdf>.

¹³¹ FRED MAEL ET AL., U.S. DEP’T OF EDUC., OFFICE OF PLANNING, EVALUATION & POLICY DEVELOPMENT, SINGLE-SEX VERSUS COEDUCATIONAL SCHOOLING: A SYSTEMATIC REVIEW (2005), available at <http://www2.ed.gov/rschstat/eval/other/single-sex/single-sex.pdf>.

¹³² *Id.* at xiii.

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.* at 89.

¹³⁶ *Id.* at 86-87.

¹³⁷ Halpern et al., *supra* note 1, at 1706; see also Rosemary C. Salomone, *Single-Sex Programs: Resolving the Research Conundrum*, 108 TEACHERS C. REC. 778, 780 (2006).

pure science. But the world of education is far less rigorously controlled or controllable. Though “scientifically based” research and randomized trials, commonly used in medicine, have garnered favor in Washington policy circles, they are rare and somewhat controversial in education. And though the Department of Education “is committed to ‘evidence-based policy-making,’” as the *Science* authors remind us, that commitment reasonably must suggest something short of the standard governing the hard sciences.¹³⁸ It is costly and logistically burdensome to design and monitor identical learning environments that isolate the specific approach being studied. Assigning students at random to unproven programs, moreover, is not only unpopular with parents, but it also raises ethical concerns. In the case of single-sex schooling, federal law explicitly prohibits the assignment of students to schools on the basis of sex,¹³⁹ while the 2006 Title IX regulations explicitly require that such programs remain voluntary.¹⁴⁰

Quasi-experimental designs that use statistical techniques, including multi-level modeling, can control for quantifiable variables like parental education or income. Yet they cannot accommodate the many immeasurable factors that affect educational outcomes. Most of the more scientifically rigorous studies on school effects are limited to one or two years due in large part to the financial costs in conducting such research and the fact that students drop off from the study each year.¹⁴¹ Economically disadvantaged students have an especially high degree of mobility. And as a recent comprehensive overview of findings indicates, individual studies differ in their methodology, analytical techniques, and outcomes measured. They also differ in the variables they isolate. Some control for student factors like prior ability. Others control for institutional factors like instructional hours. And so, though meta-analyses of

¹³⁸ Halpern et al., *supra* note 1, at 1707 (citing Michael D. Shear & Nick Anderson, *President Obama Discusses New “Race to the Top” Program*, WASH. POST (July 23, 2009, 5:29 PM), <http://www.washingtonpost.com/wp-dyn/content/article/2009/07/23/AR2009072302938.html>).

¹³⁹ The Equal Educational Opportunities Act of 1974 provides:

No State shall deny equal educational opportunity to an individual on account of his or her race, color, sex, or national origin, by . . . the assignment by an educational agency of a student to a school, other than the one closest to his or her place of residence within the school district in which he or she resides, if the assignment results in a greater degree of segregation of students on the basis of race, color, sex, or national origin among the schools of such agency than would result if such student were assigned to the school closest to his or her place of residence within the school district of such agency

20 U.S.C. § 1703(c) (2012).

¹⁴⁰ Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance, 71 Fed. Reg. 62,530 (Oct. 25, 2006) (to be codified at 34 C.F.R. pt. 106)..

¹⁴¹ Cornelius Riordan, *The Impact of Single-Sex Public Schools: Fact or Fiction?* 7-10 (Oct. 16, 2008) (unpublished manuscript) (on file with author) (highlighting limitations of research on single-sex schooling).

existing studies provide some insight into programmatic success, they too are limited in what they are able to reveal. They typically examine studies across countries; across public, private, and religious sectors; and across a span of years. They also fail to address the impact of the cultural context in which schooling takes place or the way that both single-sex and coeducational schools construct or reconstruct gender.¹⁴²

C. *Do Single-Sex Programs Harm Students?*

The most engaging, and therefore most potentially consequential, argument contained in the *Science* article is that sex separation, in any form, leads to gender-stereotyped attitudes and is therefore harmful to students. To support this conclusion, the authors over-generalize from short-term observational studies that used small sample sizes or are of dubious relevance to single-sex schooling, or both. They further overstate the “negative” effects of same-sex grouping, ignore details that point to some benefits, and ascribe causation to what may merely be correlation.

The *Science* authors cite, for example, research on the negative effects of racially segregated schools on African American students.¹⁴³ This commonly asserted analogy to sex separation is not only false, but it turns the law of single-sex schooling on its head. Racially segregated schools historically were not voluntary for African Americans and existed within a social and economic context that was hostile and physically endangering to them. Racially separate schools carried a message of disempowerment and inferiority, causing students, as the Supreme Court found in *Brown v. Board of Education*, irreparable educational and psychological harm.¹⁴⁴ At the heart of the Court’s decision was the concept of equal dignity and respect, which goes to the very mission of well-designed single-sex programs. Again, the Title IX regulations require that single-sex programs must be voluntary¹⁴⁵ and the U.S. Supreme Court made clear in *United States v. Virginia* that such programs must be designed to empower students.¹⁴⁶

¹⁴² Emer Smyth, *Single-Sex Education: What Does the Research Tell Us?*, REVUE FRANÇAISE DE PÉDAGOGIE, Apr.-May-June (2010), at 47, 52-53.

¹⁴³ Halpern et al., *supra* note 1, at 1707 (citing Gary Orfield et al., *Statement of American Social Scientists of Research on School Desegregation to the U.S. Supreme Court in Parents v. Seattle School District and Meredith v. Jefferson County*, 40 URB. REV. 96, 96 (2008)).

¹⁴⁴ *Brown v. Bd. of Educ.*, 347 U.S. 483, 494 (1954).

¹⁴⁵ Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance, 71 Fed. Reg. at 62,531.

¹⁴⁶ *United States v. Virginia*, 518 U.S. 515, 533 (1996) (“Virginia, in sum, while maintaining VMI for men only, has failed to provide any ‘comparable single-gender women’s institution.’ Instead, the Commonwealth has created a VWIL program fairly appraised as a ‘pale shadow’ of VMI in terms of the range of curricular choices and faculty stature, funding, prestige, alumni support and influence.” (citation omitted)).

To bolster their argument that gender separation “exaggerates sex-typed behaviors and attitudes,” the authors cite a study – co-written by two of the *Science* article authors – of twenty-eight boys, 4.5- to 6-years-old, in a university coed daycare facility; eighty-four percent of the children were white and the majority were from middle- to upper-middle-class families.¹⁴⁷ The researchers found that those who spent more time playing with other boys engaged in a more “forceful, active, and rough style of play.”¹⁴⁸

From these limited findings, the *Science* authors draw the sweeping conclusion that boys “who spend more time with other boys become increasingly aggressive.”¹⁴⁹ The authors state what was merely an observation, over a 6.5-month period in a coed early-childhood setting with specific demographics, as a truth about boys in general and extrapolate from there to all-boys’ classes in particular. They ignore the researchers’ suggestion that different ethnic groups or other settings might reveal different patterns of behavior.¹⁵⁰ The researchers further hesitate to ascribe causation from what may have been mere correlation.¹⁵¹ They explain that their observations were limited to unstructured play. The children may have set up their play patterns based on what they perceived to be shared interests within their own sex.¹⁵² The boys they studied, moreover, tended to play further from adult supervision than the girls and so their play was less adult structured.¹⁵³

What escapes the *Science* authors is that perhaps more-carefully structured learning environments with consciously defined behavioral expectations, with or without girls, might produce different behavior patterns among boys. The lead *Science* author herself has drawn that connection between environment and behavior in her own scholarship.¹⁵⁴ Adult male role models who convey more directed expectations, as in thoughtfully planned boys’ schools, could make that possibility even more probable. While children are “particularly attuned to peer messages about appropriate behavior,” as the researchers point out, they also model their behavior after adults whom they admire and respect.¹⁵⁵

To further make the case that single-sex education programs are harmful, the authors argue that sex labeling creates intergroup biases.¹⁵⁶ They rely in part on observations and interviews of fifty-seven pre-school children in four

¹⁴⁷ Halpern et al., *supra* note 1, at 1707.

¹⁴⁸ Carol Lynn Martin & Richard A. Fabes, *The Stability and Consequences of Young Children’s Same-Sex Peer Interactions*, 37 DEVELOPMENTAL PSYCHOL. 431, 443 (2001).

¹⁴⁹ Halpern et al., *supra* note 1, at 1707.

¹⁵⁰ Martin & Fabes, *supra* note 148, at 445.

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Id.* at 433.

¹⁵⁴ HALPERN, SEX DIFFERENCES IN COGNITIVE ABILITIES, *supra* note 115, at 313.

¹⁵⁵ Martin & Fabes, *supra* note 148, at 445.

¹⁵⁶ Halpern et al., *supra* note 1, at 1707.

classrooms in two schools over a two-week period.¹⁵⁷ Teachers in two of the classrooms repeatedly used gender through physical separation (students lined up by sex), classroom organization (separate bulletin boards), and gender-specific language (“I need a girl to pass out the markers.”).¹⁵⁸ Over the two-week period, students in the high-gender-salience group became less likely to play with children of the other sex.¹⁵⁹ The limitations of this study are self-evident. First, the two-week time period was far too short to allow useful conclusions. Moreover, few single-sex programs serve pre-school students, who may be especially impressionable. Nor would a well-organized program reinforce sex differences so overtly and intensely. And though one can argue that placing students into separate classes or schools, at least initially, conveys a powerful message of “difference,” there subsequently is no need to explicitly make those repeated gender distinctions.

In an especially long analytic stretch intended to prove “far-reaching consequences” of separate schooling, the *Science* authors rely on an outdated and inappropriate study from the United Kingdom.¹⁶⁰ There the researchers found that men who were born in 1958 and attended all-male schools were “somewhat more likely” to have been divorced or separated by age forty-two.¹⁶¹ The obvious suggestion is that separate schooling impairs the ability of males to maintain lasting relationships with women. The equally obvious question, however, is whether the student population, mission, and practices of elite British schools four decades ago provide a valid basis for comparison with contemporary public schools in the United States, especially those serving disadvantaged minority students. Yet even taking the study at face value, the overall findings were more textured than the *Science* authors lead readers to believe. Single-sex schools, in fact, seemed to counter traditionally gendered curricular preferences. Females tended to focus their studies more on math and science while males focused more on languages and literature.¹⁶² The researchers, moreover, found no link between single-sex schooling and later division of labor in the home, or attitudes toward gender roles.¹⁶³ Women who had attended separate schools also gained higher wages.¹⁶⁴ Yet the *Science* authors fail to mention any of these points.

¹⁵⁷ *Id.* (citing Lacey J. Hilliard & Lynn S. Liben, *Differing Levels of Gender Salience in Preschool Classrooms: Effects on Children’s Gender Attitudes and Intergroup Bias*, 81 *CHILD DEV.* 1787, 1790 (2010)).

¹⁵⁸ Hilliard & Liben, *supra* note 157, at 1790.

¹⁵⁹ *Id.* at 1796.

¹⁶⁰ Halpern et al., *supra* note 1, at 1707.

¹⁶¹ DIANA LEONARD, ECON. & SOCIAL RESEARCH COUNCIL, RES-000-22-1085, SINGLE-SEX AND CO-EDUCATIONAL SECONDARY SCHOOLING: LIFE COURSE CONSEQUENCES? 14 (2006), available at <http://www.esrc.ac.uk/my-esrc/grants/RES-000-22-1085/read>.

¹⁶² *Id.* at 23.

¹⁶³ *Id.* at 22.

¹⁶⁴ *Id.* at 23.

In sum, this sampling of studies, offered as evidence of intrinsic “harm,” is as inconclusive as research supporting the benefits of single-sex schooling. And so given all the analytic flaws, limitations, and conflicting findings, if there is any convincing empirical support for the argument that separate schooling is per se harmful to students, it does not appear in the widely discussed and cited *Science* article.

D. *Recent Findings from Abroad*

As noted, the *Science* article and its pointed indictment of single-sex schooling have invited considerable scholarly and media commentary, both in the United States and abroad. In stark contrast, recent positive findings from the United Kingdom, Germany, Switzerland, and South Korea have attracted barely a hint of attention, especially in the American press. Nor have these studies generated a noticeable response from scholars who study gender differences and schooling. They all offer a measure of scientific legitimacy, examining students randomly assigned to single-sex and coed treatment groups. They also gain support from a number of other less-rigorously controlled or directly relevant studies that nonetheless merit attention.

In a series of studies, researchers at the University of Essex examined the conventional belief that women avoid competition and the subsequent effects of that avoidance on career choices and opportunities. In one study, they divided 800 first-year undergraduates enrolled in introductory economics into thirty-seven small classes that were all female, all male, or coed.¹⁶⁵ At the end of the year, students in the all-female break-out sessions were seven percent more likely to pass their first-year courses and scored ten percent higher in their required second-year courses than their female counterparts in coed classes. The differences were most dramatic among students in the fifteen percent quartile, where being assigned to an all-female class increased scores by over twenty-two percent.¹⁶⁶ The females in the all-female classes were also more likely to attend class, which could have led to their better performance. There were no differences in female students taking technical courses, nor were there any overall differences among the male students. The researchers suggest that differences in pass rates and scores in the all-female classes were related to the psychological effects of “stereotype threat,” a phenomenon whereby individuals feel anxiety or concern in situations that remind them of negative stereotypes about their social group.¹⁶⁷ If female students have internalized the belief that women do not perform as well as men in

¹⁶⁵ ALISON L. BOOTH ET AL., INST. FOR THE STUDY OF LABOR, IZA DP NO. 7207, DO SINGLE-SEX CLASSES AFFECT EXAM SCORES? AN EXPERIMENT IN A COEDUCATIONAL UNIVERSITY 13-14 (2013), available at <http://ftp.iza.org/dp7207.pdf>.

¹⁶⁶ *Id.*

¹⁶⁷ Claude M. Steele, *A Threat in the Air: How Stereotypes Shape Intellectual Identity and Performance*, 52 AM. PSYCHOLOGIST 613, 614 (1997).

economics, then they may fear participating in class discussion and may experience additional anxiety in a test-taking situation.

These findings built on a related study in which, at the end of two weeks, students randomly assigned to the all-female economics classes were significantly more likely to choose a lottery over a “sure bet” than their coed class counterparts.¹⁶⁸ The all-female setting apparently had rendered students less “risk averse” and more competitive.¹⁶⁹ Similar results emerged from two other studies conducted by the researchers. The first compared 200 male and female high school students from single-sex and coed schools.¹⁷⁰ The second compared students between the ages of ten and eleven, randomly assigned to all-girls’, all-boys’, or mixed-sex groups, on their willingness to enter a tournament.¹⁷¹

The researchers conclude that gender differences in risk behavior observed in previous studies perhaps reflect “social learning” rather than “inherent gender traits.”¹⁷² They speculate that when women are placed in an all-female environment where they are not reminded of their gender identity they lose a culturally driven belief that avoiding risk is “appropriate” female behavior.¹⁷³ They warn that females who are less confident in class may also be less competitive and more risk averse in the work world, causing them to avoid competitive environments and higher-paying jobs that are often tied to bonuses based on organizational performance.¹⁷⁴ They suggest that changing the learning context might help resolve the problem of female underrepresentation in high-level, male-dominated careers. These findings confirm those of other studies in which women performed better in math competitions in same-sex environments.¹⁷⁵ The researchers finally conclude that the differential response to competition between the sexes might distort the perceived differences in both math scores and underlying skills, especially among the most-capable female students.¹⁷⁶

Reported studies from Germany and Switzerland lend similar support to single-sex programs. In the German study, researchers examined students who

¹⁶⁸ ALISON BOOTH ET AL., INST. FOR THE STUDY OF LABOR, IZA DP NO. 6133, GENDER DIFFERENCES IN RISK AVERSION: DO SINGLE-SEX ENVIRONMENTS AFFECT THEIR DEVELOPMENT? 18 (2011), available at <http://ftp.iza.org/dp6133.pdf>.

¹⁶⁹ *Id.* at 19.

¹⁷⁰ Alison L. Booth & Patrick Nolen, *Gender Differences in Risk Behaviour: Does Nurture Matter?*, 122 *ECON. J.* F56, F61-63 (2012).

¹⁷¹ Alison Booth & Patrick Nolen, *Choosing to Compete: How Different Are Girls and Boys?*, 81 *J. ECON. BEHAV. & ORG.* 542, 545-47 (2012).

¹⁷² Booth & Nolen, *supra* note 170, at F73.

¹⁷³ *Id.* at F74.

¹⁷⁴ *Id.* at F56.

¹⁷⁵ See, e.g., Muriel Niederle & Lise Vesterlund, *Explaining the Gender Gap in Math Test Scores: The Role of Competition*, 24 *J. ECON. PERSP.* 129, 133 (2010).

¹⁷⁶ *Id.*

were randomly assigned to mixed-sex and single-sex eighth-grade physics classes in four state comprehensive coed schools.¹⁷⁷ Each teacher taught at least one mixed-sex and one single-sex class. At the end of the first year, girls from the single-sex classes reported a better physics-related self-concept of ability than girls in the coed classes. The boys showed no differences. The researchers suggest that single-sex schooling may carry beneficial effects on girls' self-concept of ability in masculine domains.¹⁷⁸

In the Swiss study, researchers looked at female high school students randomly assigned to single-sex and coed classes, examining their performance in mathematics and German, two courses that all students were compelled to take.¹⁷⁹ Both types of classes used exactly the same curriculum and mode of examination.¹⁸⁰ The researchers found that single-sex instruction positively affected proficiency in math, especially where the teacher was male, but had no effect on German.¹⁸¹ They suggest that perhaps students in the all-girls' classes were more comfortable engaging in the competition that the more-objective grading measures used in math, as compared to those used in the German course, arguably elicited.¹⁸² They also offer an alternative explanation. Like the economics-class findings from England, perhaps female students were overcoming "stereotype threat" in math.

Previous studies in the United States have drawn parallel conclusions regarding math outcomes among female students. In one case high-achieving females performed at a significantly lower level on a standardized math test when told that the test had previously elicited sex differences unfavorable to women.¹⁸³ Another case highlighted the indirect environmental effects of negative stereotypes. Even where gender was not made expressly salient, high-achieving female undergraduate students experienced performance deficits in a math test, but not in a verbal test, in proportion to the number of males in the testing environment.¹⁸⁴ The more males present, the worse the females' math

¹⁷⁷ Ursula Kessels and Bettina Hannover, *When Being a Girl Matters Less: Accessibility of Gender-Related Self-Knowledge in Single-Sex and Coeducational Classes and Its Impact on Students' Physics-Related Self-Concept of Ability*, 78 BRIT. J. EDUC. PSYCHOL. 273 (2008).

¹⁷⁸ *Id.* at 286.

¹⁷⁹ Gerald Eisenkopf et al., *Academic Performance and Single-Sex Schooling: Evidence from a Natural Experiment in Switzerland* 10-13 (Ctr. for Econ. Studies & Ifo Inst. for Econ. Research, Working Paper No. 3592, 2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1938858.

¹⁸⁰ *Id.* at 13.

¹⁸¹ *Id.* at 24.

¹⁸² *Id.* at 25.

¹⁸³ Steven J. Spencer et al., *Stereotype Threat and Women's Math Performance*, 35 J. EXPERIMENTAL SOC. PSYCHOL. 4, 4 (1999).

¹⁸⁴ Michael Inzlicht & Talia Ben-Zeev, *A Threatening Intellectual Environment: Why Females Are Susceptible to Experiencing Problem-Solving Deficits in the Presence of Males*, 11 PSYCHOL. SCI. 365, 367 (2000).

performance.¹⁸⁵ In view of these differences, the researchers concluded that perhaps females benefit when placed in single-sex math classrooms.¹⁸⁶

A more recent study from Uganda comparing tenth-grade students identified as high achieving in single-sex and coed boarding schools confirmed those findings. Students in the all-girls' school out-performed coed students on a math achievement test. They also reported a higher self-perception of their abilities in mathematics and a higher sense of the importance of mathematics to them now and in their careers to come. Again, the researchers attribute the differences in outcomes to the negative effects of "stereotype threat" on the coed group.¹⁸⁷ Yet even beyond short-term performance, others have found that negative stereotypes perceived by American female college students likewise affected their sense of "belonging" in the math domain, which in turn has a negative impact on their intent to pursue math in the future.¹⁸⁸ Taken together, these findings suggest that girls gain from supportive learning environments where the message conveyed is that intelligence is not static but rather malleable over time through experience and risk taking.

A final study from the international setting using random controls and yielding notable results comes from South Korea. Both public and private schools in Seoul have used random student assignment as a matter of policy since 1974, thus mitigating the potentially skewed effects of both selection bias and the enthusiasm that comes with novel programs.¹⁸⁹ The study found a significant correlation between attending an all-boys' or an all-girls' school and higher scores on Korean and English language tests.¹⁹⁰ Graduates of single-sex schools also were more likely to attend a four-year college and less likely to attend a two-year college than graduates of coed schools.¹⁹¹ The researchers conclude that even after accounting for school-level variables such as teacher quality, student-teacher ratio, the proportion of students receiving free lunch, and whether the school was public or private, the positive effects of single-sex schooling were "substantial."¹⁹²

Several other studies from abroad, while not as carefully controlled, are also worth mentioning. One particularly informative study from Germany

¹⁸⁵ *Id.* at 368-69.

¹⁸⁶ *Id.* at 369-70.

¹⁸⁷ Katherine Picho & Jason M. Stephens, *Culture, Context and Stereotype Threat: A Comparative Analysis of Young Ugandan Women in Coed and Single-Sex Schools*, 105 J. EDUC. RES. 52, 58 (2012).

¹⁸⁸ Catherine Good et al., *Why Do Women Opt Out? Sense of Belonging and Women's Representation in Mathematics*, 102 J. PERSONALITY & SOC. PSYCHOL. 700, 700 (2012).

¹⁸⁹ Hyunjoon Park et al., *Causal Effects of Single-Sex Schools on College Entrance Exams and College Attendance: Random Assignment in Seoul High Schools*, DEMOGRAPHY 6 (Oct. 17, 2012), <http://link.springer.com/content/pdf/10.1007%2Fs13524-012-0157-1>.

¹⁹⁰ *Id.* at 20.

¹⁹¹ *Id.*

¹⁹² *Id.* at 1.

addressed the continued math gap favoring boys. Even though students were not randomly assigned to separate or mixed groups, the findings nonetheless suggest that single-sex schooling may be a psychosocial variable influencing visual-spatial skills related to math achievement.¹⁹³ Researchers compared the performance of 252 students, in the eighth and twelfth grades, attending single-sex and coed Gymnasias (academic secondary schools), in solving a mental rotation task that has generated consistently reliable and substantial sex differences favoring males across cultures and ages.¹⁹⁴ At the eighth-grade level, boys significantly outperformed girls attending the all-girls' school whereas there was no difference between the sexes at the coed school.¹⁹⁵ By the twelfth grade, the findings changed dramatically. Girls from single-sex schools performed more than half a standard deviation better than girls from coed schools and only a half standard deviation below the coed boys.¹⁹⁶ The researchers propose that perhaps the cumulative effect of separate schooling led to the pronounced gains among girls in twelfth grade.¹⁹⁷

Similar support for same-sex groupings comes from a large-scale study conducted in Milan. Though not specifically creating all-male or all-female classes, there the practice is to assign students to high school classrooms with no requirement of gender balance.¹⁹⁸ Examining data collected on over 30,000 students graduating between 1985 and 2005, researchers found that being assigned to a secondary school with a higher proportion of people of the same sex increased the probability of the student choosing a high-income major in college (Engineering, Economics/Business, and Medicine) and therefore increased his or her lifetime salary.¹⁹⁹ While the researchers attribute this effect to increased confidence and greater willingness to compete among women in mostly female classrooms, they also observed a similar effect for men educated in predominantly male classrooms.²⁰⁰ Perhaps they too gained more confidence or were simply better able to focus on academics in the absence of females.

A final study analyzing data on 219,849 students from 123 schools in Trinidad and Tobago demands a brief mention. Opponents of separate schooling often cite the study to support their case while ignoring its more subtle points.²⁰¹ Though separate schooling did not improve academic

¹⁹³ Corinna Titze et al., *Single-Sex School Girls Outperform Girls Attending a Co-Educative School in Mental Rotation Accuracy*, 65 *SEX ROLES* 704, 711-12 (2011).

¹⁹⁴ *Id.* at 706. The study's subjects included eighty-four girls attending single-sex institutions and eighty-four girls and boys each attending coed institutions. *Id.*

¹⁹⁵ *Id.* at 707-08.

¹⁹⁶ *Id.*

¹⁹⁷ *Id.* at 708.

¹⁹⁸ Massimo Anelli & Giovanni Peri, *The Long Run Effects of High-School Class Gender Composition* 8 (Nat'l Bureau of Econ. Research, Working Paper No. 18744, 2013).

¹⁹⁹ *Id.* at 4.

²⁰⁰ *Id.* at 23.

²⁰¹ C. Kirabo Jackson, *Single-Sex Schools, Student Achievement, and Course Selection:*

performance between sixth and tenth grades for most students attending single-sex schools, it appeared to benefit those girls who strongly preferred an all-girls' learning environment.²⁰² As the researcher himself suggests, it also may produce positive effects on "important social outcomes" not addressed in the study.²⁰³

These findings admittedly are drawn from diverse countries with distinct educational systems and cultural contexts. Yet examined as a whole, they provide tentative support for the proposition that single-sex programs offer emotional and academic benefits, particularly to female students. More important, they challenge repeated claims by the *Science* article authors, both collectively and individually, that there exists no evidence from the United States or abroad demonstrating the advantages of separate schooling when other student and school variables are controlled.²⁰⁴ On a similar note, they defy the ACLU's unequivocal position that "[a]ll meaningful studies of these programs show that they don't improve academics, but they do foster stereotypes and do a disservice to kids who don't fit these artificial distinctions."²⁰⁵

III. CONTEXT MATTERS

Caught in this battle of conflicting findings and competing ideologies, the debate over single-sex schooling has reached a confounding level of absolutism, abstraction, and over-simplification. Lost in the crossfire are critical factors that mediate to varying degrees the potential success, feasibility, and advisability of single-sex programs as a matter of law and social policy in the United States and abroad. Those factors include distinctions between

Evidence from Rule-Based Student Assignments in Trinidad and Tobago, 96 J. PUB. ECON. 173, 176 (2012).

²⁰² *Id.* at 174.

²⁰³ *Id.*

²⁰⁴ Halpern et al., *supra* note 1, at 1706-07; Valerie Strauss, *The Case Against Single-Sex Schooling*, WASH. POST (June 4, 2012, 6:00 AM), http://www.washingtonpost.com/blogs/answer-sheet/post/the-case-against-single-sex-schooling/2012/06/03/gJQA75DNCV_blog.html ("Careful analysis in both the United States and from around the world demonstrates that any apparent advantage of single-sex schools disappears when you account for other characteristics, such as students' prior ability and the length of the school day."); *see also* Michael Alison Chandler, *Study: Single-Sex Education May Do More Harm Than Good*, WASH. POST (Sept. 22, 2011), http://www.washingtonpost.com/local/education/study-single-sex-education-may-do-more-harm-than-good/2011/09/22/gIQABAQOoK_story.html (quoting Richard A. Fabes, a director of the American Council of Coeducational Schooling, as stating that "'nobody is talking about how there's no evidence to support' single-sex public schooling").

²⁰⁵ Press Release, ACLU, *Single-Sex Classes Rooted in Stereotypes Prevalent Across the Nation, Says ACLU Report* (Aug. 20, 2012), *available at* <http://www.aclu.org/womens-rights/single-sex-classes-rooted-stereotypes-prevalent-across-nation-says-aclu-report> (statement of Amy L. Katz, cooperating attorney, ACLU Women's Rights Project).

separate classes in coed schools and free-standing separate schools; the impact of race, ethnicity, and social class on educational outcomes; and the role of cultural, religious, and political differences across national settings.

A. *Single-Sex Classes vs. Schools*

Many of the questionable practices appearing in court documents, ACLU correspondence, and press accounts relate specifically to separate classes in coeducational public schools. These programs are far more numerous and tend to be more closely aligned with brain research proponents than separate schools. They also present certain challenges and opportunities in navigating the fine line between sex equity and sex stereotyping.

Separate classes arguably make sex a more salient feature in the eyes of students and teachers. They therefore demand more conscious effort to avoid engaging in stereotypical practices or conveying a message that students are hard-wired differently depending on their sex. The required mix of single-sex and coed classes within the same building, the daily movement of students between the two; the typical choice of traditionally gendered subjects like math, science, and language arts for separate classes; and the explicit rationales needed to justify that separation to parents and community members pose distinct though not insurmountable challenges for school staff. On the positive side, however, single-sex classes also offer a compromise between coed and single-sex schools in that they provide daily opportunities for female and male students to interact in an academic and social setting. Of course, those opportunities can remain empty unless school officials consciously realize them.

Some programs navigate this winding course better than others. Some comply with Title IX standards and effectively avoid the pitfalls of gender stereotyping. Others do not. Brain research rationales have so tainted the practices of at least some of these programs that it is difficult, if not impossible, to gain a clear reading of their true potential for improving academic and social outcomes. Those same widely reported practices have placed into serious question all single-sex initiatives, including the many thoughtfully planned separate classes and schools that now dot the education landscape.

Opponents of single-sex schooling do not confine their criticism to single-sex classes or to sex stereotyping but go further by opposing single-sex public schools and the very concept of sex separation. And though they acknowledge the measured success of some schools, they ascribe that success to various attributes – such as enhanced resources, smaller class sizes, longer school days, longer school years, selective student bodies, and especially dedicated teachers – that characterize many of these schools even within the public sector.²⁰⁶ Many are charter schools²⁰⁷ and indeed enjoy such added benefits and services

²⁰⁶ See, e.g., HALPERN, *supra* note 115, at 368.

²⁰⁷ Charter schools are tuition-free public schools that are exempt from certain state or

through private funding. Single-sex public schools also tend to attract larger numbers of highly motivated students and involved parents. Yet they are not nearly as selective in their admissions policies or as uniformly well endowed as many believe. Charter schools in particular commonly select students through a lottery required by their respective state charter school laws. At the Eagle Academies for Young Men in New York and Newark, for example, twenty-five percent of the students are designated as having “special needs.”²⁰⁸ Many of the students there and at similar schools come from single-parent homes and live in communities on the economic and social margins, with most being racial minorities. As the principal of the Bronx Eagle Academy put it, “Many of our boys appear emotionally whole on the outside, but they are broken on the inside.”²⁰⁹ Yet in 2010 the school had a graduation rate of eighty-five percent, more than twice the citywide average for African American males, and ninety percent of its graduates typically go on to attend four-year colleges and universities.²¹⁰

Resources and demographics tell only part of the story. Though empirical data remain inconclusive, proponents persuasively argue that, at their best, single-sex schools and classes help students unlearn sex stereotypes. They encourage interest among girls in math and science and among boys in writing and foreign languages, skills that are critical in the global information economy. Separate schools especially teach for the comprehensive outcome, the development of students for the short and the long term of life and leadership. Beyond test scores, they look to academic investment and enduring results in college attendance and career choices. They provide disadvantaged boys in particular with positive same-sex role models in a totalistic, rigorous academic culture. They provide girls with a socially and physically safe environment to work toward ambitious academic goals. Time is proving how these schools can dramatically change the life script of many students.

Despite claims to the contrary, the single-sex factor is key to the impressive results. Because these schools implicitly and explicitly recognize gender, they provide an opportunity for students to reflect on and openly discuss the ways in which gender expectations can affect their personal and professional lives. They provide a safe haven for students to break out of gendered attitudes and

local rules to provide flexibility in management and operation. There currently are over 5000 public charter schools in forty-two states and the District of Columbia, serving more than two million students. *Charter Schools 101: The Most Frequently Asked Questions*, NAT’L ALLIANCE FOR PUB. CHARTER SCHOOLS, http://www.publiccharters.org/editor/files/Communications/Charter%20Schools%20101_2012.pdf (last visited Mar. 29, 2013).

²⁰⁸ David Banks, *Give Boys a Chance to Learn Alone*, DAILY NEWS (Feb. 27, 2013, 4:01 AM), <http://www.nydailynews.com/opinion/give-boys-chance-learn-article-1.1274135>.

²⁰⁹ Interview with Jonathan Foy, Principal, Bronx Eagle Acad. for Young Men, in New York City (Dec. 21, 2011).

²¹⁰ *Results: The Eagle Academy Model Works*, EAGLE ACAD. FOUND., <http://eagleacademyfoundation.com/results.htm> (last visited Mar. 29, 2013).

behavior patterns and develop a broader range of sensibilities.²¹¹ When thoughtfully managed, they can even prove validating to students whose sexual identity falls outside of society's gendered norms. For the growing population of Muslim girls in the United States, they offer an option, acceptable to their families, for schooling within the cultural mainstream, thereby exposing them to more-widely shared values and high academic expectations.

In my visits to all-girls' schools, students repeatedly have asserted that they feel a sense of sisterhood and revel in the traditions these schools create. They also feel more comfortable taking risks than they would if boys were present. Over the years, many of my law students who attended all-girls' schools have noted similar experiences. In all-boys' schools I have witnessed a room filled with middle-school students playing the violin; manly seventeen-year-old boys sitting on the floor in a hallway reading to little six-year-olds; a twelve-year-old boy with learning disabilities reading aloud with difficulty but determination, without a visible hint of discomfort. Such encounters, unlikely in the typical coed school, speak to the emotional security and lack of gender bounds that many pre-teens and adolescents experience in single-sex programs. And so, even though the data on short-term academic achievement remain inconclusive, the possibility that these programs may expand students' intellectual horizons in nontraditional directions is worth further exploration. One can reasonably speculate that these short-term benefits could eventually translate into more longstanding academic, personal, and professional gains. Only time, thoughtful research, and the evolution of reasonable single-sex programs will tell.

For some students, the critical point may be the early grades, when maturational differences and social stereotypes lead some students to believe they are not programmed to succeed in certain subjects. As data demonstrate, far too many boys lose motivation and give up, or are misidentified as having learning disabilities.²¹² For others, the critical point may be the middle or secondary school years, when social pressures inhibit some students from succeeding academically or finding a constructive source for developing a positive sense of self. Sociologist James Coleman's observations on the "cruel jungle of rating and dating" in many coed high schools five decades ago still resonate today.²¹³ As one coed college student notes of her all-girls high

²¹¹ See, e.g., Letter from Katherine G. Windsor, Head of School, Miss Porter's School, to Miss Porter's School Community (June 2, 2012) (on file with author); see also Ann V. Klotz & Lisa Damour, *Laurel School Response to 'Pseudoscience of Single-Sex Schooling,'* PLAIN DEALER (Oct. 22, 2011, 3:55 AM), http://www.cleveland.com/opinion/index.ssf/2011/10/laurel_school_response_to_pseu.html.

²¹² *Attention-Deficit/Hyperactivity Disorder (ADHD)*, CENTERS FOR DISEASE CONTROL, <http://www.cdc.gov/ncbddd/adhd/data.html> (last updated Dec. 12, 2011) (observing that boys were more likely than girls to have been diagnosed with ADHD).

²¹³ JAMES S. COLEMAN, *THE ADOLESCENT SOCIETY: THE SOCIAL LIFE OF THE TEENAGER AND ITS IMPACT ON EDUCATION* 51 (1961).

school, “There, I wasn’t a girl who was good at math; I was just good at math.”²¹⁴ She vividly contrasts her experience with that portrayed in the 2004 film, *Mean Girls* where we hear actress Lindsay Lohan’s voiceover recounting her character’s encounter with the “dim but studly” Aaron Samuels.²¹⁵ “On October 3rd, he asked me what day it was.” From that point, we see the narrator transform from “math whiz to stereotypical dumb girl” merely to keep his attention.²¹⁶

In privileged communities, and within certain ethnic and racial groups, the high value that families and peers place on academic achievement and college placement, especially for high-performing students, tempers to some degree the social distraction and pervasive anti-academic values of youth culture. Those mitigating factors gradually dissipate as we progressively descend the socioeconomic ladder toward the urban and rural poor.²¹⁷

That is not to suggest that single-sex programs should rest solely on sociological studies or anecdotal reports and observations. Critics are correct in calling for more empirical support. Yet informal findings should not be summarily dismissed. While certainly only tentatively suggestive, they prove useful in formulating hypotheses and defining realistic objectives for studies that compare the effects of single-sex and coed programs among similarly situated student populations. They help identify possible outcomes, beyond achievement test scores, that researchers should examine. More fundamentally, they underscore that before drawing conclusions from media reports and research findings, critics, commentators, and the general public must be careful to distinguish between programs that empower students, which receive scant attention in the press, and those that are repeatedly portrayed, albeit justifiably, as reinforcing outdated social constraints based on gender.

B. *Race, Ethnicity, and Social Class*

Demands to erase single-sex programs from public schooling further obscure the positive effects for particular groups of students in certain social and economic environments. Such unbending opposition allows no room to consider the range of current and potential populations, from privileged students in elite private schools to underprivileged minority students in urban public schools, from inner-city minority poor to rural white poor, whether girls or boys. Most pointedly, it overlooks the intersection of race, ethnicity, social class, and their combined impact on academic performance. And while commentators continue to remind us of the “boy crisis,” the most compelling

²¹⁴ Leigh Finnegan, *Carrying On: Single-Sex Schools Are So Fetch*, GEORGETOWN VOICE (Dec. 6, 2012), <http://georgetownvoice.com/2012/12/06/carrying-on-single-sex-schools-are-so-fetch/>.

²¹⁵ *Id.* (citing MEAN GIRLS, SNL Studios 2004).

²¹⁶ *Id.* (citing MEAN GIRLS, SNL Studios 2004).

²¹⁷ SALOMONE, *supra* note 12, at 200.

crisis is one of longstanding inequalities among low-income children across race and gender and especially among blacks and Latinos.

The data speak for themselves. In 2011 the gap in eighth grade National Assessment of Educational Progress (NAEP) mathematics scores between white students, and Latino and black students, was twenty-three and thirty-one points respectively.²¹⁸ For eighth-grade reading, it was twenty-two and twenty-five points, respectively.²¹⁹ In the 2010-2011 school year, white students scored 108 points higher than black students on the math section of the SAT and sixty-nine points higher than Mexican Americans.²²⁰ In 2011, 19.4% of black youth and 18.4% of Latino youth, as compared with 12.3% of whites, were neither enrolled in school nor working.²²¹ In 2011 the female dropout rate was 6.4% for black students and 12.4% for Latinos as compared to 4.6% for whites. For males, it was 8.3 %, 14.6 %, and 5.4 %, respectively.²²² And while the minority dropout rate is alarming, the “pushout” rate is equally troubling. Black students are three times as likely as whites to be suspended.²²³ In school districts like Pontiac, Michigan, 67.5% of black students have been suspended at least once.²²⁴ In Pasadena, Texas, that figure rises to 77% for Latino students.²²⁵ And while the rate of teen childbearing is the lowest recorded in

²¹⁸ *Table 144: Average National Assessment of Educational Progress (NAEP) Mathematics Scale Score, by Grade and Selected Student and School Characteristics: Selected Years, 1990 Through 2011*, NAT'L CENTER FOR EDUC. STAT., http://nces.ed.gov/programs/digest/d12/tables/dt12_144.asp (last visited Mar. 29, 2013).

²¹⁹ *Table 127: Average National Assessment of Educational Progress (NAEP) Reading Scale Score, by Grade and Selected Student and School Characteristics: Selected Years, 1992 Through 2011*, NAT'L CENTER FOR EDUC. STAT., http://nces.ed.gov/programs/digest/d12/tables/dt12_127.asp (last visited Mar. 29, 2013).

²²⁰ *Table 153: SAT Mean Scores of College-Bound Seniors, by Race/Ethnicity: Selected Years, 1986-87 Through 2010-11*, NAT'L CENTER FOR EDUC. STAT., http://nces.ed.gov/programs/digest/d11/tables/dt11_153.asp (last visited Mar. 29, 2013) [hereinafter *SAT Mean Scores of College-Bound Seniors*].

²²¹ *Table A-29-1. Percentage of Youth Ages 16-24 Who Were Neither Enrolled in School nor Working, by Selected Characteristics: Selected Years, 1990-2011*, NAT'L CENTER FOR EDUC. STAT., <http://nces.ed.gov/programs/coe/tables/table-yew-1.asp> (last visited Mar. 29, 2013) [hereinafter *Youth Neither Enrolled in School nor Working*].

²²² *Table 116: Percentage of High School Dropouts Among Persons 16 Through 24 Years Old (Status Dropout Rate), by Sex and Race/Ethnicity: Selected Years, 1960 Through 2011*, NAT'L CENTER FOR EDUC. STAT., http://nces.ed.gov/programs/digest/d12/tables/dt12_116.asp (last visited Mar. 29, 2013) [hereinafter *High School Dropouts*].

²²³ DANIEL J. LOSEN & JONATHAN GILLESPIE, CTR. FOR CIVIL RIGHTS REMEDIES, OPPORTUNITIES SUSPENDED: THE DISPARATE IMPACT OF DISCIPLINARY EXCLUSION FROM SCHOOL 6 (2012).

²²⁴ *Id.* at 7.

²²⁵ SCHOTT FOUND. FOR PUB. EDUC., THE URGENCY OF NOW: THE SCHOTT 50 STATE REPORT ON PUBLIC EDUCATION AND BLACK MALES 32 (2012).

more than seven decades, the birth rate for black and Latina young women is still more than twice that for whites.²²⁶

The situation for racial-minority males is especially alarming. As political scientist David Kirp has observed, the performance gap between black and Latino males and their white peers “is perceptible from the first day of kindergarten, and only widens thereafter.”²²⁷ In the 2009-2010 school year, the high school graduation rate for black male students nationwide was 52% and for Latinos 58%, as compared to 78% for their white, non-Latino counterparts.²²⁸ In Philadelphia the figure for black males was as low as 24% and in New York City as low as 28%.²²⁹ And though the graduation rates for both black and Latino students continue to rise, the gap with the white population has narrowed by only three percentage points in the past nine years.²³⁰ At that pace, black males will not reach the same high school graduation rates as white males for nearly fifty years.²³¹ Meanwhile, Latino males are more likely to drop out of high school than males of any other ethnic group.²³² The highest rates are among foreign-born Salvadorans (41.1%) and Mexicans (38.8%), as compared with those of black and white males (12% and 7%, respectively).²³³ Given the current and projected rise in the Latino population, these figures are indeed cause for concern.

As compelling as these numbers are, however, the problem is not simply one of race but also of poverty, both independently and as it intersects with race. Reducing the racial and economic gaps in academic achievement has moved at a snail’s pace despite a host of reform strategies, including reduced class size, smaller schools, expanded early childhood programs, more rigorous academic standards, and stepped-up accountability through testing. Admittedly, 37% of black and 34% of Latino children nationwide live in poverty as compared to 12% of whites.²³⁴ Yet there is still a sizeable population of poor whites, mainly living in rural areas where schools are inadequately resourced. Among the poor, 27.4% of young people were neither enrolled in school nor working in 2011 as compared with 11% of the non-

²²⁶ Brady E. Hamilton et al., *Births: Preliminary Data for 2011*, NAT’L VITAL STAT. REP., Oct. 3, 2012, at 1, 1 fig.1.

²²⁷ David L. Kirp, *The Widest Achievement Gap*, 5 NAT’L AFF. 54, 55 (2010).

²²⁸ SCHOTT FOUND. FOR PUB. EDUC., *supra* note 225, at 7, 13, 19.

²²⁹ *Id.* at 17 tbl.6.

²³⁰ *Id.* at 7.

²³¹ *Id.*

²³² *High School Dropouts*, *supra* note 222.

²³³ JOHN MICHAEL LEE JR. & TAFAYA RANSOM, COLL. BOARD ADVOCACY & POLICY CTR., *THE EDUCATIONAL EXPERIENCE OF YOUNG MEN OF COLOR: A REVIEW OF RESEARCH, PATHWAYS AND PROGRESS* 18 fig.7, 20 tbl.1 (2011).

²³⁴ *Figure 7-2: Percentage of 5- to 17-Year-Olds Who Were Living in Poor Households, by Race/Ethnicity: 2006 and 2011*, NAT’L CENTER FOR EDUC. STAT., <http://nces.ed.gov/programs/coe/figures/figure-fch-2.asp> (last visited Mar. 29, 2013).

poor.²³⁵ The gap in eighth-grade scores between students attending low-poverty and high-poverty schools was thirty-six points in math²³⁶ and thirty-two points in reading,²³⁷ even higher than score gaps between whites and racial minorities.

The problem is not unique to the United States. Countries across the developed world show similar correlations between student achievement and family background as measured by economic, cultural, and social factors. Among the fifteen countries with “high performing” education programs that participated in the 2009 PISA, test scores for students in the fifth economic, cultural, and social percentile were approximately 350 as compared with an average of approximately 660 for students in the ninety-fifth percentile.²³⁸

The obvious question is whether separating students by sex is the most effective way to remedy these disparities in school outcomes, and to overcome the societal and institutional factors that have caused them. Some school districts, parents, and charter school organizers apparently believe so. Proponents of single-sex schools in particular have focused their attention on the continuing achievement gap between white students on the one hand and black and Latino students on the other. Cities like New York, Chicago, Philadelphia, Dallas, and more recently Boston and Newark, have turned to separate schooling as a means to address the key indicators and causes of academic failure and thereby close that divide. Most of these schools are designed to address academic and social problems among minority students in the general school-district population rather than focusing on a specific school community or neighborhood. These schools typically expect some degree of parental involvement, which enhances the chances of success. Leaders within the black community have risen to the charge, viewing these schools as a “call to action.”²³⁹ The New York chapter of 100 Black Men, Inc., for example, has actively supported the Eagle Academy for Young Men in New York.²⁴⁰

In addition to these new initiatives, some school districts have embraced single-sex schooling in an effort to “turn around” existing unsuccessful schools in disadvantaged communities. The ongoing controversy in Austin, Texas, over the decision to convert two failing coed middle schools into single-sex

²³⁵ *Youth Neither Enrolled in School nor Working*, *supra* note 221.

²³⁶ *SAT Mean Scores of College-Bound Seniors*, *supra* note 220.

²³⁷ *Youth Neither Enrolled in School nor Working*, *supra* note 221.

²³⁸ OECD, PISA 2009 RESULTS: OVERCOMING SOCIAL BACKGROUND – EQUITY IN LEARNING OPPORTUNITIES AND OUTCOMES 28 fig.II.I.1 (2010); *see also* Helen F. Ladd, *Education and Poverty: Confronting the Evidence*, 31 J. POL’Y ANALYSIS & MGMT. 203, 208-09 (2012).

²³⁹ Lynda Richardson, *For Principal, New Boys’ School Is a Call to Action*, N.Y. TIMES, Sept. 23, 2004, at B4 (quoting David Banks, founding principal of the Eagle Academy for Young Men in New York City).

²⁴⁰ *Id.*

schools, one for boys and the other for girls, is a clear case in point.²⁴¹ In support of the project, school board and community members, including representatives from the local NAACP and League of United Latin American Citizens chapters, have publicly raised concerns over disciplinary problems among boys and high pregnancy rates among girls in the two schools.²⁴²

The idea that single-sex schools may prove especially effective for minority students draws on a series of early studies, using large datasets, conducted by sociologist Cornelius Riordan, who also served as the Principal Investigator on the 2005 U.S. Department of Education study.²⁴³ Though the findings are now several decades old and gathered from Catholic schools, they still prove useful in underscoring the importance of looking at specific student populations and institutional factors. Riordan found that the effects of single-sex education fell within a hierarchy of low-status characteristics (female, racial minority, and low socioeconomic status).²⁴⁴ He found the greatest positive effects among African American and Latina females from low socioeconomic homes, slightly lower effects among African American and Latino males from low socioeconomic homes, smaller effects still for white middle-class females, and virtually no differential effects among white males or affluent students.²⁴⁵

Riordan acknowledges that certain organizational features, including small class size and a strong academic curriculum, contributed to the academic success of the single-sex schools he studied.²⁴⁶ Yet these features do not fully explain the differences he observed. According to Riordan, these schools shared elements that flowed out of school type itself, which made them work best for historically disadvantaged students. These elements included positive role models (especially important for young minority males), leadership opportunities, diminished youth-culture values, and an affirmative pro-academic parent/student choice.²⁴⁷ Perhaps, he posits, low-status students are more receptive to school effects.²⁴⁸ It also could be the case that single-sex schools are more empowering for these students than for those whose families

²⁴¹ Kelli Weldon, *Single-Sex Schools Approved for Austin ISD*, COMMUNITY IMPACT NEWSPAPER (Jan. 29, 2013), <http://impactnews.com/articles/single-sex-schools-on-the-horiz-on-for-austin-isd/>.

²⁴² Laura Heinauer, *Opening Likely Delayed for Possible Single-Sex Schools*, STATESMAN (Aug. 15, 2012, 9:50 PM), <http://www.statesman.com/news/news/local/opening-likely-delayed-for-possible-single-sex-sch/nRNXC/>; see also Telephone Interview with Gavino Fernandez, Deputy Dir., Dist. 12 League of United Latin Am. Citizens (Aug. 15, 2012).

²⁴³ See, e.g., Cornelius Riordan, *Single-Gender Schools: Outcomes for African and Hispanic Americans*, 10 RES. SOC. EDUC. & SOCIALIZATION 177 (1994).

²⁴⁴ *Id.* at 201.

²⁴⁵ *Id.*

²⁴⁶ *Id.* at 200.

²⁴⁷ *Id.* at 181-86.

²⁴⁸ *Id.* at 201.

are already empowered socially and economically. Riordan concludes that the approach may bear significant consequences for students who are “historically or traditionally disadvantaged – minorities and/or lower-class and working-class youth (students at risk).”²⁴⁹

Several more-recent studies have drawn similar conclusions. The first, from the United States, followed a representative sample of eighth graders over a twelve-year period.²⁵⁰ Using a national dataset from the National Center for Education Statistics, the study found unique gains for African American and low-income students across a range of education and labor market outcomes.²⁵¹ Two studies from England similarly found that students with the poorest prior academic performance derived the greatest benefits from single-sex schools.²⁵²

An ethnographic study conducted between 1998 and 2000 of California’s experimental single-sex academies, which primarily served low-income and minority students, proves particularly interesting on several counts.²⁵³ While opponents of single-sex education typically cite the project for the proposition that single-sex programs promote gender stereotypes, they ignore the more supportive conclusions drawn. According to the researchers, the program “freed” students from the “distractions of the other gender,” thus enabling them to “focus on their lessons in a new and more meaningful way” and engage in “more intimate and open conversations with peers and teachers.”²⁵⁴ They attribute these positive experiences to “three important, interrelated conditions[.] . . . the single-sex setting, financial support from the state, and the presence of caring, proactive teachers.”²⁵⁵ That, rather than the much-cited gender stereotyping which adequate program planning and staff development could have averted, should be the significant takeaway from this study. And, as the researchers point out, the study further underscores the value of qualitative ethnographic research in defining the limits and possibilities of single-sex schooling, especially for at-risk students.²⁵⁶

²⁴⁹ Cornelius Riordan, *What Do We Know About the Effects of Single-Sex Schools in the Private Sector?: Implications for Public Schools*, in GENDER IN POLICY AND PRACTICE: PERSPECTIVES ON SINGLE-SEX AND COEDUCATIONAL SCHOOLING, *supra* note 51, at 10, 14.

²⁵⁰ SHERRILYN M. BILLGER, INST. FOR THE STUDY OF LABOR, IZA DP No. 2037, RECONSTRUCTING SCHOOL SEGREGATION: ON THE EFFICACY AND EQUITY OF SINGLE-SEX SCHOOLING 4 (2006).

²⁵¹ *Id.* at 1.

²⁵² THOMAS SPIELHOFER ET AL., NAT’L FOUND. FOR EDUC. RESEARCH, THE IMPACT OF SCHOOL SIZE AND SINGLE-SEX EDUCATION ON PERFORMANCE 33 (2002); Eva Malacova, *Effect of Single-Sex Education on Progress in GCSE*, 33 OXFORD REV. EDUC. 233, 253 (2007).

²⁵³ Lea Hubbard & Amanda Datnow, *Do Single-Sex Schools Improve the Education of Low-Income and Minority Students? An Investigation of California’s Public Single-Gender Academies*, 36 ANTHROPOLOGY & EDUC. Q. 115, 115 (2005).

²⁵⁴ *Id.* at 127.

²⁵⁵ *Id.* at 127-28.

²⁵⁶ *Id.* at 117.

C. *Thinking Globally*

The debate over single-sex schooling, as vigorously played out in the American press, blogosphere, and scholarly journals, is not merely myopic on the domestic front. The debate also falls short in global perspective. Failing to recognize the claims advanced as part of a discourse transcending national borders, it underestimates the power of social media and the influence that American ideas inevitably have on those abroad. More specifically, it fails to address how cultural, religious, and political differences color overall attitudes and underlying justifications for separate schooling, and consequently affect policies as well as education outcomes and lifelong opportunities.

That is not to suggest that the information flow has been one-directional or that developments abroad have played no role in the national debate. While both sides necessarily frame their arguments in legal terms that address American laws, regulations, and traditions, their policy arguments rely in part on an international array of research findings and reviews, as the *Science* article demonstrates. That reliance is understandable given the richer tradition of single-sex schooling in other countries. Researchers at times point out the demographic and cultural limitations of these studies. Yet neither the producers nor the consumers make much, if any, effort to mine those differences and better understand the conditions under which single-sex programs might be more or less academically effective, politically feasible, or even essential to educational equity.

Meanwhile, developments in the United States and the sharp disagreements they have engendered continue to shape the discussion across the globe. Scholars, advocates, and journalists worldwide take explicit note of American scholarship, legal reforms, and the general course of events. The international media attention given the *Science* article was clear evidence of that influence.²⁵⁷ On the positive side, as the various members of this global audience deconstruct the ongoing drama, they invariably note the 2002 No Child Left Behind Act and the 2006 Title IX regulations that have given rise to the resurgence of single-sex programs in America. They maintain a running count of the number of single-sex programs in the United States and praise the remarkable success of the Young Women's Leadership School in East Harlem. They invoke former Senator Hillary Rodham Clinton's sponsorship of the legislative changes, placing a progressive imprimatur on an idea that opponents charge as being socially regressive.

This transnational engagement, unfortunately, has borne some negative consequences. Most emphatically, the comparatively larger numbers of single-sex schools in certain English-speaking countries have provided a ready

²⁵⁷ See, e.g., *2012-09-05 Single Sex Education*, CHINA RADIO INT'L (Sept. 5, 2012, 2:04 PM), <http://english.cri.cn/8706/2012/09/05/2861s720772.htm> (broadcasting from Beijing but reaching audiences in China, Australia, New Zealand, Canada, and cities across the United States); see also *supra* note 2 (listing news reports from abroad discussing the *Science* article).

market for teacher training workshops led by American brain-science experts reinforcing stereotypical views on how girls and boys learn and how they should be taught.²⁵⁸ Reining in those attitudes and practices is obviously more difficult than in the United States where court challenges have put public school officials on notice of the legal constraints and risks involved.

The idea of thinking globally on single-sex schooling necessarily raises a number of nation-specific questions. Differences in female-male relationships, societal values, religious beliefs, and childrearing and educational practices across countries not only influence policy choices but may also bias educational outcomes in one direction or the other. In the case of South Korea, for example, Confucian principles of female subordination may explain the prevalence and advantages of separate schools for girls, though those principles admittedly do not explain the advantages for boys.²⁵⁹ In the Philippines single-sex schools are remnants of Spanish friars who arrived in the 1500s.²⁶⁰ Intimately tied to a conservative strand of Roman Catholicism, such schools reinforce traditional views and life options for women. Though they are slowly declining in number, those that remain operate mainly as private, expensive institutions serving the elite, thereby preserving both class and, to some extent, gender hierarchy.²⁶¹

In countries that have a long history of single-sex schools, especially in the private sector (such as England, Ireland, New Zealand, and Australia), the approach remains more common and acceptable. And so the change to coeducation, while steady, has been more gradual. Within these countries in particular, separate schooling has sparked increased public attention, driven in part by press reports from the United States but more directly by the perceived “boy crisis” which has become of grave concern across the developed world.²⁶²

²⁵⁸ See e.g., Alison Lawson, *Teach Boys and Girls Separately, Expert to Argue at Kilgarston Seminar*, PERTSHIRE ADVERTISER (Feb. 26, 2013), <http://www.perthshireadvertiser.co.uk/perthshire-news/local-news-perthshire/perthshire/2013/02/26/teach-boys-and-girls-separately-expert-to-argue-at-kilgraston-seminar-73103-32878342/> (citing statements made at a girls-school seminar in Scotland by Dr. Leonard Sax supporting sex-based learning differences tied to brain development).

²⁵⁹ Julia Bass, *Confessions of a Korean English Teacher: All-Girls Schools Work*, POLICYMIC, <http://www.policymic.com/articles/10843/confessions-of-a-korean-english-teacher-all-girls-schools-work> (last visited Mar. 29, 2013).

²⁶⁰ Venus Ma. Rivera Salangang, *Single-Sex Education*, MANILA BULL., Aug. 18, 2012, <http://ph.news.yahoo.com/single-sex-education-113746893.html>.

²⁶¹ *Id.*

²⁶² See MICHAEL KIMMEL, BOYS AND SCHOOL: A BACKGROUND PAPER ON THE “BOY CRISIS” 8 (2010); see also PAUL CAPPON, CANADIAN COUNCIL ON LEARNING, EXPLORING THE “BOY CRISIS” IN EDUCATION 1 (2011); Jean-Louis Auduc, *Filles et garçons dans le système éducatif français. Une fracture sexuée [Boys and Girls in the French Educational System. A Sexual Divide]*, CAFÉ PÉDAGOGIQUE (Mar. 13, 2007), <http://www.cafepedagogique.net/lexpresso/Pages/130307FillesetgarconsSystEducFr.aspx>; Charles Hawley, *Do We Need Men’s Lib?: Berlin Conference Addresses Male Troubles*, SPIEGEL ONLINE (Oct. 19, 2012, 4:48

Yet within public schools, it has not given rise to the organized pushback or judicial intervention that legal mandates on sex equality and the legacy of racial segregation have provoked in the United States.

As for Europe in general, coeducation is by far the socially and politically accepted norm. As of 2009 public single-sex schools could be found in only seven countries and regions.²⁶³ Where they did exist, they varied widely in number, with only 1 in Scotland, 7 in Wales, 25 in Malta, 77 in Northern Ireland, 120 in the Irish Republic, and more than 400 in England.²⁶⁴ Greece was unique with 27 public ecclesiastical schools, all reserved for boys.²⁶⁵ And while private single-sex schools can be found in almost all European countries, funded either by public subsidies or completely independent, they tend to be affiliated with the Catholic, Protestant, or, less frequently, Islamic faiths.²⁶⁶ Only the United Kingdom and Denmark officially report that single-sex programs are related to reducing underachievement and behavioral problems.²⁶⁷

Overall, the overwhelming preference for coeducation is partially a matter of gender equity and partially based on political and cultural motives rooted in each nation's history. And so the question of single-sex schooling varies in its ability to rouse controversy, eliciting somewhat different responses and alignments than the debate now raging in the United States. A look at several other European countries gives context to those distinctions.

In the former German Democratic Republic, for example, coed schools were introduced following World War II as a reaction to Nazism and its program of separate-sex schooling.²⁶⁸ Arguments supporting such schools, based on innate biological differences, still understandably evoke painful memories of that era. Some areas have been unswerving in their opposition. Others have been more receptive. The highly decentralized German education system, as compared to

PM), <http://www.spiegel.de/international/germany/-german-government-to-sponsor-conference-on-men-s-issues-in-berlin-a-862294.html>; Graeme Paton, *Girls Outperforming Boys in "Masculine" Subjects*, TELEGRAPH (July 5, 2012, 12:01 AM), <http://www.telegraph.co.uk/education/educationnews/9376466/Girls-outperforming-boys-in-masculine-subjects.html>; Lin Qi, *Boys Will Be Boys?* CHINA DAILY (Apr. 7, 2010, 9:47 AM), http://www.chinadaily.com.cn/life/2010-04/07/content_9695031.htm.

²⁶³ EDUC., AUDIOVISUAL & CULTURE EXEC. AGENCY, EUROPEAN COMM'N, GENDER DIFFERENCES IN EDUCATIONAL OUTCOMES: STUDY ON THE MEASURES TAKEN AND THE CURRENT SITUATION IN EUROPE 85 (2010), available at http://www.eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/120EN.pdf.

²⁶⁴ *Id.*

²⁶⁵ *Id.*

²⁶⁶ *Id.* at 87.

²⁶⁷ *Id.* at 3.

²⁶⁸ Doris Lemmermöhle, *Persönlichkeitsentwicklung und Geschlecht: Ziele und Ansatzpunkte Einer geschlechterbewußten Mädchen- und Jugendbildung* [*Personality Development and Gender: Goals and Approaches of a Gender-Conscious Girl and Youth Education*], 88 DIE DEUTSCHE SCHULE 192 (1996).

its more-centralized counterparts in Europe, has permitted the sixteen Länder (states) to voluntarily experiment with separate programs.

A recent decision from the sixth High Administrative Court, however, appears to constrain that discretion, at least with regard to private schools.²⁶⁹ In a highly contested six-year controversy, the presiding judge affirmed the lower courts in overturning the Brandenburg Minister of Education's decision denying the application of a Catholic group to open an all-boys' school in Potsdam. In the Minister's view, separate schooling ran counter to equality of the sexes founded in the German Basic Law.²⁷⁰ According to the judge, however, the constitutionally and otherwise-guaranteed freedoms (in the development of private schools) provide them with the option to introduce a single-sex education structure.²⁷¹ Private schools have the authority to choose their methodology and organizational form even if considered controversial by pedagogical experts, the judge noted. Those choices need not be based on scientific proof.²⁷² The decision could have significant economic consequences, as the German government now assumes seventy-eight percent of the expenses for private schooling.²⁷³

Spain presents a different set of contextual factors. There is no argument about the acceptance of single-sex schooling as a general matter. The real issue is whether private, religiously affiliated schools that receive public funds may separate students by sex. On that count, single-sex schooling conjures up memories of the Spanish Civil War and the Franco regime, which was aligned with the Catholic Church and imposed separate schools throughout the country.²⁷⁴ In 1970 the government surprisingly adopted sweeping education legislation that tacitly approved coeducation.²⁷⁵ Though the law is silent on single-sex or mixed schooling, it makes reference to the right of "all Spaniards" to receive a "general education" and to the "principle of equality of opportunities."²⁷⁶ Franco was still in power so perhaps the law's drafters did

²⁶⁹ Bundesverwaltungsgericht [BVerwG] [Federal Administrative Court] Jan. 30, 2013 (Ger.), available at <http://www.bverwg.de/entscheidungen/pdf/300113U6C6.12.0.pdf>.

²⁷⁰ Article 3 of the *Basic Law* provides: "All persons shall be equal before the law." GRUNDGESETZ FÜR DIE BUNDESREPUBLIK DEUTSCHLAND [GRUNDGESETZ] [GG] [BASIC LAW], May 23, 1949, BGBl. I art. 3 (Ger.).

²⁷¹ Bundesverwaltungsgericht [BVerwG] Jan. 30, 2013, at 3.

²⁷² *Id.* at 28.

²⁷³ José M. García Pelegrín, *La educación diferenciada no se opone al principio de igualdad* [Single-Sex Education Does Not Contradict the Principle of Equality], ACEPRENSA (Feb. 4, 2013), <http://www.aceprensa.com/articles/la-educacion-diferenciada-no-se-opone-al-principio-de-igualdad/>.

²⁷⁴ María Calvo, *La educación diferenciada. Un modelo educativo para una sociedad plural* [Single-Sex Education. A Model for a Plural Society], in *DIFERENTES, IGUALES ¿JUNTOS?: EDUCACIÓN DIFERENCIADA* [DIFFERENT, EQUAL, TOGETHER?: SINGLE-SEX EDUCATION] 189, 194 (Enric Vidal ed., 2006).

²⁷⁵ Law on Education and Financing of Educational Reform (B.O.E. 1970, 14) (Spain).

²⁷⁶ *Id.* art. 2.

not feel free to include clear language on the issue. In the 1980s, and without any debate, the first socialist government since the country's return to democracy made coed schooling mandatory for state-run schools as well as for private schools that receive government funds.²⁷⁷ Most Catholic schools, traditionally single sex, adopted a coeducation model at that time, though some opted to remain separate and forgo public funding.²⁷⁸ Nonetheless, a move in the early 2000s to declare private single-sex schools discriminatory was voted down by the State Council for Education, thus leaving the matter to private choice.²⁷⁹ A crucial legal provision is the Organic Law of Education, adopted in 2006, which declared, "In no case will there be discrimination for reasons of birth, race, gender, religion, opinions or any other personal or social condition or circumstance."²⁸⁰

Today, of the 5000 state-funded private schools, only seventy separate students by sex and most of these follow very conservative Catholic principles.²⁸¹ The approach is highly politicized. Efforts to allow public funds for these schools inevitably meet sharp resistance. In recent years a number of the seventeen autonomous regions, including Andalusia and Asturias, have moved to terminate funding for single-sex schools. Parents, however, argue that lack of access to publicly financed single-sex schools limits their freedom.

Most recently, the Administrative Law Chamber of the Supreme Court held that the 2006 Organic Law does not prohibit single-sex schools but that such schools have no right to receive government financing.²⁸² In response to the ruling, the conservative government's Ministry of Education approved a rule guaranteeing that single-sex schools may receive public funds. The Administration has further drafted a proposed amendment to the Organic Law²⁸³ that would declare single-sex schools non-discriminatory if they accord

²⁷⁷ Calvo, *supra* note 274, at 194.

²⁷⁸ José Maria Barrio Maestre, *L'ideologia coeducativa [The Ideology of Coeducation]*, in *MASCHI E FEMMINE A SCUOLA: LE DIFFERENZE DI GENERE IN EDUCAZIONE [MALES AND FEMALES IN SCHOOL: GENDER DIFFERENCES IN EDUCATION]* 82, 96 (Giuseppe Zanniello ed., 2007).

²⁷⁹ *Momentum Picks Up for Single-Sex Schools*, ZENIT (Jan. 22, 2002), <http://www.zenit.org/article-17245?1=english>.

²⁸⁰ LEY ORGÁNICA DE EDUCACIÓN (Organic Law of Education) art. 84, para. 3 (2006), translation available at http://planipolis.iiep.unesco.org/upload/Spain/Spain_LOE_eng.pdf.

²⁸¹ Manuel Plannelles, *Andalusia Defies Madrid by Cutting Funds for Single-Sex Schools*, EL PAIS (Feb. 17, 2013, 3:04 PM), http://elpais.com/elpais/2013/02/17/inenglish/1361109773_645812.html.

²⁸² S.T.S., Jan. 15, 2013 (R.O.J., No. 45) (Spain); available at <http://www.poderjudicial.es/search/doAction?action=contentpdf&database=TS&reference=6611785&links=&optimiz=20130128&publicinterface=true>.

²⁸³ Anteproyecto de ley orgánica para la mejora de la calidad educativa [Draft Bill of Organic Law for the Improvement of Quality in Education], Dec. 3, 2012, available at <http://educacioniucm.files.wordpress.com/2012/12/20121203-anteproyecto-lomce.pdf>; Email from Maria Calvo Charro, Professor, Universidad Carlos III de Madrid, to Rosemary

with the 1960 UNESCO Convention Against Discrimination in Education.²⁸⁴ While article 1 of the Convention prohibits discrimination on the basis of sex in access to education,²⁸⁵ article 2 declares that single-sex schools are not a prohibited form of sex discrimination so long as they meet certain equality standards in providing educational services and benefits.²⁸⁶ Yet that will not put the issue to rest. Allowing single-sex schools to exist is one matter. Declaring a right to state-funded single-sex education, whether in public or private schools, is a far more politically controversial matter. The constitutional court has never ruled on that question.

France provides yet another interesting perspective on the interplay of social and political contexts, especially in contrast to the United States. As in other western European countries, coeducation in France was progressively introduced for practical and economic reasons. Initially adopted in rural areas with small student populations, it spread more rapidly after World War II as the country struggled first to rebuild towns and cities left devastated by the bombings, and later to accommodate the post-war “baby boom.”²⁸⁷ Education reforms in the early to mid-1960s called for coeducation in all newly constructed primary and secondary schools. The women’s movement and the 1968 push for equality gave those reforms an ideological boost.²⁸⁸ Following the legislative adoption in 1975 of what has come to be known as “la loi Haby,” named after the then Minister of Education René Haby,²⁸⁹ decrees

Salomone, Professor of Law, St. John’s University School of Law (Mar. 7, 2013) (on file with author).

²⁸⁴ UNESCO Convention Against Discrimination in Education, Dec. 15, 1960, 493 U.N.T.S. 93.

²⁸⁵ Article 1 of the Convention states:

For the purposes of this Convention, the term “discrimination” includes any distinction, exclusion, limitation or preference which, being based on . . . sex . . . , has the purpose or effect of nullifying or impairing equality of treatment in education and in particular:

(a) Of depriving any person or group of persons of access to education of any type or at any level . . .

Id. art. 1(1)(a).

²⁸⁶ Article 2 of the Convention states that, “[t]he establishment or maintenance of separate educational systems or institutions for pupils of the two sexes” will not be deemed to constitute discrimination as prohibited in article 1 if such systems meet certain standards regarding access, teacher qualifications, facilities, equipment, and the “opportunity to take the same or equivalent courses of study.” *Id.* art. 2(a).

²⁸⁷ Geneviève Pezeu, *Une histoire de la mixité* [*A History of Coeducation*], CAHIERS PÉDAGOGIQUES (Feb. 2011), <http://www.cahiers-pedagogiques.com/Une-histoire-de-la-mixite.html>.

²⁸⁸ Claude Zaidman, *Mixité scolaire, mixité sociale ? Les résistances à la mixité* [*Coeducation, Social Diversity? Resistances to Coeducation*], in ÉGALITÉ ENTRE LES SEXES : MIXITÉ ET DÉMOCRATIE [EQUALITY BETWEEN THE SEXES: COEDUCATION AND DEMOCRACY] 76, 78 (Claudine Baudoux & Claude Zaidman eds., 1992).

²⁸⁹ Loi 75-620 du 11 juillet 1975 relative à l’éducation [Law 75-620 of July 11, 1975 on Education], JOURNAL OFFICIEL DE LA RÉPUBLIQUE FRANÇAISE [J.O.] [OFFICIAL GAZETTE OF

issued in December of the following year made coeducation mandatory in all public and state-funded private schools.²⁹⁰ By that time coeducation was so widely accepted that the changes elicited barely any public reaction.²⁹¹

The issue seemingly lay dormant until 2003 when a book published by sociologist Michel Fize, *Les pièges de la mixité scolaire (Pitfalls of Coeducation)*, ignited a national debate leading to a report submitted to the French Senate.²⁹² Fize argued that coeducation offered neither gender equality nor equal opportunity.²⁹³ Presenting some of the same arguments then driving the discourse on single-sex schooling in the United States, the report fell flat. Most French saw this “wind blowing across the Atlantic” as a destabilizing force on republican ideals.²⁹⁴ As the magazine *L’Express* explained at the time, the idea of distinguishing students “offends [French] laïque and universalist values.”²⁹⁵ For the French, the comprehensive ideal of *laïcité*, or the secular state, tied to equal rights for all citizens, undergirds coeducation. In the “republican” school, students are individuals stripped of all “social characteristics,” including their sex and their religion.²⁹⁶

Despite such widely shared sentiments, in May 2008, with scarcely any attention in the press or response from teacher unions, the French legislature quietly took an unexpected step. Declaring that separating students according to sex “is not discriminatory,” lawmakers adopted a law allowing the separate grouping of students. Though they claimed to be following European Union directives on anti-discrimination policies, opponents saw the measure as an affront to republican ideals, accusing President Nicolas Sarkozy and his government of “softly” bowing to pressure from religious “fundamentalists,” following the model of U.S. President George W. Bush.²⁹⁷ The 2008 law has

FRANCE], July 12, 1975, p. 7180.

²⁹⁰ GISELE GAUTIER, RAPPORT D’ACTIVITÉ 2003: LA MIXITÉ MENACÉE? [ACTIVITY REPORT 2003: COEDUCATION UNDER THREAT?], SÉNAT RAPPORT NO. 263 [FRENCH SENATE REPORT NO. 263], at 38 (2004), available at <http://www.senat.fr/rap/r03-263/r03-2631.pdf>.

²⁹¹ Prisca Bachelet, *La fausse évidence de la mixité dans l’enseignement élémentaire et primaire [The Red Herring of Diversity in Elementary and Primary Education]*, in ÉGALITÉ ENTRE LES SEXES : MIXITÉ ET DÉMOCRATIE, *supra* note 288, at 31, 33.

²⁹² *Id.*

²⁹³ MICHEL FIZE, LES PIÈGES DE LA MIXITÉ SCOLAIRE [PITFALLS OF COEDUCATION] (2003).

²⁹⁴ Martine Fourmier, *Faut-il mettre fin à la mixité scolaire ? [Should We Put an End to Coeducation?]*, SCIENCES HUMAINES, http://www.scienceshumaines.com/faut-il-mettre-fin-a-la-mixite-scolaire_fr_3626.html (last updated June 15, 2011).

²⁹⁵ Claire Chartier, *Faut-il remettre en question la mixité ? [Should We Reassess Coeducation?]*, L’EXPRESS (Aug. 28, 2003), <http://www.lexpress.fr/outils/imprimer.asp?id=495472>.

²⁹⁶ CLAUDE ZAIDMAN, LA MIXITÉ À L’ÉCOLE PRIMAIRE [COEDUCATION IN PRIMARY SCHOOL] 11-12 (1996).

²⁹⁷ Chloé Leprince, *École : séparer filles et garçons, c’est de nouveau possible [School: It Is Again Possible to Separate Boys and Girls]*, RUE89 (May 19, 2008, 12:03 AM), <http://www.rue89.com/2008/05/19/ecole-separer-filles-et-garcons-cest-de-nouveau-possible>;

had no obvious effect on French schooling or on the course of the education debate. Yet the overall indifference and the faint but pointed opposition the law provoked made clear that challenging French coeducation remains almost “taboo,” grounded not only in a resolute commitment to formal equality but in fears of a religious challenge to the equally resolute commitment to *laïcité*.²⁹⁸

A recent five-year agreement signed by various ministers, including the Minister of Education and the Minister of Women’s Rights, underscores the country’s firm and comprehensive stand on equality. Though not directly addressing separate schooling, the agreement has clear implications in that regard. In words that both echo and go beyond Justice Ginsburg’s opinion in *United States v. Virginia*,²⁹⁹ the document makes clear that merely providing mixed education is not enough. All those involved in the process must consciously avoid perpetuating sex stereotypes based on outdated views on the capacities of either sex.³⁰⁰

In Italy, like France and, particularly, Spain, the question of single-sex schooling is tied in some degree to religion as well as to modern-day notions of gender equality. But here again, despite some commonalities, the political backdrop has produced a different dynamic. As elsewhere, coeducation within Italian public schools was initially a matter of economics as mass compulsory education spread in the mid- to late twentieth century. After compulsory education was extended to age fourteen in 1962, the mandate on coeducation the following year was a simple solution for accommodating considerably larger numbers of students. As elsewhere, ideals of gender equality, fostered in the women’s movement of the 1970s and beyond, later reinforced the concept of educating the sexes together.³⁰¹ And though the Minister of Education in 2002 dismissed the possibility of state-funded public or private single-sex education,³⁰² the legislature in 2007 adopted a directive on the “treatment of men and women” that expressly excludes public and private instruction from a

Sisyphe, *La fin de la mixité scolaire : le retour (en douce) du religieux* [*The End of Coeducation: The (Quiet) Return of Religion*], AGORAVOX (May 28, 2008), <http://www.agoravox.fr/actualites/societe/article/la-fin-de-la-mixite-scolaire-le-40395>.

²⁹⁸ *La mixité à l'école n'est pas un dogme* [*Coeducation Is Not a Dogma*], DIFERENCIADA.ORG (Oct. 21, 2003), http://www.diferenciada.org/section.php?id=33&id_element=295 (interview with Michel Fize).

²⁹⁹ 518 U.S. 515 (1996).

³⁰⁰ Convention interministérielle pour l'égalité entre les filles et les garçons, les femmes et les hommes dans le système éducatif 2013-2018 [Interdepartmental Agreement on Equality Between Girls and Boys, Men and Women in Education 2013-2018], BULLETIN OFFICIEL DE L'ÉDUCATION NATIONALE [OFFICIAL BULLETIN OF THE FRENCH EDUCATION MINISTRY], Feb. 7, 2013, at 16, http://cache.media.education.gouv.fr/file/6/89/8/BO-MEN-7-2-2013_240898.pdf.

³⁰¹ Giuseppe Zanniello, *Le differenze sessuali a scuola* [*Gender Differences in School*], in *MASCHI E FEMMINE A SCUOLA: LE DIFFERENZE DI GENERE IN EDUCAZIONE*, *supra* note 278, at 3, 10.

³⁰² *Momentum Picks Up for Single-Sex Schools*, *supra* note 279.

list of prohibitions against discriminating on the basis of sex.³⁰³ As in Spain and France, even private separate schools today are few in number and primarily affiliated with more conservative elements within the Catholic Church.

That being said, the Italian political context is noticeably distinct. In Spain, for example, widespread resistance to government funding, especially in socialist-dominated regions with intense Catholic populations, has given rise to a politically assertive movement, led by scholars and activists, to gain state support for separate religious schools. In Italy, however, the lack of similar resistance, due in part to longstanding conservative leadership, permitted a loosening in the law in 2007, thereby negating the necessity for organized action. And whereas in France the question is passionately tied to a comprehensive secularist view dating from the French Revolution, in Italy, where Catholicism was the official state religion until 1984, there is no clear legal or ideological focal point for debating single-sex schooling. And so the topic appears to have generated less visible interest beyond a small group of educators, parents, and scholars.

Notwithstanding these differences, proponents throughout these countries tend to converge on two key points: the relevance of teaching practices directed toward gender differences, and the importance of parental choice as a “religious liberty” issue. This common ideology is collectively expressed and affirmed through the European Association of Single-Sex Education,³⁰⁴ a non-profit organization based in London that sponsors a biannual conference where researchers, advocates, and educators share empirical findings and instructional practices.

The European debate has centered in large part on whether the state is legally obligated to fund single-sex programs within independent religiously affiliated schools. While the issue, particularly in Spain, appears to revolve around Catholic schools that choose to maintain their independence from state regulations, simmering beneath the surface are deeper concerns over the rise in the Muslim population and the particular world view its members bring to schooling in these countries. In view of conflicting republican ideals, this is an especially thorny issue in France, where there reside over six million Muslims.³⁰⁵ The controversy in the mid-2000s over the wearing of the hijab in public schools made those conflicts patently clear.³⁰⁶

In any case, the religion question both driving and impeding legal reforms in these western democracies reveals how schooling can serve as an expression of individual and group autonomy. The problem arises, as in the case of the

³⁰³ Decreto Legislativo 6 novembre 2007, n. 196, in G.U. 9-11-2007, n. 261 (It.).

³⁰⁴ EUR. ASS’N SINGLE-SEX EDUC., <http://www.easse.org/> (last visited Mar. 29, 2013).

³⁰⁵ Soeren Kern, *Islam Overtaking Catholicism as Dominant Religion in France*, GATESTONE INST. (Nov. 2, 2012, 5:00 AM), <http://www.gatestoneinstitute.org/3426/islam-overtaking-catholicism-france>.

³⁰⁶ JOAN WALLACH SCOTT, *THE POLITICS OF THE VEIL* (2007).

Muslim veil, when those beliefs run counter to national identity, shared values, and democratic principles, not the least of which is equality. And so while there are reasonable democratic arguments supporting religious and cultural accommodation, that discussion demands a measure of caution. Notwithstanding the conventional wisdom that democracy increases women's equality, empirical findings show that the principal sources of gender inequality in education are not political institutions but rather religion and culture.³⁰⁷

Experience has proven that single-sex schooling can serve either as a sword or as a shield in promoting or denying equality for girls. Even ardent advocates must recognize that religious and cultural arguments in the extreme can be used as an insidious pretext for violating human rights and specifically for subordinating females.³⁰⁸ Particularly in overtly patriarchal societies, there is the danger that the state and families may use separate schools to equip girls with "accomplishments" merely suited to preserving the lesser role of women.³⁰⁹ Muslim-dominated countries are a prime example. While theoretically Islam affords women an equal right to education, women's access to education in Muslim communities and societies, whether autocratic or democratic, is strikingly less than that of men.³¹⁰ Studies have shown Hinduism to have a similarly negative effect on female educational attainment.³¹¹

On the other hand, as the Korean³¹² and Ugandan³¹³ studies demonstrate, single-sex schools ironically may offer particular benefits to girls raised in patriarchal cultures where gender-defined roles limit educational and economic opportunities for women. Researchers in both those studies make that specific point. Taken to the limits, in countries like Nigeria, where concerns for their daughters' wellbeing pose significant educational barriers for families from Islam and other traditional religions, separate schools with female teachers may be the only realistic hope for girls' education.³¹⁴ An even more compelling case can be made for countries where radically religious forces are ideologically opposed to educating females in any sense. In Afghanistan, for

³⁰⁷ Arusha Cooray & Niklas Potrafke, *Gender Inequality in Education: Political Institutions or Culture and Religion?*, 27 EUR. J. POL. ECON. 268, 279 (2011).

³⁰⁸ Bonnie Honig, "My Culture Made Me Do It," in IS MULTICULTURALISM BAD FOR WOMEN? 35, 36 (Joshua Cohen et al. eds., 1999).

³⁰⁹ Mark Halstead, *Radical Feminism, Islam and the Single-Sex School Debate*, 3 GENDER & EDUC. 263, 269 (1991).

³¹⁰ Cooray & Potrafke, *supra* note 307, at 275.

³¹¹ 1 DAVID B. BARRETT ET AL., WORLD CHRISTIAN ENCYCLOPEDIA: A COMPARATIVE SURVEY OF CHURCHES AND RELIGIONS IN THE MODERN WORLD 361 (2d ed. 2001).

³¹² Park et al., *supra* note 189.

³¹³ Picho & Stephens, *supra* note 187.

³¹⁴ Jane Arnold Lincove, *Determinants of Schooling for Boys and Girls in Nigeria Under a Policy of Free Primary Education*, 28 ECON. EDUC. REV. 474, 483 (2009).

example, extremists have thrown acid at schoolgirls.³¹⁵ And in Pakistan Taliban shooters in 2012 attempted to kill fourteen-year-old Malala Yousafzai for publicly demanding an education. She soon became an international symbol in the worldwide struggle to educate women.³¹⁶ As one nineteen-year-old female student in Peshawar aptly noted, “It is a war between two ideologies, between the light of education and darkness.”³¹⁷ The Pakistani attack, followed by the gang rape of a young woman in India and sexual assaults on Egyptian women during protests in Cairo in early 2013, have since brought to fruition a hotly debated United Nations declaration denouncing all forms of violence against women and girls.³¹⁸ The conservative backlash against the declaration, including claims by Egypt’s Muslim Brotherhood that it would lead to the “complete disintegration of society,” make clear the roles that culture, religion, and family play in these matters.³¹⁹

Many of the countries where these atrocities have taken place have signed international agreements, including the Convention on the Rights of the Child (CRC), that technically protect the right to education for females. The CRC requires that education prepare the child “for responsible life in a free society, in the spirit of . . . equality of the sexes”³²⁰ and that state parties make “primary education compulsory and available free to all.”³²¹ Females must be provided schooling on an equal basis. Yet in practice these protections can have little force. Countries may sign agreements like the CRC with reservations for articles or provisions that contravene their own laws, and in the case of some signatories, the “beliefs and values of Islam.”³²²

In any case, these global examples demonstrate that attitudes toward separate or mixed schooling are not monolithic. Neither are the underlying motivations or the social and educational consequences that follow. One can

³¹⁵ Cooray & Potrafke, *supra* note 307, at 269; Saeeda Shah & Umbreen Shah, *Girl Education in Rural Pakistan*, 1 INT’L J. SOC. EDUC. 180, 184 (2012).

³¹⁶ Gayle Lemmon, *Girls Have a Right to Education in Pakistan and Afghanistan*, EDUC. NEWS (Oct. 20, 2012), <http://educationviews.org/girls-have-a-right-to-education-in-pakistan-and-afghanistan/>.

³¹⁷ Nicholas D. Kristoff, Op-Ed., *Her ‘Crime’ Was Loving Schools*, N.Y. TIMES (Oct. 10, 2012), http://www.nytimes.com/2012/10/11/opinion/kristof-her-crime-was-loving-schools.html?_r=0 (quoting a female student in Peshawar, Pakistan).

³¹⁸ *UN Women Welcomes Agreed Conclusions at the Commission on the Status of Women*, UN WOMEN (Mar. 15, 2013), <http://www.unwomen.org/2013/03/un-women-welcomes-agreed-conclusions-at-the-commission-on-status-of-women/>.

³¹⁹ Patrick Kingsley, *Muslim Brotherhood Backlash Against UN Declaration on Women Rights*, GUARDIAN (Mar. 15, 2013, 2:49 PM), <http://www.guardian.co.uk/world/2013/mar/15/muslim-brotherhood-backlash-un-womens-rights>.

³²⁰ Convention on the Rights of the Child art. 29, *opened for signature* Nov. 20, 1989, 1577 U.N.T.S. 3 (entered into force Sept. 2, 1990).

³²¹ *Id.* art. 28.

³²² L. Elizabeth Chamblee, Note, *Rhetoric or Rights? When Culture and Religion Bar Girls’ Right to Education*, 44 VA. J. INT’L L. 1073, 1087 (2004).

speculate that changes in the law and ultimately the Title IX regulations in 2006, as well as the surrounding discussion, influenced related reforms in Italy in 2007 and France in 2008. One can further speculate as to whether press reports of current legal challenges and critiques of brain-science justifications in the United States will similarly influence policies or practices in any of these countries, for better or for worse. Thinking positively, news of these developments could temper the reliance that many single-sex proponents abroad have placed on sex-based learning differences. Thinking negatively, it could further weaken the limited and fragile support for single-sex schooling in countries like Germany, Spain, Italy, and especially France. Unsubstantiated claims that these programs are intrinsically harmful might affirm beliefs that single-sex schooling is “retrograde,” reinforcing existing opposition and undermining current moves toward loosening legal restrictions in these countries. More significantly, such claims might stifle discussion on possibilities for addressing the needs of at-risk students, including the swelling numbers of immigrant children, whether male or female.

IV. MOVING FORWARD

In the end, the final question concerns the specific perspectives and measures that need to be adopted to set the discourse on single-sex schooling in a constructive and globally relevant direction. Most immediately, there needs to be an understanding that the problem, at least in the United States, is not the revised Title IX regulations themselves. Nor is it single-sex schooling as a concept. The problem is the way in which some well-meaning educators, misled by arguments from brain research, have misapplied the regulations and followed a course where the rhetoric on brain differences has outpaced the science and its relevance to teaching and learning.

That is where the ACLU and other opponents should focus their attention and where the OCR should aggressively direct its enforcement efforts. Only by weeding out programs that convey harmful messages of “difference,” and supporting those that are thoughtfully planned and implemented, will sufficient and useful data accumulate over time. With that data in hand, policymakers may better determine the effects of single-sex schooling on a wide set of student academic and personal outcomes beyond test scores. These might include behavioral changes, such as school retention and college admissions, as well as attitudinal changes that might affect course selection and ultimate career choices.

Both researchers and local school officials should join together in developing programs, teaching strategies, and materials that meet the needs of both female and male students, comparing their efficacy in both separate and coed settings. School officials in particular should establish equally resourced single-sex and coed programs that serve similar student populations, thus creating a base for quasi-experimental studies comparing the effects of both approaches on a variety of academic and social indices. Only then will there develop an appropriate and substantial body of evidence from which meta-

analyses may ultimately draw. Meanwhile, educators and policymakers should reject the “pseudoscience of single-sex schooling” on either end of the ideological spectrum, while celebrating and learning from the success that many individual single-sex schools have met in empowering students and families, especially in poor communities.

Educators above all must avoid the inflammatory rhetoric of “hard-wired” differences. Language matters, as does the imagery it evokes. Overstating whatever small biological differences may exist between the sexes instills in students a categorical vision of “the other” and a belief that they have innate limitations that they must overcome. “Different” can easily compute as “deficient,” doing a disservice to the very students these programs purport to help.³²³ As a practical matter, reliance on sex-based characteristics and preferences invites visceral opposition and closes down reasonable discussion on the topic. Especially for those who have never attended a single-sex school or even stepped inside one, and for whom the concept is culturally foreign, it makes such programs seem reasonably unimaginable, like something from a bygone era when women and men were locked in separate roles.

Instead, the discourse should shift to the more familiar language of social development, intellectual growth, long- versus short-term goals, and the many academic and personal benefits that single-sex programs offer. That is how educators should speak to students, parents, and the public and how they should direct their programmatic efforts, thus gaining the public’s confidence and calming the fears of skeptics and critics. That is not to suggest that school officials should ignore observable differences between many girls and boys. They should rather avoid underscoring those differences while still challenging individual students to develop an array of skills and interests. They must also make certain that separation does not mean isolation. Girls and boys must have sufficient opportunities to work together on academic and social projects either within coed schools or through ongoing partnerships between girls’ and boys’ schools.

On the legal front, the driving justification for such programs should not be limited to improving gender equity for affirmative or compensatory purposes, as opponents maintain. That objective was appropriate in the mid-1970s when the federal government adopted the original Title IX regulations to address widespread and blatant inequities in educational opportunities offered to girls. More recent concerns with failing achievement, especially among at-risk students, both girls and boys, now provide a more timely and relevant justification for programs designed to improve those outcomes so long as both sexes are treated evenhandedly and the equitable treatment of the sexes is not diminished in any way. Embracing this view may relieve lingering fears among some women’s advocates that recognizing single-sex schooling betrays

³²³ Rosemary Salomone, *Single-Sex Schooling and the Language of Difference*, TEACHERS C. REC. (Nov. 20, 2006), <http://www.tcrecord.org/content.asp?contentid=12845> (subscription required).

their commitment to gender equality and the hard-earned gains women have made, especially under Title IX.

The educational achievement argument, in fact, holds more legal currency than the compensatory justification. The law on affirmative action has changed dramatically since Title IX was adopted in 1972. The Supreme Court has placed severe limitations on the use of group characteristics to determine how the state allocates benefits like education.³²⁴ The Court specifically has rejected the use of remedial measures to overcome the effects of past discrimination in society.³²⁵ The VMI case itself speaks in the language of “evenhandedness,” which precludes the possibility of a true affirmative action approach.³²⁶ A shift to an “appropriate education” standard, commonly used by the courts and Congress in other areas of education law, would present a more reasonable and legally sound alternative.

The federal government must further play a more proactive role in setting single-sex schooling on a constructive course. In addition to stepped-up enforcement, the Department of Education should provide targeted funds for program planning, staff development, and research that looks not just at quantitative but also at qualitative findings to get a better sense of the educational process of educating students in single-sex versus coed settings. The OCR should provide technical support and guidelines, perhaps in the form of a more detailed “Dear Colleague” letter, outlining permissible and impermissible practices under the Title IX law and 2006 regulations as well as more specific clarification on the diversity and educational-need justifications.³²⁷ It also should require that school officials conduct periodic evaluations not only of separate classrooms, but also of separate schools, and submit the resulting reports to the OCR to assure that programs are operated within legal bounds and not discriminating in harmful ways.

Finally, given the influence of American ideas worldwide, and the power of the Internet to broadly convey that information, those who shape the discussion – whether scholars, researchers, activists, political commentators, or human rights organizations – need to integrate the many contextual and global shades of gray into what is now a polemic running largely in domestic black and white. Rather than control the debate with an American view through media centers in Washington and New York, they should acknowledge and incorporate the concerns of their counterparts wherever these issues are of importance. The insights gained would open the way to a more robust and

³²⁴ See *Grutter v. Bollinger*, 539 U.S. 306, 342 (2003); *Gratz v. Bollinger*, 539 U.S. 244, 275 (2003); see also *Fisher v. Univ. of Tex. at Austin*, No. 11-345, slip op. (U.S. June 24, 2013).

³²⁵ *Regents of the Univ. of Cal. v. Bakke*, 438 U.S. 265, 307 (1978).

³²⁶ *United States v. Virginia*, 518 U.S. 515, 539 (1996).

³²⁷ “Dear Colleague” letter from Stephanie J. Monroe, Assistant Sec’y for Civil Rights, Dep’t of Educ. (Jan. 21, 2007), available at <http://www2.ed.gov/about/offices/list/ocr/letters/single-sex-20070131.html>.

constructive dialogue across political and cultural borders and perhaps resolve seemingly intractable conflicts and uncertainties.

CONCLUSION

Single-sex schooling is now caught in a paradoxical cycle driven by competing ideological forces. Both sides claim to promote equal educational opportunity, the bedrock of American education reform. Yet the more marketers of inherent “difference” have engaged educators in the United States and abroad and have single-mindedly pressed to *mainstream* the concept, the more they have *marginalized* it and fueled the absolutist fires of legal challenges. The ensuing rancor has eclipsed more moderate and globally relevant arguments built on mounting social science evidence and accurate interpretation of the law.

Given the realities of an information-based society that places a high premium on accountability and global competition, single-sex schooling may prove to be an effective option, among others, to close widening achievement gaps and thereby reach an equitable end for particular students. In radically religious settings it may be the only option for young women. While the ACLU is correct in bringing impermissible practices to a halt, their organized and sweeping assault on single-sex schooling and the questionable research underlying most of their arguments have unjustly cast a dark cloud over an approach that carries benefits, especially for at-risk students, many of whom are racial minorities or immigrants. The unyielding nature of that attack has set the debate on a narrow track that fails to actively incorporate, or even consider, ideas and sensitivities driven by differing cultural, religious, and political forces.

In righting these wrongs, the policy course for the immediate future should be qualified but clear. If single-sex schooling is not inherently harmful, and if it appears beneficial to some students, then unless and until proven otherwise, school officials should be free to establish programs aimed at expanding opportunities, especially for those students, whether female or male, whom current approaches continue to fail despite decades of education reform.

Coeducation will always be the norm, as it should be. But the fact that separate programs are not suitable for, or desired by, everyone does not mean that they should be made available to no one.