IN THE
UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 15-2056

G. G., by his next friend and mother, Deirdre Grimm,
Appellant,

v.

GLOUCESTER COUNTY SCHOOL BOARD,
Appellee.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA

BRIEF OF AMICI CURIAE

PAUL R. MCHUGH, M.D.,
PAUL HRUZ, M.D., PH.D., &
LAWRENCE S. MAYER, PH.D.
IN SUPPORT OF APPELLEE &
SEEKING AFFIRMANCE

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Rule of App. Procedure Rule 29(a) Statements

All parties to this matter have consented to the filing of this brief.

No party's counsel authored this brief in whole or in part, no party or party's counsel contributed money intended to fund the preparation or submittal of this brief, and no person other than amici and their counsel, contributed money intended to fund the preparation or submittal of this brief.

TABLE OF AUTHORITIES

INTEREST OF AMICI CURIAE

Amicus curiae Paul R. McHugh, M.D. is the University Distinguished Service Professor of Psychiatry at the Johns Hopkins University School of Medicine. From 1975 until 2011, Dr. McHugh was the Henry Phipps Professor of Psychiatry and the director of the Department of Psychiatry and Behavioral Science at Johns Hopkins. At the same time, he was psychiatrist-in-chief at the Johns Hopkins Hospital with overall responsibility for the proper care and treatment of patients with, among other issues, sexual disorders.

Amicus curiae Paul W. Hruz, M.D., Ph.D. is Associate Professor of Pediatrics and the Former Chief of Pediatric Endocrinology at Washington University School of Medicine. He also holds an appointment as Associate Professor of Cell Biology and Physiology. Dr. Hruz is an active member of the Washington University Disorders of Sexual Development ("DSD") Interdisciplinary Team. Over the past twenty years, Dr. Hruz has participated in the care of hundreds of children with DSDs.

Amicus curiae Lawrence S. Mayer, M.D., Ph.D. is a professor of statistics and biostatistics at Arizona State University and a Scholar in Residence in the Department of Psychiatry at the Johns Hopkins University School of Medicine. Before July 1, 2016, he was an Adjunct Professor of Psychiatry and Public Health in the Bloomberg School of Public Health and School of Medicine at Johns Hopkins University and a member of the research faculty at the Mayo Clinic/ASU program in Bioinformatics.

Dr. Mayer has lectured and published extensively on models of hu- man development including adolescent and teen psycho- sexual development.

Drs. McHugh, Hruz, and Mayer appear as amici to critically evaluate, based upon their clinical and scientific expertise, G.G.'s proposal that school districts (and other affected entities) enforce "gender-affirming" policies and practices for students who identify as a gender that is different from their biological sex. These policies include providing these children with unimpeded access to restrooms and other private areas according to their self-identified gender.

Amici do not in this Brief address the distress that some children may experience if they are exposed in a bathroom, shower, or locker room to someone who identifies as being her sex, but who is, according to all or most appearances, a member of the opposite sex. Amici instead focus on the children these policies are intended to help – those such as G.G. who are "transgendered", in that they have an insistent, persistent and consistent identification as the opposite sex.

Amici consider the medical and scientific evidence bearing upon the question: Do G.G.'s proposed legal requirements help or harm vulnerable and needy children?

SUMMARY OF ARGUMENT

Amici are physician scientists who do not hold themselves out as experts in any area of the law, including statutory construction. They proffer no account of what was

being debated at the time of the passage of Title IX and its ban upon sex discrimination. Amici leave the legal arguments to others.

Amici observe that the legal issues in this lawsuit center upon the meaning of the term sex in Title IX, added in 1972 to the federal Civil Rights Acts. Amici further observe that, for the duration of their long professional careers (McHugh graduated from Harvard Medical School in 1956, Hruz has treated sexual disorders in children for twenty years, and Mayer began working as a medical doctor in 1970), the term sex has almost invariably referred to one's being male or female in the objective, biological or genetic sense, a sense that is common to all organisms in the animal kingdom. Amici note too that the term gender came into use to indicate something quite different from sex – namely, a society's expectations for how males and females are expected to behave under the norms and mores of society. Sex is innate, fixed, and, with a very few exceptions, binary; gender is a fluid cultural construct.

Amici do not claim to know exactly how or why G.G. seems to be confused about sex and gender (or to transpose them, as if gender was innate and fixed at birth, while sex was malleable and the body configurable to one's sense of gender identity). But this confusion is surely founded, at least in part, upon a host of mostly unsupported, and some glaringly mistaken, assertions regarding what the contemporary scientific research has shown.

G.G. maintains that, although in every biological and physiological way a girl, she (or he if you prefer) is really a boy.[1] But gender is culturally defined. Currently in the United States, it is defined as a persistent identification with a set of norms promoted by society as the behaviors, attitudes, and preferences associated with a specific sex. The definition is not biological. Choosing a gender – i.e., deciding to live as one sex or the other – neither is caused by nor causes any biological changes. There is no credible scientific literature that suggests that a person's choice of gender affects their biology in any way. One's sense of self and one's desire to present to others as a member of the opposite sex have no bearing whatsoever upon the scientific fact that every child is biologically is male or female.

No doubt many people, including some children, experience disquiet with their sex. They seem to have difficulty accepting the gender associated with their sex. Some feel a distressing and persisting incongruity between their sex and their gender identity, their sense of themselves as male or female.

But no matter how disturbing this condition of gender dysphoria may be, nothing about it affects the objective reality that those suffering from it remain the male or female persons that they were at conception, at birth, and thereafter – any

[1] G.G. says, "I was born in the wrong sex," App. 151a, meaning (evidently) that she was at birth a boy, albeit one saddled with a girl's body.

more than an anorexic's belief that she is overweight changes the fact that she is, in reality, slender.

In this Brief, amici leave aside questions about how best to treat gender dysphoria in adults. Amici focus instead on how to treat children and adolescents like G.G. who suffer from this psychological disorder. More exactly, amici critically evaluate the scientific bases, although quite meager, for the gender-affirming policies that G.G. alleges are required by law.

According to G.G., school districts must treat students in accordance with their gender identity instead of their biological sex. There is, however, little or no scientific evidence that such a gender-affirming treatment helps the children it aims to help. In fact, and to the contrary, there is abundant scientific evidence that (1) the policy G.G. urges this court to enforce does little to help the children it is meant to serve.; (2) to the contrary, it probably harms the vast majority of them; and (3) it can lead to catastrophic outcomes for many of these children.

Amici conclude, based upon decades of academic study and clinical experience in the fields of psychiatry, psychology, and the biological bases of both of those fields, that the policies advocated by G.G. are a scientifically unwarranted, dangerous experiment upon our nation's children, with no apparent consideration at all of its far-reaching medical and psychological implications.

ARGUMENT

I. A Child's Gender Identity Has No Bearing on His or Her Sex.

Sex and gender represent two very distinct features of our world. While sex is binary and objective, determined fundamentally by one's chromosomal constitution, and ultimately by clearly defined reproductive capacities, gender is a set of social roles dictated by cultural norms. S ocial expectations for boys have traditionally been about conformity to the norms that society has for "male behavior". Those expectations may vary dramatically across cultures. But these expectations do not affect the biology of the children. G.G. maintains that her sense of herself – i.e., her gender identity – is and should be accepted as her sex. This equivalence between sex and identity is simply not supported by any scientific evidence.

The central underlying basis for sex is the distinction between the reproductive roles of males and females. See Lawrence S. Mayer and Paul R. McHugh, Sexuality and Gender: Findings from the Biological, Psychological, and Social Sciences, New Atlantis, Fall 2016, at 89-90. In biology, an organism is male or female if it is biologically and physiologically designed to perform an assigned role in reproduction. This definition does not depend upon amorphous physical characteristics or behaviors; it requires under- standing the reproductive system and its processes.

Reproductive roles provide the only 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. But one's reality as male or female is

more than a matter of re- productive "plumbing." Sex is a physiological reality which permeates every cell of an organism.

Sex is thus innate and immutable. The genetic in- formation directing development of male or female gonads and other primary sexual traits, which normally are encoded on chromosome pairs "XY" and "XX," are present immediately upon conception. As early as eight weeks' gestation, endogenously produced sex hormones influence prenatal brain imprinting that ultimately influences postnatal behaviors. See Francisco I. Reyes et al., Studies on Human Sexual Development, 37 J. of Clin. Endocrinology & Metabolism 74-78 (1973); Michael Lombardo, Fetal Testosterone Influences Sexually Dimorphic Gray Matter in the Human Brain, 32 J. of Neuroscience 674-80 (2012); Geneva Foundation for Medical Education and Research, "Human Sexual Differentiation" (2016), available at http://www.gfmer.ch/Books/Reproductive_health/Human_sexual_differentiation.html. It is therefore not the reproductive system alone that carries one's sexual identity. Every cell in the body is marked with a sexual identity by its chromosomal constitution XX or XY.

Thus, sex is not "assigned" at birth, as G.G. suggests; rather, it "declares itself anatomically in utero and is acknowledged at birth." Michelle A. Cretella, Gender Dysphoria in Children and Suppression of Debate, 21 J. of Am. Physicians & Surgeons 50, 51 (2016). A baby's sex – male or female – is recognized and recorded at birth.

In contrast, gender has come to refer to "the socially constructed roles, behaviors, activities, and at- tributes that a given society considers appropriate for boys and men or girls and women," which "influence the ways that people act, interact, and feel about them- selves." American Psychological Association, Answers to Your Questions About Transgender People, Gender Identity and Gender Expression (2011), available at http://www.apa.org/topics/lgbt/transgender.pdf. A child's gender reflects the extent to which he or she conforms to or deviates from socially normative behavior for boys or girls.

When it is defined in this manner, gender is both plastic and elastic, almost fuzzy and mercurial. There is no universal definition for what it means to behave like a boy or a girl. Moreover, what is considered gender-typical behavior for boys and girls changes over time within a given culture[2] and varies between cultures. A girl who behaves like a tomboy may modify her behavior as she ages, and a boy who prefers quiet play may eventually develop an interest in sports or hunting. Consequently, gender is a fluid concept with no truly objective meaning. Judith Butler, Gender Trouble: Feminism and the Subversion of Identity 6-7 (1990) (stating that "[g]ender is

[2] Just a few decades ago, in the United States it would have been atypical for women to attend law school or medical school. It is projected that women will outnumber men in law schools in 2017. Debra Cassens Weiss, "Women Could Be a Majority of Law Students in 2017; These Schools Have 100-Plus Female Majorities," ABA Journal, Mar. 16, 2016, http://www.abajournal.com/news/article/women_could_be_majority_of_law_students_in_2017_these_ schools_have_100_plus.

neither the causal result of sex nor as seemingly fixed as sex," but rather "a free-floating artifice, with the consequence that man and masculine might just as easily signify a female body as a male one, and woman and feminine a male body as easily as a female one") (emphases in original).

II. Gender Dysphoria Is a Psychological Disorder Distinguished by Confused and Distressed Thinking About the Reality of One's Sex.

A gender dysphoric child or adolescent such as G.G. experiences a marked sense of incongruity between the gender expectations linked to her biological sex and her biological sex itself. Tomer Shechner, Gender Identity Disorder: A Literature Review from a Developmental Perspective, 47 Isr. J. of Psychiatry & Related Sci. 132-38 (2010). Gender dysphoric boys feel as if they are girls, and gender dysphoric girls feel as if they are boys – according to their sense (at whatever stage of childhood they happen to be) of what that feeling of being a member of the opposite sex must be like. See American Psychological Association, Diagnostic & Statistical Manual of Mental Disorders [hereinafter, "DSM-5"] 452 (5th ed. 2013).

Yet those subjective feelings, strong as they may be, cannot and do not constitute (or transform) objective reality. Cretella, supra, at 51 ("[T]his 'alternate perspective' of an 'innate gender fluidity' arising from prenatally 'feminized' or 'masculinized' brains trapped in the wrong body is an ideological belief that has no basis in rigorous science."); J. Michael Bailey and Kiira Triea, What Many Transsexual

Activists Don't Want You to Know and Why You Should Know It Anyway, 50 Perspectives in Biology & Med. 521-34 (2007) (finding little scientific basis for the belief that male-to-female transsexuals are women trapped in men's bodies). A gender dysphoric girl is not a boy trapped in a girl's body, and a gender dysphoric boy is not a girl trapped in a boy's body.[3] Respondent is a girl, even though she feels the way she thinks a boy feels.

[3] Studies of brain structure and function have not demonstrated any conclusive, biological basis for transgenderism. See Giuseppina Rametti et al., White Matter Microstructure in Female to Male Transsexuals Before Cross-sex Hormonal Treatment. A Diffusion Tensor Imaging Study, 45 J. of Psychiatric Res. 199-204 (2011) (offering no evidence to support the hypothesis that transgenderism is caused by differences in the structure of the brain); Giuseppina Rametti et al., The Microstructure of White Matter in Male to Female Transsexuals Before Cross-sex Hormonal Treatment. A DTI Study, 45 J. of Psychiatric Res. 949-54 (2011) (same); Emiliano Santarnecchi et al., Intrinsic Cerebral Connectivity Analysis in an Untreated Female-to-Male Transsexual Subject: A First Attempt Using Resting-State fMRI, 96 Neuroendoctrinology 188-93 (2012) (in a study of brain activity, finding that a transsexual's brain profile was more closely related to his biological sex than his desired one); Hans Berglund et al., Male-to-Female Transsexuals Show Sex-Atypical Hypothalamus Activation When Smelling Odorous Steroids, 18 Cerebral Cortex 1900-08 (2008) (in a study of brain activity, finding no support for the hypothesis that transgenderism is caused by some innate, biological condition of the brain). Some researchers believe that transgenderism can be attributed to other biological causes, such as hormone exposure in utero. See, e.g., Nancy Segal, Two Monozygotic Twin Pairs Discordant for Female-to-Male Transsexualism, 35 Archives of Sexual Behav. 347-58 (2006) (examining two sets of twins and hypothesizing, without evidence, that uneven prenatal androgen exposures led one twin in each set to be transsexual). Presently, no scientific evidence supports that belief.

III. There Is No Scientific or Medical Support for Treating Gender Dysphoric Children in Accordance with Their Gender Identity Rather than Their Sex.

In standard medical and psychological practice, a child who has a persistent, mistaken belief that is inconsistent with reality is not encouraged in his or her belief. See Cretella, supra, at 51 (listing other similar such conditions); Anne Lawrence, Clinical and Theoretical Parallels Between Desire for Limb Amputation and Gender Identity Disorder, 35 Archives of Sexual Behavior 263-78 (2006) (finding similarities between body integrity identity disorder and gender dysphoria). For example, an anorexic teen is not encouraged to lose weight. She is not given liposuction; instead, she is encouraged to align her belief with reality: i.e., to see herself as she really is. Indeed, this approach is not just a good guide to sound medical practice. It is common sense.

Until recently this was precisely how gender dysphoric children were treated. Dr. Kenneth Zucker, long acknowledged as one of the foremost authorities on gender dysphoria in children, spent years helping his patients align their subjective gender identity with their objective biological sex. He used psychosocial treatments (talk therapy, organized play dates, and family counseling) to treat gender dysphoria and

had much success.[4] See Cretella, supra, at 51 (describing his work); Kenneth J. Zucker et al., A Developmental, Biopsychosocial Model for the Treatment of Children with Gender Identity Disorder, 59 J. of Homosexuality 369-97 (2012).

Dr. Zucker's sound practice is anchored by recognition of the ineradicable reality that each child is immutably either male or female. It is also influenced by the universally recognized fact that gender dysphoria in children is almost always transient: the vast majority of gender dysphoric children naturally reconcile their gender identity with their biological sex. All competent authorities agree that between 80 and 95 percent of children who say that they are transgender naturally come to accept their sex and to enjoy emotional health by late adolescence. The American College of Pediatricians, for example, recently reported that approximately 98 percent of gender- confused boys, and 88 percent of gender-confused girls, naturally resolve.[5] The American Psychological Association's Diagnostic and Statistical Manual of Mental Disorders reports similar numbers. DSM-5, supra, at 455.

[4] In a follow-up study by Dr. Zucker and colleagues of children treated by them over the course of thirty years at the Center for Mental Health and Addiction in Toronto, they found that gen- der dysphoria persisted in only three of the twenty-five girls they had treated. Kelley D. Drummond et al., A Follow-up Study of Girls with Gender Identity Disorder, 44 Developmental Psychology 34-45 (2008).

[5] American College of Pediatricians, Gender Ideology Harms Children, Aug. 17, 2016, available at https://www.acpeds.org/the- college-speaks/position-statements/gender-ideology-harms-children.

Traditional psychosocial treatments for gender dysphoria, such as those employed by Dr. Zucker, are considered prudent and natural; they work with and not against the facts of science and the predictable rhythms of children's psycho-social and psycho-sexual development. They give gender dysphoric children an opportunity to reconcile their subjective gender identity with their objective biological sex without any irreversible effects or the use of harmful medical treatments.

Although some researchers report that they have identified certain factors which are associated with the persistence of gender dysphoria into adulthood,[6] there is no evidence that any clinician can identify the per- haps one-in-twenty (some say one-in-ten) children for whom gender dysphoria will last with anything approaching certainty. Because such a large majority of these children will naturally resolve their confusion, proper medical practice calls for a cautious, wait-and-see, approach for all gender dysphoric children. This sensible approach can be and often is rightly supplemented in many cases by family or individual psychotherapy to identify and treat the underlying problems which pre- sent as the belief that one belongs to the opposite sex.

Policies and protocols that treat children who experience gender-atypical thoughts or behaviors as if they belong to the opposite sex, on the contrary, interfere

[6] See, e.g., Thomas D. Steensma et al., Factors Associated with Desistence and Persistence of Childhood Gender Dysphoria: A Quantitative Follow-up Study, 52 J. of the Am. Acad. of Child & Adolescent Psychiatry 582-90 (2013).

with the normal progress of psycho-sexual development. Such treatments encourage a gender dysphoric child or adolescent like G.G. to adhere to his or her false belief that he or she is the opposite sex. These treatments would help the child maintain his or her cross-gender identity, albeit with less distress by, among other aspects, requiring others in the child's life to go along. Importantly, there are no long-term, longitudinal, rigorous studies that support the use of gender-affirming policies and treatments for gender dysphoria. Cretella, supra, at 52.[7]

The gender-affirming therapy which G.G. asserts is legally required is therefore a medical experiment. In light of all the existing scientific evidence – some more of which we shall explore forthwith – it amounts to nothing more than serious mistreatment.

IV. Gender-Affirming Policies Generally Harm, Rather than Help, Gender Dysphoric Children.

G.G. asks this Court to require those within reach of its writ and who interact with her to affirm (at least implicitly, by action or inaction), that she is a boy. G.G.'s

[7] Nonetheless, gender affirmance is on the rise – particularly among children. Chris Smyth, Better Help Urged for Children With Signs of Gender Dysphoria, The Times (London), October 25, 2013, http://www.thetimes.co.uk/tto/health/news/article3903783.ece (stating that the United Kingdom saw a fifty percent increase in the number of children referred to gender dysphoria clinics from 2011 to 2012). There are now forty gender clinics across the United States that provide and promote gender-affirming treatments. Cretella, supra, at 52.

false belief would thus be perpetuated through name and pronoun changes, the "successful" impersonation of the opposite sex within and outside of the home, and "acceptance" (forced, from some) by others that she is really a male. This could be viewed as a necessary but basically harmless expedient, a bit of playacting to help those like G.G. to feel better about themselves during a difficult time in their lives.

There is substantial evidence, however, that this approach is harmful – even when it is viewed on its own terms as a way to help the afflicted child get through a tough time. The American College of Pediatricians recently declared:

> There is an obvious self-fulfilling nature to encouraging young [gender dysphoric] children to impersonate the opposite sex and then institute pubertal suppression. If a boy who questions whether or not he is a boy (who is meant to grow into a man) is treated as a girl, then has his natural pubertal progression to manhood suppressed, have we not set in motion an inevitable outcome? All of his same- sex peers develop into young men, his opposite sex friends develop into young women, but he remains a pre-pubertal boy. He will be left psycho-socially isolated and alone.[8] American College of Pediatricians, supra.

It is well-recognized, too, that repetition has some effect on the structure and function of a person's brain. This phenomenon, known as neuroplasticity, means that

[8] G.G., for example, refuses to use any of the three unisex restrooms made available to all students at her school, because doing so made her feel "stigmatized and isolated." App. 151a. It is not meant as a criticism of G.G. to observe that the real source of her feelings of "isolation" may have nothing to do with using a restroom meant for anyone who needs or wants a bit more privacy.

a child who is encouraged to identify with the opposite sex may be less likely to reverse course later in life.[9] For instance, if a boy repeatedly behaves as a girl, his brain is likely to develop in such a way that eventual alignment with his biological sex is less likely to occur. Cretella, supra, at 53. Obviously then, some number of gender dysphoric children who would naturally come to peacefully accept their true sex would be prevented from doing so by the gender-affirming policies which this court is being asked to mandate.

Policies that encourage gender dysphoric children to pursue transgender lifestyles do not exist in an ideological vacuum. Because they are not supported by medical or scientific evidence, one should not be surprised to discover that such policies are nested within a larger ideology about how to "help" children who believe that they are trapped in the wrong bodies. Although these gender-affirming policies do not themselves require pharmaceutical or surgical interventions, corresponding medical treatments – puberty suppression, hormone therapy, and surgical interventions – are a common complement. The more that gender affirmance is

[9] One study showed that the white matter microstructure of specific brain areas in female-to-male transsexuals was more similar to that of heterosexual males than to that of heterosexual females. See Giuseppina Rametti et al., White Matter Microstructure in Female to Male Transsexuals Before Cross-sex Hormonal Treatment. A Diffusion Tensor Imaging Study, 45 J. of Psychiatric Res. 199-204 (2011). The results of that study may be explained by neuroplasticity.

promoted to children, the more that children can be expected to accept, and even to pursue, these drastic medical courses.

The gender dysphoric child, if surrounded by adults and peers who go along with his or her cross-gender identification, is likely to perceive natural biological development as a source of distress. Puberty suppressing hormones are then typically used, beginning at age eleven, to prevent the appearance of natural but (in this case) unwanted characteristics of any maturing member of the child's sex. Henriette A. Delemarre-van de Waal and Peggy T. Cohen-Kettenis, Clinical Management of Gender Identity Disorder in Adolescents: A Protocol on Psychological and Pediatric Endocrinology Aspects, 155 Eur. J. of Endocrinology S131, S132 (2006). Then, starting at age sixteen, cross-sex hormones are administered in order to induce something like the process of puberty that would normally occur for the opposite sex. Id. at S133.

Dr. Michelle Cretella, President of the American College of Pediatricians, has written that these medical treatments are "neither fully reversible nor harmless." Cretella, supra, at 53. Puberty suppression hormones prevent the development of secondary sex characteristics, arrest bone growth, decrease bone accretion, prevent full organization and maturation of the brain, and inhibit fertility. Id. Cross-gender hormones increase a child's risk for coronary disease and sterility. Id. at 50, 53. Oral estrogen, which is administered to gender dysphoric boys, may cause thrombosis, cardiovascular disease, weight gain, hypertriglyceridemia, elevated blood pressure,

decreased glucose tolerance, gallbladder disease, prolactinoma, and breast cancer. Id. at 53 (citing Eva Moore et al., Endocrine Treatment of Transsexual People: A Review of Treatment Regimens, Outcomes, and Adverse Effects, 88 J. of Clin. Endocrinology & Metabolism 3467-73 (2003)). Similarly, testosterone administered to gender dysphoric girls may negatively affect their cholesterol; increase their homocysteine levels (a risk factor for heart disease); cause hepatotoxicity and polycythemia (an excess of red blood cells); increase their risk of sleep apnea; cause insulin resistance; and have unknown effects on breast, endometrial and ovarian tissues. Id. (citing Moore, supra, at 3467-73). Finally, girls may legally obtain a mastectomy at sixteen, which carries with it its own unique set of future problems, especially because it is irreversible. Id. (citing Lauren Schmidt, Psychological Outcomes and Reproductive Issues Among Gender Dysphoric Individuals, 44 Endocrinology Metabolism Clinics of N. Am. 773-85 (2015).

The Hayes Directory reviewed all the relevant literature on these treatments in 2014 and gave them its lowest possible rating: the research findings were "too sparse" and "too limited" to suggest conclusions. Hayes, Inc., "Hormone Therapy for the Treatment of Gender Dysphoria," Hayes Medical Technology Directory (2014). Children are not legally capable of assessing the severity of these risks or weighing the perceived bene- fits (if any) of gender affirmance against their many harms. Neurologically, the adolescent brain is immature and lacks an adult capacity for risk assessment prior to the early to mid-20s. Cretella, supra, at 53. Yet, gender-affirming

policies urge gender dysphoric children to forgo their fertility and jeopardize their physical health in order to avoid the psychological distress of natural physical development.

Parents or guardians would, of course, have to consent to these interventions for their minor children. Assuming, then, that these adults have the true best interests of their children at heart, how many of them are going to be well-informed of the truth about gender dysphoria, especially where their children have already been treated (at school, and any- where else that the court's mandate runs) as members of the sex to which these interventions promise greater access?

Finally, gender-affirming policies aggressively pro- mote the false notion that a child or teen such as G.G. is trapped in the wrong body; indeed, that is precisely these policies' presupposition, even their raison d'etre. Naturally, then, many gender dysphoric children will seek (once they reach the age of maturity) the closest thing to their desired body which modern medicine can offer them. Simply put: policies such as those at issue in this lawsuit will cause some young adults who would have realigned with their true sex to instead at- tempt to change it through surgery.

Sadly, there is little evidence that this dramatic surgery produces lasting benefits.[10] Upon reviewing all the evidence for the beneficial effects of attempted sex reassignment surgery, the Hayes Directory stated that "only weak conclusions" were possible, due to "serious limitations" in the research to date. Hayes, Inc., "Sex Reassignment Surgery for the Treatment of Gender Dysphoria," Hayes Medical Technology Directory (2014); see also Cecilia Dhejne et al., Long-Term Fol- low-up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden, PLoS ONE, Feb. 22, 2011 (suggesting that sex reassignment surgery may not rectify the comparatively poor health outcomes associated with transgender populations); Annette Kuhn et al., Quality of Life 15 Years After Sex Reassignment Surgery for Transsexualism, 92 Fertility & Sterility 1685-89 (2009) (finding considerably lower general life satisfaction in post-surgical transsexuals as compared with females who had at least one pelvic surgery in the past); Jon K. Meyer and Donna J. Reter, Sex Reassignment: Follow-up, 36 Archives of Gen. Psychiatry 1010-15 (1979) (in an assessment comparing the well-being of post-operative transsexuals to transsexuals who did not have surgery, concluding that "sex reassignment surgery confers no objective advantage in terms of social rehabilitation").

[10] One study (Annelou L.C. de Vries et al., "Young Adult Psychological Outcomes After Puberty Suppression and Gender Reassignment,"134 Pediatrics 696-704 (2014)) reported some short-term benefits. But the authors made no effort to assess long-term effects, and their study was, in any event, not properly controlled.

There is considerable evidence, on the other hand, that "sex-change" surgery poses very serious health risks. See David Batty, Mistaken Identity, The Guardian, July 30, 2014, http://www.theguardian.com/society/2004/jul/31/health.socialcare (in an assessment of more than 100 follow-up studies on post-operative transsexuals, concluding that none of the studies proved that sex reassignment is beneficial for patients or thoroughly investigated "[t]he potential complications of hormones and genital surgery, which include deep vein thrombosis and incontinence"). One "risk" is for sure: anyone who goes through with "sex-change" surgery will never be able to engage in a reproductive sexual act.

CONCLUSION

G.G. would have this court mandate an experimental "one-size-fits-all" policy of gender affirmance. Underlying that proposed directive is the assumption that treating gender dysphoric children in accordance with their gender identity rather than their biological sex is beneficial to them. But there is no scientific evidence to support this conclusion … on the contrary, the evidence shows that affirming a child's cross-gender identification - that he or she is a prisoner of the wrong body - is ultimately harmful to that child.

Amici agree with the American College of Pediatricians' conclusion that conditioning children into believing that a lifetime of identifying with the opposite

sex, achievable only through chemical and surgical interventions, could be regarded as a form of child abuse.

CERTIFICATE OF COMPLIANCE

The undersigned certify that this brief complies with the word length limit for Amicus Briefs (6.500 words, *i.e.*, ½ of the 13,000-word limit for principal briefs.) *See* Fed. R. App. P. 29(a)(5); 32(a)(7)(B)(i). This Brief has 5,106 words exclusive of the portions enumerated in Fed. R. App. P. 32(f).

Respectfully submitted, May 15, 2017

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