

No. 18-658

IN THE
SUPREME COURT OF THE UNITED STATES

JOEL DOE, ET. AL,

Petitioners,

v.

BOYERTOWN AREA SCHOOL DISTRICT, ET. AL,

Respondents,

AND

PENNSYLVANIA YOUTH CONGRESS FOUNDATION,

Respondent-Intervenor.

*On Petition for a Writ of Certiorari to the
United States Court of Appeals for the Third Circuit*

**MOTION FOR LEAVE TO FILE AND BRIEF OF
AMICUS CURIAE
RYAN T. ANDERSON, PH.D.
IN SUPPORT OF PETITIONERS**

DEAN R. BROYLES, ESQ.

Counsel of Record

THE NATIONAL CENTER FOR

LAW & POLICY

539 West Grand Avenue

Escondido, CA 92025

(760) 747-4529

dbroyles@nclplaw.org

Counsel for Amicus Curiae

**MOTION FOR LEAVE TO FILE AND BRIEF
OF *AMICUS CURIAE* IN SUPPORT OF
PETITIONERS**

Amicus curiae Ryan T. Anderson, Ph.D., respectfully moves for leave of Court to file the accompanying brief under Supreme Court Rule 37.2(b). Counsel for petitioner has given blanket consent to the filing of amicus briefs and amicus mistakenly believed that respondents had provided blanket consent as well and, therefore, did not seek consent outside of the ten-day window. Dr. Anderson subsequently sought but has not received consent from counsel for respondents.

INTEREST OF AMICI CURIAE

Amicus Ryan T. Anderson, Ph.D., is a scholar who has researched and written extensively about bioethics, political philosophy, marriage, and religious liberty. He is the author of *When Harry Became Sally: Responding to the Transgender Moment* and *Truth Overruled: The Future of Marriage and Religious Freedom*, and he is the co-author of *What Is Marriage? Man and Woman: A Defense and Debating Religious Liberty and Discrimination*.

Dr. Anderson submits this brief to bring to the Court's attention critical social science research and public policy concerns that bear on the issues in this case.

For these reasons, Dr. Anderson respectfully requests that the Court grant leave to file this brief.

Respectfully submitted,

DEAN R. BROYLES, ESQ.
Counsel of Record
THE NATIONAL CENTER FOR
LAW & POLICY
539 West Grand Avenue
Escondido, CA 92025
(760) 747-4529

Counsel for Amicus Curiae
Ryan T. Anderson

December 20, 2018

QUESTIONS PRESENTED

1. Given students' constitutionally protected privacy interest in their partially clothed bodies, whether a public school has a compelling interest in authorizing students who believe themselves to be members of the opposite sex to use locker rooms and restrooms reserved exclusively for the opposite sex, and whether such a policy is narrowly tailored.

2. Whether the Respondents' policy constructively denies access to locker room and restroom facilities under Title IX "on the basis of sex." 20 U.S.C. 1681.

TABLE OF CONTENTS

MOTION FOR LEAVE TO FILE AND BRIEF
OF *AMICUS CURIAE* IN SUPPORT OF
PETITIONERS i

INTEREST OF AMICI CURIAE..... i

QUESTIONS PRESENTED.....iii

TABLE OF AUTHORITIES v

SUMMARY OF ARGUMENT 1

ARGUMENT 2

I. Biological Sex..... 6

 A. What Is Sex in the First Place?..... 7

 B. How the Sex Distinction Begins..... 11

 C. Continuing Sexual Differentiation. 14

II. Philosophical Contradictions of “Gender
Identity” Detached from “Sex” 20

CONCLUSION..... 26

TABLE OF AUTHORITIES

STATUTES

Employment Non-Discrimination Act of 2013	4
Matthew Shepard and James Byrd, Jr., Hate Crimes Prevention Act of 2009.....	3
Title VII of the Civil Rights Act of 1964	4
Violence Against Women Reauthorization Act of 2013.....	3

OTHER AUTHORITIES

“Sexual Dimorphism,” Encyclopedia Britannica (2016)	8
Amber N. V. Ruigrok et al., “A meta-analysis of sex differences in human brain structure,” Neuroscience & Biobehavioral Reviews 39 (2014)	17
Equality Act, H.R. 2282, 115th Cong. (2017)	4
Exec. Order No. 13,672, 79 Fed. Reg. 42,971–72 (July 21, 2014)	3
Institute of Medicine, Committee on Understanding the Biology of Sex and Gender Differences, Exploring the Biological Contributions to Human Health: Does Sex Matter? ed. Theresa M. Wizeman and Mary-Lou Pardue (Washington, D.C.: National Academies Press, 2001)	20

Jerome Hunt, <i>A History of the Employment Non-Discrimination Act: It's Past Time to Pass This Law</i> , Ctr. Am. Progress (July 19, 2011).....	4
Jonathan C. K. Wells, "Sexual dimorphism of body composition," <i>Best Practice & Research: Clinical Endocrinology & Metabolism</i> 21 (2007).....	15
Keith L. Moore and T.V.N. Persaud, <i>The Developing Human: Clinically Oriented Embryology</i> (Philadelphia: Saunders/Elsevier, 2003)	7
Larry Cahill, "A Half-Truth Is a Whole Lie: On the Necessity of Investigating Sex Influences on the Brain," <i>Endocrinology</i> 153 (2012)	17
Larry Cahill, "His Brain, Her Brain," <i>Scientific American</i> , October 1, 2012	17
Lawrence S. Mayer, M.B., M.S., Ph.D., and Paul R. McHugh, M.D., "Sexuality and Gender Findings from the Biological, Psychological, and Social Sciences," <i>New Atlantis</i> 50 (Fall 2016).....	10
Lewis Carroll, <i>Through the Looking-Glass</i> (1934)....	1
Madhura Ingahalikar et al., "Sex differences in the structural connectome of the human brain," <i>Proceedings of the National Academy of Sciences</i> 111 (January 2014)	19
Maureen L. Condic and Samuel B. Condic, "Defining Organisms by Organization," <i>National Catholic Bioethics Quarterly</i> 5, no. 2 (Summer 2005)	8

Nichole Rigby and Rob J. Kulathinal, “Genetic architecture of sexual dimorphism in humans,” <i>J. of Cellular Physiology</i> 230, no. 10 (2015).....	13
Ryan T. Anderson, “A Brave New World of Transgender Policy,” <i>Harvard J. of Law and Public Policy</i> , Vol. 41, No. 1, 2018	26
Ryan T. Anderson, <i>How So-Called “Equality Act” Threatens Religious Freedom</i> , <i>Daily Signal</i> (July 23, 2015)	5
Ryan T. Anderson, PhD, and Melody Wood, <i>Gender Identity Policies in Schools: What Congress, the Courts, and the Trump Administration Should Do</i> (March 23, 2017)	2
Ryan T. Anderson, <i>When Harry Became Sally: Responding to the Transgender Moment</i> (2018)	7, 18
Scott F. Gilbert, <i>Developmental Biology</i> (Sunderland, Mass.: Sinauer Associates, 2016) ..	12
Sherif Girgis, <i>Windsor: Lochnerizing on Marriage?</i> , 64 <i>Case Western Reserve L. Rev.</i> 988 (2014)	9
Student Non-Discrimination Act, Human Rights Campaign (Nov. 6, 2017)	5
T. W. Sadler, <i>Langman’s Medical Embryology</i> (Philadelphia: Lippincott Williams & Wilkins, 2004)	6
The Student Non-Discrimination Act, S. 439, 114th Cong. (2015); H.R. 846, 114th Cong. (2015).....	5

William J. Larsen, Human Embryology (New York:
Churchill Livingstone, 2001) 6, 12

SUMMARY OF ARGUMENT¹

“When *I* use a word,” Humpty Dumpty said, in rather a scornful tone, “it means just what I choose it to mean—neither more nor less.” “The question is,” said Alice, “whether you *can* make words mean so many different things.” “The question is,” said Humpty Dumpty, “which is to be master—that’s all.”²

According to the court below, “such seemingly familiar terms as ‘sex’ and ‘gender’ can be misleading in the context of the issues raised by this litigation.” Pet. App. 254a. The court then proceeded to redefine these terms not objectively, but subjectively based entirely on the testimony of a single expert offered by the respondent School District. *Ibid.*

Words and their definitions matter. By redefining terms, for instance, the court concluded that prohibiting a man from using locker rooms reserved for women would constitute discrimination on the basis of “sex” under Title IX if that man had a “subjective, deep-core sense” of being a woman. Pet. App. 254a, 286a-287a.

But “sex” is an objective biological reality, and law based on this objective reality has a solid footing. In contrast, “gender identity” is an amorphous subjective “inner sense.” Basing law on such a

¹ No party or counsel for a party authored this brief in whole or in part. No one other than Amicus or his counsel made a monetary contribution to preparing or submitting this brief.

² Lewis Carroll, *Through the Looking-Glass*, 205 (1934).

subjective sense leads not to clarity and certainty, but to incoherence and confusion.

ARGUMENT

Sex is a biological reality conceptualized and identified based on an organism’s organization with respect to sexual reproduction. In human beings, this organization begins to form as a result of the chromosomes we inherit from our parents, and the reproductive organs, systems, genitalia, and hormones that develop as a consequence. As there are two reproductive systems, there are two sexes. This primary sexual differentiation in turn gives rise to secondary bodily differences—in terms of height, weight, organ development, musculature, and even psychology—which are not essential differences, but differences in distributional patterns.

The history of the words “gender,” “gender identity,” and “transgender” shows that they are not the same as “sex.” Each of these words was coined precisely in contradistinction to “sex.”³ Furthermore, more recent legislative and executive branch actions show that “sex” does not mean “gender identity.” Congress and the executive branch know how to make policy on the basis of “gender identity” when they want to do so. Congress has specifically included “gender identity”—as distinct from “sex” and listed it

³ See Ryan T. Anderson, PhD, and Melody Wood, *Gender Identity Policies in Schools: What Congress, the Courts, and the Trump Administration Should Do* (March 23, 2017), at 11–12, available at <https://www.heritage.org/sites/default/files/2017-03/BG3201.pdf>.

alongside “sex”—in two bills: the Violence Against Women Reauthorization Act of 2013⁴ and the Matthew Shepard and James Byrd, Jr., Hate Crimes Prevention Act of 2009.⁵ The distinct inclusion of both gender identity and sex protections shows that gender identity was never intended to fall within the definition of sex. If Congress had intended to include gender identity protections within the scope of Title IX, it could have specified their inclusion, but it did no such thing.

President Barack Obama similarly showed that he understood “sex” and “gender identity” to be different categories. In his executive order barring federal contractors from “discrimination” on the basis of “sexual orientation and gender identity,” he replaced existing protections on the basis of “sex” with protections on the basis of “sex, sexual orientation, gender identity.”⁶ In implementing an executive order placing “gender identity” alongside and in addition to “sex,” President Obama showed that he did not consider gender identity protections to be legally included in protections on the basis of sex.

⁴ Pub. L. No. 113-4, 127 Stat. 54, 118–26. (to be codified in scattered sections of the U.S. Code).

⁵ 18 U.S.C. § 249 (2012).

⁶ Exec. Order No. 13,672, 79 Fed. Reg. 42,971–72 (July 21, 2014), <https://www.gpo.gov/fdsys/pkg/FR-2014-07-23/pdf/2014-17522.pdf> [<https://perma.cc/MB4N-YAXT>].

Congress also knows how to reject “gender identity” provisions and has done so dozens of times. For example:

- The Employment Non-Discrimination Act⁷ (ENDA), which would prohibit employment discrimination both on the basis of sexual orientation and on the basis of gender identity, has been introduced in almost every Congress since 1994 but has never been enacted.⁸ Title VII of the Civil Rights Act of 1964⁹ already bans discrimination on the basis of sex in employment, which begs the question as to why Members of Congress would attempt to pass a law for over two decades if such protection were there all along;
- The so-called Equality Act,¹⁰ which would go beyond ENDA and add “sexual orientation and gender identity” (SOGI) to more or less every federal law that protects on the basis of race,

⁷ E.g., Employment Non-Discrimination Act of 2013, S. 815, 113th Cong. (2013).

⁸ See Jerome Hunt, *A History of the Employment Non-Discrimination Act: It's Past Time to Pass This Law*, Ctr. Am. Progress (July 19, 2011), <https://www.americanprogress.org/issues/lgbt/news/2011/07/19/10006/a-history-of-theemployment-non-discrimination-act/> [<https://perma.cc/3AYD-4SMP>].

⁹ 42 U.S.C. §§ 2000e–2(a) (2012).

¹⁰ H.R. 2282, 115th Cong. (2017).

has likewise never been enacted by Congress;¹¹ and

- The Student Non-Discrimination Act,¹² championed by the Human Rights Campaign, which would “prohibit public schools from discriminating against any student on the basis of actual or perceived sexual orientation and gender identity,” also has never become law.¹³

None of these bills attempting to establish legal protections on the basis of gender identity has been authorized by Congress. Agency redefinition of sex to include gender identity explicitly goes against congressional precedent, for Congress has been explicit as to when it does and does not intend to protect on the basis of gender identity. The burden is on transgender advocates to prove that statutory terms have always carried the meaning they prefer as opposed to its plain meaning, and they have failed.

And our laws using the word sex to refer to a biological reality are on solid footing.

¹¹ See Ryan T. Anderson, *How So-Called “Equality Act” Threatens Religious Freedom*, Daily Signal (July 23, 2015), <http://dailysignal.com/2015/07/23/how-so-called-equality-act-threatens-religious-freedom/> [<https://perma.cc/S3K3-6X38>].

¹² S. 439, 114th Cong. (2015); H.R. 846, 114th Cong. (2015).

¹³ Student Non-Discrimination Act, Human Rights Campaign (Nov. 6, 2017), <http://www.hrc.org/resources/student-non-discrimination-act>.

I. Biological Sex.

When political debates are not in the picture, the scientific community has no difficulty pronouncing on when and how sex is determined. Consider three standard embryology textbooks. *Langman's Medical Embryology* concisely explains how the sex of a new organism is determined at fertilization: “An X-carrying sperm produces a female (XX) embryo, and a Y-carrying sperm produces a male (XY) embryo. Hence, the chromosomal sex of the embryo is determined at fertilization.”¹⁴ A new human organism of a particular sex is created at that moment.

William J. Larsen's *Human Embryology* is equally straightforward in its definition of “sex determination” in the glossary: “The male sex is determined by presence of a Y sex chromosome (XY), and female sex is determined by absence of a Y chromosome (XX).”¹⁵ *The Developing Human: Clinically Oriented Embryology* gives more detail here: “The embryo's chromosomal sex is determined at fertilization by the kind of sperm (X or Y) that fertilizes the oocyte; hence, it is the father rather than the mother whose gamete determines the sex of the embryo. Fertilization by an X-bearing sperm produces a 46, XX zygote, which normally develops into a female, whereas fertilization by a Y-bearing sperm

¹⁴ T. W. Sadler, *Langman's Medical Embryology* (Philadelphia: Lippincott Williams & Wilkins, 2004), 40.

¹⁵ William J. Larsen, *Human Embryology* (New York: Churchill Livingstone, 2001), 519.

produces a 46, XY zygote, which normally develops into a male.”¹⁶

Note the word “normally,” which adds an important nuance: An XX embryo *normally* develops into a female and an XY embryo *normally* develops into a male. Chromosomal and hormonal pathologies can disrupt and prevent normal development.¹⁷

X and Y chromosomes ordinarily determine whether an individual is one sex or the other. In this section, we will look at the unfolding process of sexual differentiation after fertilization, and then at bodily differences between males and females, behavioral differences in newborn babies, and medical and health differences between the sexes. But first, we need to consider what exactly it means for an organism to be male or female—that is, what biological sex really is.

A. What Is Sex in the First Place?

The basics of sex determination are relatively clear. Our genetic code determines our sexed body. But what do we even mean by a “sexed” body? Here’s how the *Encyclopedia Britannica* defines sexual dimorphism: “the differences in appearance between males and females of the same species, such as in

¹⁶ Keith L. Moore and T.V.N. Persaud, *The Developing Human: Clinically Oriented Embryology* (Philadelphia: Saunders/Elsevier, 2003), 35.

¹⁷ Ryan T. Anderson, *When Harry Became Sally: Responding to the Transgender Moment* (2018), pp. 88-92 on disorders of sexual development.

colour, shape, size, and structure, that are caused by the inheritance of one or the other sexual pattern in the genetic material.”¹⁸ In other words, there are physical differences between males and females that result from the sexual pattern in the genetic material. But what do we mean by “sexual pattern”? What do we mean by “males” and “females”?

To answer these questions, we have to understand how organisms are identified and classified by their organization. The neuroscientist Maureen Condic and her philosopher brother Samuel Condic explain: “The defining feature of an organism is organization: the various parts of an entity are organized to cooperatively interact for the welfare of the entity as a whole. Organisms can exist at various levels, from microscopic single cells to sperm whales weighing many tons, yet they are all characterized by the integrated function of parts for the sake of the whole.”¹⁹ Male and female organisms have different parts that are functionally integrated for the sake of their whole, and for the sake of a larger whole—their sexual union and reproduction.

Sex, in terms of male or female, is identified by the organization of the organism for sexually reproductive acts. Sex as a status—male or female—is a recognition of the organization of a body that has the ability to engage in sex as an act. More than simply being *identified* on the basis of such

¹⁸ “Sexual Dimorphism,” Encyclopedia Britannica (2016).

¹⁹ Maureen L. Condic and Samuel B. Condic, “Defining Organisms by Organization,” National Catholic Bioethics Quarterly 5, no. 2 (Summer 2005): 336.

organization, sex is a *coherent concept* only on the basis of that organization. The fundamental conceptual distinction between a male and a female is the organism's organization for sexual reproduction. Sherif Girgis explains:

After all, male and female are not just any two sexes, as black and white are just two races. Maleness and femaleness, and a certain social purpose, are necessarily inter-defined: one cannot fully explain either maleness or femaleness without reference to the other and to a certain social good. The reason is that what differentiates them are not just different anatomical or genetic features, but—at a deeper level of explanation—their joint (basic) physical potential for a biological task: reproduction. And this task, its social value, and its link to sexual composition are certainly not mere social inventions.²⁰

The conceptual distinction between male and female based on reproductive organization provides the only coherent way to classify the two sexes.

Drs. Lawrence Mayer and Paul McHugh highlighted the same truth in a recent review of the scientific literature on sexuality and gender identity:

The underlying basis of maleness and femaleness is the distinction between the reproductive roles of the sexes; in mammals

²⁰ Sherif Girgis, *Windsor: Lochnerizing on Marriage?*, 64 Case Western Reserve L. Rev. 988 (2014).

such as humans, the female gestates offspring and the male impregnates the female. More universally, the male of the species fertilizes the egg cells provided by the female of the species. This conceptual basis for sex roles is binary and stable, and allows us to distinguish males from females on the grounds of their reproductive systems, even when these individuals exhibit behaviors that are not typical of males or females.²¹

After explaining the “binary and stable” conceptual basis for maleness and femaleness, Mayer and McHugh note that a structural difference for the purposes of reproduction is the only “widely accepted” way of classifying the two sexes:

In biology, an organism is male or female if it is structured to perform one of the respective roles in reproduction. This definition does not require any arbitrary measurable or quantifiable physical characteristics or behaviors; it requires understanding the

²¹ Lawrence S. Mayer, M.B., M.S., Ph.D., and Paul R. McHugh, M.D., “Sexuality and Gender Findings from the Biological, Psychological, and Social Sciences,” *New Atlantis* 50 (Fall 2016): 89. Mayer is a scholar-in-residence in the Department of Psychiatry at Johns Hopkins University and a professor of statistics and biostatistics at Arizona State University. McHugh is a professor of psychiatry and behavioral sciences at the Johns Hopkins University School of Medicine, and for twenty-five years was the psychiatrist-in-chief at the Johns Hopkins Hospital. The editor of the *New Atlantis*, in the introductory note to their report, called McHugh “arguably the most important American psychiatrist of the last half-century.”

reproductive system and the reproduction process. Different animals have different reproductive systems, but sexual reproduction occurs when the sex cells from the male and female of the species come together to form newly fertilized embryos. It is these reproductive roles that provide the conceptual basis for the differentiation of animals into the biological categories of male and female. There is no other widely accepted biological classification for the sexes.²²

Males are organized to engage in sexual acts that donate genetic material, while females are organized to engage in sexual acts that receive genetic material and then gestate the resulting offspring. This fundamental difference in organization is what allows scientists to distinguish male from female. And this really isn't that controversial. Sex is understood this way across species. No one finds it particularly difficult—let alone controversial—to identify male and female members of the bovine species or the canine species. Farmers and breeders rely on this easy distinction for their livelihoods. It's only recently, and only in the human species, that the very concept of sex has become convoluted, and controversial.

B. How the Sex Distinction Begins.

For much of history, people thought sex in humans was determined environmentally, in the womb. While sex is environmentally determined in

²² *Id.* at 90.

some species—the sex of some reptiles is determined by the temperature in which the egg is incubated—we now know that for humans the starting point is the presence of an XX or XY chromosomal composition. In fact, we’ve known it since 1921. But it was only in 1959 that scientists were able to explain *why* these chromosomes make a difference and *how* they do it. Prior to this time, they were uncertain “whether femaleness was determined by the *presence* of two X chromosomes or by the *absence* of the tiny Y chromosome and, conversely, whether maleness was determined by the presence of a Y chromosome or by the presence of a *single* X chromosome.”²³

Scientists now know that “the *presence* of a Y chromosome determines maleness and its *absence* determines femaleness.”²⁴ This is because the Y chromosome ordinarily carries the SRY (“sex-determining region on Y”) gene. The SRY gene contains a transcription factor known as the testis-determining factor (TDF), which directs the formation of the male gonads.

For the first six weeks of human embryological development, males and females develop in more or less the same way. One textbook explains that “the early genital systems in the two sexes are similar; therefore the initial period of genital development is

²³ Scott F. Gilbert, *Developmental Biology* (Sunderland, Mass.: Sinauer Associates, 2016), 519–20; and William J. Larsen, *Human Embryology* (New York: Churchill Livingstone, 2001), 307.

²⁴ Larsen, *Human Embryology*, 307.

referred to as the *indifferent state of sexual development*.”²⁵ As the gonads start to develop, they are referred to as “indifferent gonads” because under some circumstances they can develop as either male or female, independent of the genetic sex. The presence of a Y chromosome with the SRY testis-determining factor initiates the formation of testicular differentiation in week seven. The absence of SRY allows the indifferent gonads to continue development into the ovaries.

The formation of the gonads—testicles and ovaries—then directs subsequent sexual differentiation. As *The Developing Human* explains it, “the type of sex chromosome complex established at fertilization determines the type of gonad that differentiates from the indifferent gonad. The type of gonads present then determines the type of sexual differentiation that occurs in the genital ducts and external genitalia.”²⁶ Once the ovaries and testes are formed, we read in the *Journal of Cellular Physiology*, they become “the primary regulators of mammalian sexual differentiation by secreting sex-specific hormones that regulate downstream developmental processes. Thus, these reproductive tissues impose body-wide and long-lasting phenotypic effects.”²⁷ Genotype, you may recall, refers to our genetic composition, while phenotype refers to its physical manifestation, so an

²⁵ Moore and Persaud, *The Developing Human*, 304.

²⁶ *Id.* at 307.

²⁷ Nichole Rigby and Rob J. Kulathinal, “Genetic architecture of sexual dimorphism in humans,” *J. of Cellular Physiology* 230, no. 10 (2015): 2305.

ordinary male has an XY genotype, which expresses itself in a male phenotype through the development of testes. The Y chromosome carrying the SRY gene initiates the formation of the testes, which in turn produce testosterone, which then masculinizes the body and contributes to the development of a male.²⁸ Otherwise, without a Y carrying SRY, the human will normally form ovaries and develop as a female.²⁹

C. Continuing Sexual Differentiation.

The primary development of our sexed bodies takes place with the formation of the gonads, either ovaries or testes. The secondary development of our sexed bodies takes place in two stages. It begins in the womb, with the development of our internal reproductive organs, external genitalia, and sex hormones. Then, it continues at puberty, when our bodies reach sexual maturity.

Apart from reproductive organs and genitalia, boys and girls have remarkably similar bodies at birth, though newborn boys have longer bodies with

²⁸ The formation of the testes gives rise to the sertoli cells, which produce anti-Mullerian hormone (AMH), also known as Mullerian inhibiting substance (MIS) or factor (MIF), which stops further development of the Mullerian ducts (which otherwise would develop into the uterus and fallopian tubes) and causes their regression.

²⁹ This development is guided by several genes, including RSP01, WNT4, and FOXL2.

more lean mass.³⁰ During puberty, however, bodily differences become more pronounced, as “the two sexes take increasingly divergent pathways, with girls passing through puberty earlier and ceasing to grow at a younger age.”³¹ Here is how one scholar put it in *Best Practice and Research: Clinical Endocrinology and Metabolism*:

Females enter puberty earlier and undergo a more rapid pubertal transition, whereas boys have a substantially longer growth period. After adjusting for dimorphism in size (height), adult males have greater total lean mass and mineral mass, and a lower fat mass than females. These whole-body differences are complemented by major differences in tissue distribution. Adult males have greater arm muscle mass, larger and stronger bones, and reduced limb fat, but a similar degree of central abdominal fat. Females have a more peripheral distribution of fat in early adulthood; however, greater parity and the menopause both induce a more android fat distribution with increasing age. Sex differences in body composition are primarily attributable to the action of sex steroid hormones, which drive the dimorphisms during pubertal development. Oestrogen is important not only in body fat distribution but

³⁰ Jonathan C. K. Wells, “Sexual dimorphism of body composition,” *Best Practice & Research: Clinical Endocrinology & Metabolism* 21 (2007): 415.

³¹ *Id.* at 416.

also in the female pattern of bone development that predisposes to a greater female risk of osteoporosis in old age.³²

The result is that male and female bodies differ not only in their sex chromosomes (XX and XY) and in their organization for reproduction, but also, on average, in size, shape, bone length and density, fat distribution, musculature, and various organs including the brain. These secondary sex differences are not what define us as male or female; organization for reproduction does that. But this organization leads to other bodily differences. There are organizational differences and organism-wide differences in organs and tissues, as well as differences at the cellular and molecular levels. These differences affect not just our physiology, but also our minds.

Indeed, after the reproductive organs, the brain is possibly the most “sexed” organ in a human being. This is not to say that there are male brains and female brains, but that on average there are differences in the brains of males and females that tend to make a difference in how men and women experience emotion and pain, how they see and hear, and how they remember and navigate.

Larry Cahill, a neurobiologist at the University of California, Irvine, reviewed the literature for *Scientific American* in 2012 and reported “a surge of findings that highlight the influence of sex on many

³² *Id.* at 415.

areas of cognition and behavior, including memory, emotion, vision, hearing, the processing of faces and the brain's response to stress hormones."³³ There are differences in the size of various regions and structures in the brain, as well as differences at the cellular level.³⁴ In the journal *Endocrinology*, Cahill cites "abundant evidence" showing that "sex influences on brain function are ubiquitous, found at every level of neuroscience."³⁵

While male and female brains are similar in many ways, researchers have found "an astonishing array of structural, chemical and functional variations" between them. This is not to suggest that either men or women are smarter, and "no one has uncovered any evidence that anatomical disparities might render women incapable of achieving academic distinction in math, physics or engineering," Cahill stresses.³⁶ The documented differences between male and female brains, on average, cannot legitimately be used to justify stereotypes or discriminatory treatment, or to nullify the considerable variation among males and among females. We should appreciate each person's individuality, and we should honor the

³³ Larry Cahill, "His Brain, Her Brain," *Scientific American*, October 1, 2012.

³⁴ In addition to Cahill, see Amber N. V. Ruigrok et al., "A meta-analysis of sex differences in human brain structure," *Neuroscience & Biobehavioral Reviews* 39 (2014): 34–50.

³⁵ Larry Cahill, "A Half-Truth Is a Whole Lie: On the Necessity of Investigating Sex Influences on the Brain," *Endocrinology* 153 (2012): 2542.

³⁶ Cahill, "His Brain, Her Brain."

complementarity in the male and female ways of being equally human.³⁷

Differences between the sexes begin in the womb, and they are manifested in our behavior from infancy. Many researchers have found that young children show a distinct pattern in choosing toys: “Boys tend to gravitate toward balls or toy cars, whereas girls more typically reach for a doll,” Cahill notes. Whether this difference comes from nature or nurture was long a subject of debate, until some researchers did an experiment to observe the play habits of vervet monkeys. Given a selection of toys, “male monkeys spent more time playing with the ‘masculine’ toys than their female counterparts did, and female monkeys spent more time interacting with the playthings typically preferred by girls.”³⁸ These results cannot be explained away by reference to cultural stereotypes or the social pressures that operate among humans.

It is also difficult to blame socialization for the differences in how newborn human babies respond to objects and to people. Girls tend to show more interest in their mothers than boys do. Girls typically prefer movies showing faces, while boys prefer movies showing cars. Cahill cites a study that found these preferences in one-day-old infants, long before nurture could have any effect: the baby girls looked more at a face, while the baby boys looked more at a mechanical object. This pattern of behavior in the

³⁷ Anderson, *When Harry Became Sally*, chapter 7.

³⁸ *Ibid.*

first day of life indicates that “we come out of the womb with some cognitive sex differences built in.”³⁹ A recent study using MRIs suggested that, on the whole, “male brains are structured to facilitate connectivity between perception and coordinated action, whereas female brains are designed to facilitate communication between analytical and intuitive processing modes.”⁴⁰

When we step back from contentious political debates, we can see scientists acknowledging what might otherwise be an unpopular truth: that there are biological differences between men and women, and they are consequential for our health. Recognizing differences between the sexes is increasingly regarded as vitally important for good medical practice, because scientists have found that male and female bodies tend to be susceptible to certain diseases in different ways, to differing degrees, and they respond to treatments differently. For this reason, the best research protocols now require that both males and females be included in samples, and that the sex of participants be tracked so that any sex-specific results can be recorded.

The Institute of Medicine at the National Academy of Sciences published a report in 2001 titled *Exploring the Biological Contributions to Human Health: Does Sex Matter?* The executive summary

³⁹ *Ibid.*

⁴⁰ Madhura Ingalhalikar et al., “Sex differences in the structural connectome of the human brain,” *Proceedings of the National Academy of Sciences* 111 (January 2014): 823–28.

answered the question in the affirmative, saying that the explosive growth of biological information “has made it increasingly apparent that many normal physiological functions—and, in many cases, pathological functions—are influenced either directly or indirectly by sex-based differences in biology.”⁴¹ Because genetics and physiology are among the influences on an individual’s health, the “incidence and severity of diseases vary between the sexes.” The difference between male and female is thus “an important basic human variable that should be considered when designing and analyzing studies in all areas and at all levels of biomedical and health-related research.”⁴²

II. Philosophical Contradictions of “Gender Identity” Detached from “Sex”

For ideological reasons, sex is increasingly being replaced by “gender identity.” Here, the court below held that the government has a compelling interest in permitting transgender individuals to use “sex-segregated spaces,” i.e., restrooms and locker rooms, “that correspond to their gender identity rather than their birth-determined sex.” Pet. App. 256a. In other words, the court held that for purposes of

⁴¹ Institute of Medicine, Committee on Understanding the Biology of Sex and Gender Differences, *Exploring the Biological Contributions to Human Health: Does Sex Matter?* ed. Theresa M. Wizeman and Mary-Lou Pardue (Washington, D.C.: National Academies Press, 2001), Executive Summary, 1, <https://www.ncbi.nlm.nih.gov/books/NBK222287/>.

⁴² *Id.* at 3.

differentiation, gender identity, not sex must be the determining factor.

Similarly, in an expert declaration to a federal district court in North Carolina concerning H.B. 2, Dr. Deanna Adkins stated, “From a medical perspective, the appropriate determinant of sex is gender identity.” Dr. Adkins is a professor at Duke University School of Medicine and the director of the Duke Center for Child and Adolescent Gender Care (which opened in 2015). Adkins argues that gender identity is not only the preferred basis for determining sex, but “the only medically supported determinant of sex.” Every other method is bad science, she claims: “It is counter to medical science to use chromosomes, hormones, internal reproductive organs, external genitalia, or secondary sex characteristics to override gender identity for purposes of classifying someone as male or female.”

This is a remarkable claim, not least because the argument recently was that gender is only a social construct, while sex is a biological reality. Now, the claim is that gender identity is destiny, while biological sex is the social construct.

Adkins does not say whether she would apply this rule to all mammalian species. But why should sex be determined differently in humans than in other mammals? And if medical science holds that gender identity determines sex in humans, what does this mean for the use of medicinal agents that have different effects on males and females? Does the proper dosage of medicine depend on the patient’s sex, or on his or her gender identity?

But what exactly is this “gender identity” that is supposed to be the true medical determinant of sex? Adkins defines it as “a person’s inner sense of belonging to a particular gender, such as male or female.” Note that little phrase “such as,” implying that the options are not necessarily limited to male or female. Others are more forthcoming in admitting that gender identity need not be restricted to the binary choice of male or female, but can include both or neither. The American Psychological Association, for example, defines “gender identity” as “a person’s internal sense of being male, female, or something else.”

But this new understanding of gender and gender identity presents profound philosophical difficulties. On the one hand, the claim is that the real self is something other than the physical body, in a new form of Gnostic dualism, yet at the same time it embraces a materialist philosophy in which only the material world exists. The claim is that gender is purely a social construct, while asserting that a person can be “trapped” in the wrong gender. The claim is that there are no meaningful differences between man and woman, yet they rely on rigid sex stereotypes to argue that “gender identity” is real, while human embodiment is not. Truth is whatever a person says it is, yet there is a *real* self to be discovered inside that person.

It is hard to see how these contradictory positions can be combined. If you pull too hard on any one thread, the whole tapestry comes unraveled. But here are some questions we can pose:

If gender is a social construct, how can gender identity be innate and immutable? How can one's identity with respect to a social construct be determined by biology in the womb? How can one's identity be unchangeable (immutable) with respect to an ever-changing social construct? And if gender identity is innate, how can it be "fluid"?

Is there a gender binary or not? Somehow, it both does and does not exist, according to these claims. If the categories of "man" and "woman" are objective enough that people can identify as, and *be*, men and women, how can gender also be a spectrum, where people can identify as, and *be*, both, or neither, or somewhere in between?

What does it even mean to have an internal sense of gender? What does gender feel like? What meaning can we give to the concept of sex or gender—and thus what internal "sense" can we have of gender—apart from having a body of a particular sex? Apart from having a male body, what does it "feel like" to be a man? Apart from having a female body, what does it "feel like" to be a woman? What does it feel like to be *both* a man and a woman, or to be *neither*?

Even if proponents could answer these questions about feelings, that still wouldn't address the matter of reality. Why should feeling like a man—whatever that means—*make* someone a man? Why do our feelings determine reality on the question of sex, but on little else? Our feelings don't determine our age or our height. And few people buy into Rachel Dolezal's claim to identify as a black woman, since she is clearly

not. If those who identify as transgender *are* the sex with which they identify, why doesn't that apply to other attributes or categories of being? What about people who identify as animals, or able-bodied people who identify as disabled? Do all of these self-professed identities determine reality? If not, why not? And should these people receive medical treatment to transform their bodies to accord with their minds? Why accept transgender "reality," but not trans-racial, trans-species, and trans-abled reality? The challenge for activists is to explain why a person's "real" sex is determined by an inner "gender identity," but age and height and race and species are not determined by an inner sense of identity.

Of course, one could reply that an "identity" is, by definition, just an inner sense of self. But if that's the case, gender identity is merely a disclosure of how one feels. Saying that someone is transgender, then, says only that the person has feelings that he or she is the opposite sex. Gender identity, so understood, has no bearing at all on the meaning of "sex" or anything else. But the claim is that a person's self-professed "gender identity" *is* that person's "sex."

Gender identity can sound a lot like religious identity, which is determined by beliefs. But those beliefs do not determine reality. Someone who identifies as a Christian believes that Jesus is the Christ. Someone who identifies as a Muslim believes that Muhammad is the Final Prophet. But Jesus either is or is not the Christ, and Muhammad either is or is not the Final Prophet, regardless of what anyone happens to believe. So, too, a person either is or is not a man, regardless of what anyone—including

that person—happens to believe. Why should transgender beliefs determine reality?

Determining reality is the heart of the matter, and here too we find contradictions. On the one hand, proponents of transgender claims want the authority of science as they make metaphysical claims, saying that science reveals gender identity to be innate and unchanging. On the other hand, they deny that biology is destiny, insisting that people are free to be who they want to be. Which is it? Is our gender identity biologically determined and immutable, or self-created and changeable? If the former, how do we account for people whose gender identity changes over time? Do these people have the wrong sense of gender at some time or other? And if gender identity is self-created, why must other people accept it as reality? If we should be free to choose our own gender reality, why can some people impose their idea of reality on others just because they identify as transgender?

As Dr. Anderson documents in depth in *When Harry Became Sally*, the claims of transgender activists are confusing because they are philosophically incoherent. Activists rely on contradictory claims as needed to advance their position, but their ideology keeps evolving, so that even allies and LGBT organizations can get left behind as “progress” marches on. At the core of the ideology is the radical claim that feelings determine reality. From this idea come extreme demands for society to play along with subjective reality claims.

But this is no foundation for a sound legal regime. Sex is a reality and our laws have long respected this reality. Replacing “sex” with “gender identity” not only presents privacy and safety challenges,⁴³ but also renders law philosophically incoherent.

CONCLUSION

The Court should grant the petition to address the vitally important issues raised but not addressed by the decision below.

Respectfully submitted,

DEAN R. BROYLES, ESQ.
Counsel of Record
THE NATIONAL CENTER FOR
LAW & POLICY
539 West Grand Avenue
Escondido, CA 92025
(760) 747-4529

Counsel for Amicus Curiae
Ryan T. Anderson

December 20, 2018

⁴³ See Ryan T. Anderson, “A Brave New World of Transgender Policy,” *Harvard J. of Law and Public Policy*, Vol. 41, No. 1, 2018, *available at* <https://ssrn.com/abstract=3113625>.