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# Not this Child: Constitutional Questions in Regulating Non-Invasive Prenatal Genetic Diagnosis and Selective Abortion

Jaime S. King

*UC Hastings College of the Law*, [kingja@uchastings.edu](mailto:kingja@uchastings.edu)

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# Not This Child: Constitutional Questions in Regulating Noninvasive Prenatal Genetic Diagnosis and Selective Abortion



Jaime Staples King

## ABSTRACT

Recent developments in abortion politics and prenatal genetic testing are currently on a collision course that has the potential to change the way we think about reproduction and reproductive rights. In the fall of 2011, the first noninvasive prenatal genetic test for Down syndrome entered the commercial market, offering highly accurate prenatal genetic tests from a sample of a pregnant woman's blood without posing a risk to the fetus or the mother. In the last five years, over fifty biotechnology start-ups have been created to offer noninvasive prenatal diagnosis (NIPD) for an ever-widening range of genetic and chromosomal conditions. Because of its noninvasive nature, relatively low cost, and early timing, NIPD has the potential to become standard prenatal care for all pregnant women, providing them information on hundreds of genetic and chromosomal characteristics of their prospective offspring soon after they discover the pregnancy. Moreover, the technological development of NIPD has occurred alongside a significant political development: A handful of states have passed or attempted to pass legislation that restricts abortion based on the reasons for which it was sought. These laws have mainly prohibited abortions sought for sex- or race-based reasons, but proposed legislation would also restrict abortions sought for a wider range of genetic conditions.

The collision of these political and technological developments raises two questions regarding reproductive autonomy: (1) whether the Fourteenth Amendment protects a woman's right to abort a fetus for any reason; and (2) whether that protection includes the right to access genetic tests that could inform the abortion decision. This Article argues for the reaffirmation of a woman's right to choose to abort for any reason and grounds that right in strong principles of liberty and autonomy, rather than sex equality. In the context of reproductive genetic testing, the Article identifies a legitimate state interest, previously unrecognized in abortion jurisprudence, in avoiding significant harm to society based on widespread discriminatory selective abortion. The Article then proposes a new framework for examining the regulation of reproductive genetic testing that balances the relevant state and individual interests in a novel manner.

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## AUTHOR

Jaime Staples King is an Associate Professor of Law at UC Hastings College of the Law and Associate Director of the UCSF/UC Hastings Consortium for Law, Science, and Health Policy.

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## INTRODUCTION

Recent developments in prenatal genetic testing and abortion politics have the potential to redefine the way we think about reproduction and reproductive rights. In late 2009, a bipartisan majority of the Oklahoma state legislature passed the Statistical Reporting of Abortion Act,<sup>1</sup> which, among other things, prohibited any abortion provider from knowingly performing an abortion sought solely because of the fetus's sex.<sup>2</sup> With respect to the ban on sex-selective abortions, Daniel Sullivan, a member of the Oklahoma House of Representatives, stated, "As designer babies become more prevalent, we must do all we can to ensure unborn children are not killed because a dad always dreamed of having a son."<sup>3</sup>

In response to the Oklahoma law's passage, a number of other state legislatures have introduced bills that seek to regulate abortions sought for reasons the state deems inappropriate.<sup>4</sup> I refer to these types of restrictions as reasons-based abortion prohibitions (RBAPs). Most RBAPs ban providers from performing an abortion if they know a woman seeks the procedure because of her fetus's sex or race.<sup>5</sup> However, Americans United for Life, a high-profile political group, drafted model legislation to encourage states to prohibit abortions sought because of any genetic anomaly.<sup>6</sup> In March 2012, John McCaherty, a member of the Missouri House of Representatives, adopted much of the language proposed by Americans United for Life and introduced the Abortion Ban for Sex Selection and Genetic Abnormalities Act of 2012<sup>7</sup> to prohibit an abortion solely because of the unborn child's sex or a genetic-abnormality diagnosis.<sup>8</sup>

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1. H.B. 1595, 52d Leg., 1st Sess. (Okla. 2009).

2. *Id.*

3. Press Release, Okla. House of Representatives, Pro-Life Legislation Passes House Committee (Feb. 17, 2009), <http://www.okhouse.gov/OkhouseMedia/ShowStory.aspx?MediaNewsID=2936>.

4. Susan B. Anthony and Frederick Douglass Prenatal Nondiscrimination Act, H.B. 2443, 50th Leg., 1st Sess. (Ariz. 2011); *see also* AMERICANS UNITED FOR LIFE, BAN ON ABORTIONS FOR SEX SELECTION AND GENETIC ABNORMALITIES: MODEL LEGISLATION & POLICY GUIDE FOR THE 2012 LEGISLATIVE YEAR 13 (2011).

5. AMERICANS UNITED FOR LIFE, *supra* note 4, at 2.

6. *Id.* at 9.

7. H.B. 1933, 96th Gen. Assemb., 2d Reg. Sess. (Mo. 2012).

8. Public hearings were held on May 2, 2012 to discuss the implications of the bill. *Activity History for HB 1933*, MO. HOUSE REPS., <http://www.house.mo.gov/BillActions.aspx?bill=HB1933&year=2012&code=R> (last visited Sept. 15, 2012).

The growing state interest in regulating abortions sought for certain reasons coincides with a recent development in prenatal genetic testing, known as noninvasive prenatal diagnosis (NIPD),<sup>9</sup> which has the potential to provide parents with a large amount of genetic information about their fetus early in the first trimester.<sup>10</sup>

To understand the significance of these scientific developments, consider the following hypothetical that envisions the potential capabilities NIPD may have in the future.<sup>11</sup> Imagine discovering that you or your partner is pregnant. At your first obstetrical appointment, your doctor sends you to the laboratory to confirm the pregnancy and to conduct a number of blood tests. Within two weeks, you receive a report describing hundreds of genetic characteristics. You learn that the fetus is a girl with no major genetic or chromosomal disorders, but she has genes associated with an increased risk of a peanut allergy, eczema, and anxiety. She will have blond hair, brown eyes, and fair skin. She will have a 40 percent chance of developing a significant learning disability, but she also has a rare constellation of alleles believed to be associated with musical giftedness. You are also informed that you have a range of options. You may continue the pregnancy, or you can elect to terminate. If you decide to terminate very quickly, you may take pills to induce a medical abortion. If you decide to wait to terminate, you will need a surgical abortion. How will you weigh these options?

Of course, you might not have all of these options—it depends on how the government responds to widespread availability of NIPD. Should the government regulate to protect society from the potential harms brought about by the aggregated individual decisions that NIPD makes possible? Can it pass laws to restrict access to selective abortion or NIPD? How will the development of NIPD affect our reproductive rights? This Article begins the discussion of such questions and proposes a framework for balancing the relevant interests at stake with respect to regulation of NIPD testing.

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9. Noninvasive means noninvasive of the uterus, rather than noninvasive of the body, as retrieving blood from the mother will still require a needle stick. This technology is generally referred to in the literature as noninvasive prenatal diagnosis (NIPD). I use this terminology in this Article, but I use it in a way that captures testing for genes associated with all genetic conditions, including nonmedical conditions and predispositions to disease, not just those for which the test provides a diagnosis of a disease. A growing, but smaller, subset of the literature refers to the technology as noninvasive prenatal testing (NIPT).
  10. Caroline Wright, *Non-invasive Prenatal Diagnosis Hits the National News*, PHG FOUND. (June 23, 2008), <http://www.phgfoundation.org/news/4252>.
  11. Currently, NIPD testing cannot offer information on all of these conditions. Each of these conditions, however, has a genetic component, such that testing for a predisposition to such conditions may be possible in the future.



Advances in technology often drive change within the law. This is especially true in the reproductive rights realm. The development of the birth control pill made contraception socially ubiquitous and eventually led to the U.S. Supreme Court's decision in *Griswold v. Connecticut*<sup>12</sup> to invalidate state bans on contraception use. Improvements in perinatology and neonatology enabled babies born earlier and earlier to survive outside the womb.<sup>13</sup> These improvements challenged the trimester framework established in *Roe v. Wade*,<sup>14</sup> which contributed to the Supreme Court's decision in *Planned Parenthood of Southeastern Pennsylvania v. Casey*<sup>15</sup> to establish a viability standard to identify the moment when the government's interest in protecting unborn fetal life becomes compelling enough to prohibit abortion.<sup>16</sup> Since that time, in nearly all states, a woman has been able to have an abortion for any reason prior to the fetus becoming viable outside the woman's womb.<sup>17</sup>

However, the recent state interest in regulating the reasons for seeking abortion and the introduction of NIPD provide an impetus to reconsider the bounds of reproductive autonomy. As reproductive technologies provide pregnant women with more and more information about their fetuses, the scope of decisions women face will also expand.<sup>18</sup> NIPD has the potential to enable a woman to test her fetus for hundreds of genetic and chromosomal<sup>19</sup> conditions soon after

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12. 381 U.S. 479, 485–86 (1965).
  13. Fergus Walsh, *Prem Baby Survival Rates Revealed*, BBC NEWS (Apr. 11, 2008, 4:05 PM), <http://news.bbc.co.uk/2/hi/health/7340288.stm> (quoting Professor Kate Costeloe, a neonatal pediatrician: "There has been a statistically significant increase in survival at 24 and 25 weeks, but not at 23 weeks."); *Early Baby Survival 'Unchanged'*, BBC NEWS (May 9, 2008, 1:26 PM), <http://news.bbc.co.uk/2/hi/health/7390522.stm> ("For 24-week babies, survival rose from 24 to 41%, while for 25-week babies it went up from 52 to 63%. There was no change in the proportion of babies born at 23 weeks surviving, remaining at just under 20%.").
  14. 410 U.S. 113, 164–65 (1973).
  15. 505 U.S. 833 (1992).
  16. *Id.* at 860.
  17. *Doe v. Bolton*, 410 U.S. 179, 221 (1973) (White, J., dissenting) (stating that when an abortion is sought because of "convenience, family planning, economics, dislike of children, the embarrassment of illegitimacy, . . . for any one of such reasons, or for no reason at all, . . . any woman is entitled to an abortion at her request").
  18. Reproductive testing technologies include prenatal genetic testing, ultrasound, and urinalysis. *Prenatal Testing*, REPROD. HEALTH TECHS. PROJECT, <http://www.rhnp.org/fertility/prenatal/default.asp> (last visited Aug. 17, 2012).
  19. Humans have forty-six chromosomes, twenty-three from their mother and twenty-three from their father. The chromosomes are long strands of genes. In each of the approximately twenty thousand genes composing each chromosome there is a genetic code that guides growth, development, or health. See CTR. FOR GENETICS EDUC., GENES AND CHROMOSOMES: THE GENOME (2012), available at <http://www.genetics.edu.au/pdf/factsheets/fs01.pdf>. For brevity, I refer to

discovering she is pregnant.<sup>20</sup> This development raises two questions regarding reproductive autonomy: (1) whether the Fourteenth Amendment protects a woman's right to abort a viable fetus for any reason; and (2) whether that protection includes the right to access genetic tests that could inform abortion and other decisions. If NIPD fulfills its potential, it has the capacity to revolutionize both the way we have children and the way we conceptualize reproductive rights.<sup>21</sup> Its recent entry into the prenatal genetic testing market makes this the perfect time to consider its potential impact at both an individual and societal level.

This Article analyzes the states' ability to restrict a woman's right to have an abortion for specific reasons as well as their ability to prohibit NIPD testing for certain conditions that might serve as a basis for seeking an abortion. Part I briefly describes NIPD and how it differs from current prenatal genetic testing techniques.<sup>22</sup> Part II examines two main theories underlying abortion jurisprudence, reproductive autonomy and sex equality, and assesses their applicability to reproductive genetic testing. Part III canvasses existing reasons-based abortion prohibitions and explores the constitutional and practical challenges to their enforcement. Despite potential arguments in favor of upholding some RBAPs, I argue that RBAPs should be held unconstitutional to protect a woman's autonomy and bodily integrity, to preserve the integrity of the physician-patient relationship, and to avoid claims of state-supported eugenics. Part IV then examines the possibility of state regulation of NIPD procedures. In Part IV, I propose a new framework for analyzing Fourteenth Amendment challenges to regulations that limit access to reproductive testing procedures rather than to abortion itself. The new framework is based on intermediate scrutiny review with an exceedingly persuasive justification<sup>23</sup> rather than on the undue burden test applied to abortion regulations.<sup>24</sup> This exceedingly persuasive justification standard will allow for a more nuanced

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genetic characteristics in the Article as a shorthand for both genetic and chromosomal characteristics.

20. CAROLINE WRIGHT, PHG FOUND., CELL-FREE FETAL NUCLEIC ACIDS FOR NON-INVASIVE PRENATAL DIAGNOSIS: REPORT OF THE UK EXPERT WORKING GROUP 16 (2009), available at <http://www.phgfoundation.org/file/5059> (stating that NIPD could be performed as early as seven weeks from the start of the woman's last menstrual period).
21. See Jack M. Balkin, *How New Genetic Technologies Will Transform Roe v. Wade*, 56 EMORY L.J. 843, 844 (2007).
22. For a more detailed discussion of NIPD technology and its capabilities, see Jaime S. King, *And Genetic Testing for All . . . The Coming Revolution in Non-invasive Prenatal Genetic Testing*, 42 RUTGERS L.J. 599 (2011).
23. I refer to this framework as the "exceedingly persuasive justification" standard throughout the Article.
24. For a more detailed discussion of the undue burden standard, see *infra* notes 173-180 and accompanying text.

balancing of the array of interests held by the state and the pregnant woman than the undue burden test permits, while permitting state interference only in rare cases. As part of this framework, I describe a new state interest that could justify the state's ability to act to protect societal integrity when reliable evidence demonstrates a discriminatory or otherwise harmful trend developing in NIPD practices that a narrowly tailored government regulation could alleviate. Finally, I provide three examples of how the exceedingly persuasive justification standard would apply to regulations of NIPD.

## I. NONINVASIVE PRENATAL DIAGNOSIS— A TECHNOLOGICAL ADVANCE

Reproductive genetic testing, in a variety of forms, has been possible for over forty years,<sup>25</sup> but its use has been limited by the risks and discomfort associated with diagnostic prenatal genetic testing, the timing of some procedures, the range of conditions for which testing is appropriate, and the cost of the diagnostic testing.<sup>26</sup> NIPD, the most recent iteration of reproductive genetic testing, eliminates many of these obstacles and thereby has the potential to increase both the number of pregnant women having prenatal genetic tests and the genetic information for which they are willing to test.<sup>27</sup>

### A. The Limits of Current Prenatal Genetic Testing Technologies

The best way to understand the advantages of NIPD is to understand the limitations of current reproductive genetic testing technologies. Most of the limitations result from the difficulty of obtaining the fetal DNA required to perform the genetic tests.<sup>28</sup> Pregnant women can currently take one of three paths with respect to prenatal genetic testing. First, they can forgo it all together. Women who select this option may do so either because testing is financially or logistically inaccessible, or because they know they would not abort the fetus for any reason and would not want to spend their pregnancy worrying that their fetus is at elevated risk for a genetic disorder. Second, pregnant women who know they want diagnostic information about their fetus as early as possible can opt to have chorionic

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25. See Joseph Woo, *A Short History of Amniocentesis, Fetoscopy and Chorionic Villus Sampling*, <http://www.ob-ultrasound.net/amniocentesis.html> (last visited Aug. 18, 2012).

26. See King, *supra* note 22, at 599.

27. For a more detailed discussion of the impact of NIPD on prenatal testing, see *id.* at 599–602.

28. See Henry T. Greely, *Get Ready for the Flood of Fetal Gene Screening*, 469 NATURE 289, 289–90 (2011).

villus sampling (CVS) from ten to fourteen weeks gestation.<sup>29</sup> CVS is an invasive procedure that uses a needle or a tube inserted through the cervix to retrieve fetal cells from the placenta for genetic testing. The procedure costs around \$1500, can be uncomfortable for the woman, and has about a 1 percent risk of causing a miscarriage.<sup>30</sup> Generally, women who choose to have CVS do so because they have a family history of a genetic disorder or they are at advanced maternal age, which places their fetus at elevated risk for Down syndrome and other disorders.<sup>31</sup>

However, most pregnant women take the third path—prenatal genetic screening, which provides them with risk information on whether the fetus will have any of a handful of genetic disorders.<sup>32</sup> Screening reveals only probabilities, such as whether there is a one in thirteen, one in two hundred, or one in ten thousand chance that the fetus will be born with the disorder. If a pregnancy screens high risk, the mother will be offered amniocentesis.<sup>33</sup> Prior to NIPD, the most accurate prenatal screening protocol was sequential integrated screening, which combines the results of a first trimester blood test, an ultrasound, and a second trimester blood test to determine a fetus's risk.<sup>34</sup> Even at its most accurate, however, prenatal screening can give false negative results. To accommodate for the error rate of the test, prenatal screening programs often create positive screening thresholds that are overinclusive to try to capture a majority of affected fetuses. For instance, in some testing programs, women with a greater than one in 270 risk

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29. See CAL. DEP'T OF PUB. HEALTH, THE CALIFORNIA PRENATAL SCREENING PROGRAM: RESULTS FOR SCREENING IN THE FIRST TRIMESTER—THE RESULT OF YOUR BLOOD SCREENING TEST IS: "SCREEN POSITIVE FOR DOWN SYNDROME" 4 (2009), available at [http://www.cdph.ca.gov/programs/pns/Documents/1T\\_T21\\_PMS228\\_PRINT\\_FINAL.pdf](http://www.cdph.ca.gov/programs/pns/Documents/1T_T21_PMS228_PRINT_FINAL.pdf).

30. See Aaron B. Caughey et al., *Chorionic Villus Sampling Compared With Amniocentesis and the Difference in the Rate of Pregnancy Loss*, 108 *OBSTETRICS & GYNECOLOGY* 612, 612–16 (2006). The precise risk varies significantly with the provider's experience but can be as high as 3–5 percent. In addition, in many geographic areas it is often difficult to find a provider who will perform a CVS because of the malpractice risk.

31. See Shane W. Wasden et al., *Are Age Cutoffs Still Used to Identify Candidates for Invasive Testing for Chromosomal Abnormalities?*, 56 *J. REPROD. MED.* 113, 113 (2011).

32. *Pregnancy Week by Week—Is Prenatal Screening Right for You?*, MAYO CLINIC, <http://www.mayo-clinic.com/health/prenatal-testing/PR00014> (stating that prenatal screening has become routine in most pregnancies) (last visited Sept. 15, 2012). The California Prenatal Screening Program, for example, screens for open neural tube defects, abdominal wall defects, Down syndrome, Trisomy 18, and Smith-Lemli-Optiz Syndrome. *Prenatal Screening Program*, CAL. DEP'T PUB. HEALTH, <http://www.cdph.ca.gov/programs/pns/Pages/default.aspx> (last visited Aug. 18, 2012). Other programs may screen for fewer conditions.

33. CAL. DEP'T OF PUB. HEALTH, *supra* note 29, at 7. During amniocentesis, the physician inserts a needle through the pregnant woman's abdomen into the placenta to retrieve amniotic fluid, which contains fetal DNA.

34. *Prenatal Screening Program*, *supra* note 32.

of their fetus having Down syndrome will screen positive for the disorder.<sup>35</sup> As a result, the vast majority of women who screen positive for a specific condition will not have an affected fetus.<sup>36</sup> To know for sure, women with high-risk pregnancies must undergo invasive prenatal diagnosis (IPD) via amniocentesis.

The decision to have amniocentesis is not always easy. If a fetus screens positive for a specific disorder, then the woman will likely receive genetic counseling to help her determine whether she prefers to have an amniocentesis or wait until the baby is born for diagnostic information. Like CVS, amniocentesis is an uncomfortable, invasive procedure that has a risk of miscarriage between 0.13 percent and 1 percent.<sup>37</sup> Timing is also an issue. The earliest that sequential integrated screening can be completed is fifteen to sixteen weeks gestation, well into the second trimester. Once the results are available, the pregnant woman must process the information and determine whether she wishes to terminate the pregnancy by twenty-four weeks gestation.<sup>38</sup>

In sum, current prenatal diagnosis techniques are invasive, present a small but not insignificant risk of miscarriage, and are most frequently performed in the middle to end of the second trimester. Each of these factors limits the number of women who receive genetic information through IPD and the reasons for which they would test.<sup>39</sup> First, the discomfort of the procedure and the risk of miscarriage may discourage many women from receiving any form of IPD unless a serious genetic or chromosomal disorder runs in their family or they screen high risk for a

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35. CAL. PAC. MED. CTR., INTEGRATED SCREENING FOR DOWN SYNDROME (2007), available at <http://www.cpmc.org/learning/documents/intscreen-ws.pdf>. Other programs do not consider a woman to have screened positive until her risk is greater than one in one hundred. Letter From San Francisco Perinatal Associates to author (June 1, 2009) (on file with author).

36. See Letter From San Francisco Perinatal Associates to author, *supra* note 35.

37. CAL. DEP'T OF PUB. HEALTH, *supra* note 29, at 7; see Caughey et al., *supra* note 30 (citing the twenty-year risk of miscarriage with amniocentesis at 0.8 percent).

38. Most states determine viability to be around twenty-four to twenty-six weeks gestation, which is measured from the first day of the woman's last menstrual period. However, nine states have recently banned abortions at twenty-two weeks gestation on the basis of fetal pain, which will significantly constrain a woman's ability both to receive prenatal screening, genetic counseling, and amniocentesis and to make a termination decision prior to the legal cutoff for abortion. These laws often count fetal weeks in terms of the date of conception, rather than gestation, which is more commonly used in prenatal care. This would make these laws appear relevant to fetuses two weeks earlier. ALA. CODE § 26-23B-5 (LexisNexis Supp. 2011); GA. CODE ANN. § 16-12-141 (Supp. 2011); IDAHO CODE ANN. § 18-505 (LexisNexis Supp. 2012); IND. CODE ANN. § 16-34-2-1 (LexisNexis 2011); KAN. STAT. ANN. § 65-6724 (Supp. 2011); N.C. GEN. STAT. § 14-45.1 (2011); NEB. REV. STAT. § 28-3,106 (2010); OKLA. STAT. ANN. tit. 63, § 1-745.5 (West Supp. 2011); Act of Apr. 12, 2012, ch. 250, § 7, 2012 Ariz. Legis. Serv. 995, 1007-08 (West) (to be codified at ARIZ. REV. STAT. § 36-2159).

39. For a more detailed discussion of the limits that current prenatal testing protocols place on reproductive genetic testing, see King, *supra* note 22, at 613-14.

disease that would cause them to consider pregnancy termination.<sup>40</sup> For some women who screen positive, many of whom are older and toward the end of their reproductive years, the risk of miscarriage is too high to proceed with IPD via amniocentesis.<sup>41</sup> Second, the risk of amniocentesis also limits the range of conditions for which physicians will offer IPD, as ethically they are required to weigh the risks of the procedure against the informational benefits IPD provides.<sup>42</sup> Third, all pregnant women may not have insurance coverage for IPD, making it financially out of reach. Fourth, the timing of both CVS and amniocentesis would require a woman seeking termination to have a surgical abortion rather than a medical abortion.<sup>43</sup> Moreover, abortions have greater risks and are more complicated as the gestational age of the fetus increases.<sup>44</sup> Finally, the majority of women who opt for IPD via amniocentesis only after screening high risk would be considering an abortion at about eighteen to twenty-two weeks. At this point in the pregnancy, when most women are visibly pregnant and have told others of the pregnancy, they are more likely to decide to test based on being at risk for severe or life-threatening conditions, as many have decided to keep their pregnancies barring extenuating circumstances. As a result, the timing might reduce the range of conditions that women would test for through amniocentesis and the range of conditions on which women would base their decisions to terminate the pregnancy.<sup>45</sup> Indeed, in 2009, physicians performed invasive diagnostic prenatal genetic testing on just under 2 percent of all fetuses.<sup>46</sup>

## B. Noninvasive Prenatal Genetic Diagnosis

NIPD has the potential to alleviate many of the barriers to accessing diagnostic genetic information prenatally. About ten years ago, researchers discovered

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40. “[M]ost women presenting for invasive prenatal testing . . . are more likely to be those at high risk of genetic disorders (as a result of prohibitive costs and other factors) . . .” Oladapo OT, *Amniocentesis and Chorionic Villus Sampling for Prenatal Diagnosis*, WHO REPROD. HEALTH LIBR. (Apr. 1, 2009), [http://apps.who.int/whl/pregnancy\\_childbirth/fetal\\_disorders/prenatal\\_diagnosis/CD003252\\_Oladapot\\_com/en/index.html](http://apps.who.int/whl/pregnancy_childbirth/fetal_disorders/prenatal_diagnosis/CD003252_Oladapot_com/en/index.html); see also Antina de Jong et al., *Non-invasive Prenatal Testing: Ethical Issues Explored*, 18 EUR. J. HUM. GENETICS. 272, 273–74 (2010).

41. See Wasden et al., *supra* note 31, at 115.

42. See Dagmar Schmitz et al., Commentary, *No Risk, No Objections? Ethical Pitfalls of Cell-Free Fetal DNA and RNA Testing*, 339 BRIT. MED. J. 165, 165 (2009).

43. See *Medical Versus Surgical Abortion*, UCSF MED. CTR., <http://www.ucsfhealth.org/adult/edu/abortion.html> (last visited Aug. 18, 2012).

44. A. Hall et al., *Non-invasive Prenatal Diagnosis Using Cell-Free Fetal DNA Technology: Applications and Implications*, 13 PUB. HEALTH GENOMICS 246, 249 (2010).

45. See generally King, *supra* note 22, at 613–14.

46. See Greely, *supra* note 28, at 289.

that a pregnant woman's blood also has fragments of DNA from the fetus she carries.<sup>47</sup> Collection and analysis of this cell-free fetal DNA (cffDNA) makes NIPD possible. Currently, NIPD can be used as a highly accurate screening test for fetal RhD blood typing, sex, paternity, and several chromosomal disorders, including Down syndrome (Trisomy 21), Edwards syndrome (Trisomy 18), Patau syndrome (Trisomy 13), and Turner Syndrome (Monosomy X).<sup>48</sup> While NIPD has been available for the past four years to determine fetal RhD blood typing and sex, the recent availability of screening for chromosomal disorders marks a substantial step toward NIPD becoming the standard of care for a significant number of pregnant women.<sup>49</sup> NIPD for single-gene conditions, like Tay-Sachs disease and cystic fibrosis, is not currently offered commercially, but it is likely to be available in the next few years.<sup>50</sup> In addition, the University of Washington recently sequenced the entire fetal genome from a maternal blood sample, indicating that whole fetal genome sequencing may be commercially available sometime in the more distant future.<sup>51</sup> In comparison to its predecessors, three features of NIPD—its risks, timing, and cost—significantly distinguish it from current prenatal genetic testing in ways that are likely to increase both the number of women receiving prenatal genetic testing and the scope of conditions tested for.<sup>52</sup>

### 1. Risks

NIPD poses minimal risks to the mother and fetus. A lab technician can take the blood sample required for NIPD at the same time as she draws blood for

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47. Y.M. Dennis Lo et al., *Maternal Plasma DNA Sequencing Reveals the Genome-Wide Genetic and Mutational Profile of the Fetus*, SCI. TRANSLATIONAL MED., Dec. 8, 2010, 61ra91, at 1, 1.
  48. See *MaterniT21 PLUS*, SEQUENOM CTR. FOR MOLECULAR MED., <http://www.sequenomcmm.com/home/health-care-professionals/trisomy-21/about-the-test> (last visited Aug. 18, 2012); *Patients Overview*, VERINATA HEALTH, <http://www.verinata.com/patients/patients-overview> (last visited Aug. 18, 2012); *SensiGene Fetal RHD Genotyping*, SEQUENOM CTR. FOR MOLECULAR MED., <http://www.sequenomcmm.com/home/health-care-professionals/fetal-rhd-genotyping> (last visited Aug. 18, 2012). A trisomy indicates that the fetus has three copies of a particular chromosome. Therefore, a fetus with Trisomy 13 has three copies of the 13th chromosome. Whereas, Monosomy X means the fetus has only one X chromosome, while normal individuals are XX or XY.
  49. For a detailed description of NIPD's current and future potential, see generally King, *supra* note 22.
  50. A. Bustamante-Aragónés et al., *Non-invasive Prenatal Diagnosis of Single-Gene Disorders From Maternal Blood*, 504 GENE 144 (2012) (discussing the progression of noninvasive prenatal diagnostic testing that incorporates the analysis of single gene disorders with a paternal origin to incorporating maternally inherited fetal tracts in the future).
  51. Jacob O. Kitzman et al., *Noninvasive Whole-Genome Sequencing of a Human Fetus*, SCI. TRANSLATIONAL MED., June 6, 2012, 137ra76, at 1, 1.
  52. King, *supra* note 22, at 620.

numerous other pregnancy-related tests. NIPD for chromosomal abnormalities is significantly more accurate than current prenatal screening techniques; therefore fewer women will screen high risk.<sup>53</sup> If fewer women screen high risk following NIPD, then fewer women will be offered IPD and face the decision of risking a miscarriage to receive diagnostic genetic test results.<sup>54</sup> The lack of risk and near-diagnostic accuracy associated with NIPD will change the calculus for receiving prenatal genetic information for many women.<sup>55</sup> While only 2 percent of women nationwide elect to have IPD, in California, where physicians are required by law to offer all pregnant women prenatal screening through a blood test, approximately 70 percent accept.<sup>56</sup> While California's data may overestimate the interest in and availability of prenatal genetic testing nationally, this finding does demonstrate pregnant women's willingness to undergo a blood test to find out genetic information (even probabilistic information) about their fetus.<sup>57</sup> As NIPD becomes an integrated part of standard prenatal care, the number of women receiving near-diagnostic prenatal genetic information is likely to increase dramatically.<sup>58</sup>

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53. See Lyn S. Chitty et al., *Noninvasive Prenatal Testing for Aneuploidy—Ready for Prime Time?*, 206 AM. J. OBSTETRICS & GYNECOLOGY 269, 272 (2012). In the future, it may be considered fully diagnostic, such that IPD would not be necessary to validate the results.
54. *Id.*
55. See *infra* notes 31–35 and accompanying text.
56. See Laura L. Jelliffe-Pawlowski et al., *Using Second Trimester Ultrasound and Maternal Serum Biomarker Data to Help Detect Congenital Heart Defects in Pregnancies With Positive Triple-Marker Screening Results*, 146A AM. J. MED. GENETICS 2455, 2456 (2008).
57. Women may actually be more willing to have a noninvasive diagnostic test than a noninvasive screening test because of the need to verify a positive screening test with an invasive procedure, such as an amniocentesis or CVS. See, e.g., Loes Kooij et al., *The Attitude of Women Toward Current and Future Possibilities of Diagnostic Testing in Maternal Blood Using Fetal DNA*, 29 PRENATAL DIAGNOSIS 164, 165–67 (2009).
58. See King, *supra* note 22, at 619–21. Current prenatal screening programs examine the presence of hormones, proteins, and other markers of fetal DNA, but they do not currently examine the fetal genome itself in the manner that IPD or NIPD do. See *Quad Screen*, AM. PREGNANCY ASS'N, <http://www.americanpregnancy.org/prenataltesting/quadscreen.html> (last updated Sept. 2009). The National Society of Genetic Counselors (NSGC) passed a position statement against the use of NIPD for Down syndrome and Trisomy 13 and 18 in low-risk pregnancy populations until studies establish the accuracy of the tests in those populations. Once the tests are complete and if they demonstrate similar levels of accuracy, NSGC anticipates that the tests will be used in all populations. PATRICIA DEVERS, NAT'L SOC'Y OF GENETIC COUNSELORS, NONINVASIVE PRENATAL TESTING/NONINVASIVE PRENATAL DIAGNOSIS: THE POSITION OF THE NATIONAL SOCIETY OF GENETIC COUNSELORS (2012), available at [http://www.nsgc.org/Portals/0/Advocacy/NSGC Noninvasive Prenatal Testing 4-17-2012.pdf](http://www.nsgc.org/Portals/0/Advocacy/NSGC%20Noninvasive%20Prenatal%20Testing%204-17-2012.pdf).



NIPD's noninvasiveness will also broaden the range of conditions for which prenatal testing is available and clinically appropriate.<sup>59</sup> As noted above, physicians have an ethical obligation to balance any medical procedure's risks and benefits.<sup>60</sup> Historically, the risk of miscarriage associated with IPD has limited prenatal genetic testing to a small handful of severe disorders.<sup>61</sup> The calculus changes significantly, however, with NIPD because the blood test only creates a nominal risk to the mother and almost no risk to the fetus. As a result, the vast majority of information that can and will be available through NIPD, even if imperfect, would outweigh the risks associated with a blood test.<sup>62</sup> As our knowledge of genetics improves and as NIPD use becomes integrated into prenatal care, little prevents pregnant women and physicians from significantly widening the range of prenatally identified diseases and conditions. Further, when fully commercialized, whole genome analysis will permit fetal testing for hundreds of genetic diseases, all chromosomal abnormalities, and predispositions to other multifactorial conditions from a maternal blood sample.<sup>63</sup> At that point, the scope of fetal genetic information available through prenatal testing will be limited only by our knowledge and understanding of genetics.

## 2. Timing

NIPD not only promises to expand the range of information available to pregnant women, but it also lets them receive such information at a more useful time, making NIPD results more actionable by increasing the number of options available in a given situation.<sup>64</sup> Scientists can detect fetal DNA in a maternal blood sample as early as four weeks gestation and can currently use it for genetic testing at ten weeks.<sup>65</sup> However, researchers have speculated that testing could theoretic-

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59. de Jong et al., *supra* note 40, at 273; see also Richard P. Smith et al., *The Obstetrician's View: Ethical and Societal Implications of Non-invasive Prenatal Diagnosis*, 26 *PRENATAL DIAGNOSIS* 631, 633 (2006).

60. See TOM L. BEAUCHAMP & JAMES F. CHILDRESS, *PRINCIPLES OF BIOMEDICAL ETHICS* 166 (5th ed. 2001).

61. See *Prenatal Testing*, *supra* note 18.

62. See Smith et al., *supra* note 59.

63. See Lo et al., *supra* note 47, at 9; see also Kitzman et al., *supra* note 51, at 1.

64. See King, *supra* note 22, at 627-31.

65. S. Illanes et al., *Early Detection of Cell-Free Fetal DNA in Maternal Plasma*, 83 *EARLY HUM. DEV.* 563, 565 (2007) (detecting cfDNA at four weeks gestation); see Press Release, Sequenom, Sequenom Center for Molecular Medicine Announces Launch of MaterniT21™ Noninvasive Prenatal Test for Down Syndrome (Oct. 17, 2011), <http://sequenom.investorroom.com/index.php?s=43&item=310>.

cally occur as early as seven weeks.<sup>66</sup> Between seven and ten weeks, many women will have only recently discovered the pregnancy and will have a greater range of options open to them than they will at eighteen to twenty-four weeks. They will have much more time to learn about life with an affected child and the resources available to families caring for affected children.<sup>67</sup> Increasing the amount of time and information pregnant women have to make their decision may help them feel more comfortable with their choices. Earlier diagnosis may also permit prenatal treatment in the rare instances when it is possible or provide the parents with time to prepare for their child's birth.<sup>68</sup> Overall, possessing diagnostic information earlier in a pregnancy can provide significant benefits for patients both clinically and in their decisionmaking processes.<sup>69</sup>

For those women who would consider termination, NIPD provides information at a time when having an abortion may be more physically and emotionally tolerable.<sup>70</sup> Unlike current prenatal screening, NIPD would offer women a highly accurate screen in the first trimester, which would enable women who screen high risk to have confirmatory CVS in the first trimester or an amniocentesis early in the second trimester. If the woman wanted to pursue pregnancy termination, a surgical abortion would be required, but earlier abortions are safer and have fewer complications.<sup>71</sup> If in the future NIPD is considered diagnostic such that further

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66. See, e.g., Hall et al., *supra* note 44, at 248.

67. In the hopes of providing improved information to pregnant women carrying fetuses with genetic diseases and disorders, Congress recently passed the Prenatally and Postnatally Diagnosed Conditions Awareness Act, Pub. L. No. 110-374, 122 Stat. 4051 (2008), which provides grants for participating healthcare providers to furnish parents with "up-to-date information on the range of outcomes for individuals living with the diagnosed condition, including physical, developmental, educational, and psychosocial outcomes." *Id.* § 3, 122 Stat. at 4052 (codified at 42 U.S.C. § 280g-8(b)(1)(A)(ii)).

68. See Hall et al., *supra* note 44, at 248-49.

69. King, *supra* note 22, at 641-46. However, if pregnant women receive information they did not intend to receive or were not properly informed about, NIPD could have significant negative consequences, such as informing them of their own predisposition to having a genetic disorder. For a discussion of this, see *id.* at 621-31, and Ananda van den Heuvel et al., *Will the Introduction of Non-invasive Prenatal Diagnostic Testing Erode Informed Choices? An Experimental Study of Health Care Professionals*, 78 PATIENT EDUC. & COUNSELING 24, 24 (2010).

70. This statement is a positive statement rather than a normative one. I do not mean to suggest that women should find abortion more tolerable earlier on, just that some may. For an elegant description of the embryo's graduated status, see Margaret Olivia Little, *Abortion and the Margins of Personhood*, 39 RUTGERS L.J. 331 (2008).

71. Surgical abortions in the first trimester are typically referred to in the United States as dilation and curettage (D&C); however, they are typically performed via manual vacuum aspiration. In the second trimester, surgical abortions are typically called either dilation and evacuation (D&E) or dilation and extraction (D&X). See JENNIFER TEMPLETON DUNN ET AL., *ABORTION IN CALIFORNIA: A MEDICAL-LEGAL HANDBOOK* 24, 31-34 (2012); see also Hall et al., *supra* note

confirmatory testing is not needed, a pregnant woman could have a medical abortion in her own home, as opposed to a surgical abortion in a medical clinic, up until nine weeks gestation.<sup>72</sup> In either case, an earlier abortion may be more tolerable emotionally.<sup>73</sup> In the first trimester, pregnant women have had little time to adjust to the idea of being pregnant and some may not feel that the fetus has developed to the point of becoming a baby.<sup>74</sup> Few have revealed their pregnancy to many others and fewer still are physically showing. All of these factors may make having an abortion less physically and psychologically difficult than it would be in the middle or end of the second trimester when the woman is showing and has been pregnant for several months.<sup>75</sup> By providing a wider range of genetic information at an earlier point in the pregnancy, NIPD has the potential to expand the number of conditions for which a pregnant woman would be willing to engage in selective termination based on the genetic characteristics of her fetus.<sup>76</sup>

### 3. Cost

Finally, NIPD tests have the potential to cost significantly less than current IPD testing protocols. However, as the cost of genetic sequencing decreases and initial patents on noninvasive prenatal diagnostic testing techniques are successfully challenged or expire, the relative cost of NIPD will also decrease, as it does not require the clinical setting or expertise necessary to perform amniocentesis or CVS.<sup>77</sup>

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44, at 249 (noting that terminating a pregnancy at an earlier gestation stage is safer as it reduces the risk of complications and may allow for “medical’ (as opposed to surgical) methods of termination”).

72. *Medical Versus Surgical Abortion*, *supra* note 43. Medical abortions are caused by the administration of medications that cause the uterine lining to shed. A woman may take these medications and abort the fetus in her own home or in another nonmedical setting because medical abortions are noninvasive and do not require anesthesia. *Id.*

73. *See* Little, *supra* note 70, at 342–43.

74. *See* Hall et al., *supra* note 44, at 249.

75. *See id.*; *see also* Priscilla K. Coleman et al., *Late-Term Elective Abortion and Susceptibility to Posttraumatic Stress Symptoms*, 2010 J. PREGNANCY 1, 8, available at <http://www.hindawi.com/journals/jp/2010/130519>.

76. A willingness to seek an abortion because of a particular condition does not necessarily imply an ability to receive an abortion. Access to abortion remains a challenge for many women. To this end, NIPD may increase the demand for abortion but not a woman’s ability to receive one. *See* Kaiser Family Found., *Putting Womens’ Health Disparities on the Map: Abortion Access, by State, 2008: % of Women in Counties With No Abortion Provider*, STATEHEALTHFACTS.ORG, <http://www.statehealthfacts.org/comparemapreport.jsp?rep=8&cat=15&sortc=3&co=a> (last visited Aug. 19, 2012).

77. One of the earliest and most foundational patents covering NIPD technology will expire in 2018. Non-invasive Prenatal Diagnosis, U.S. Patent No. 6,258,540 (filed Nov. 29, 1999). Numerous patent challenges exist in this space and the intellectual property landscape is still in great flux. Lauren C. Sayres et al., *In the Public Interest?*, SCI. TRANSLATIONAL MED., July 25, 2012, 144fs23, at 1, 1–2.

For example, in 2008, Steve Quake, co-chair of the Stanford Bioengineering Department and developer of the NIPD technology licensed to Verinata, estimated that the cost to perform the sequencing needed for his aneuploidy test would be approximately \$700.<sup>78</sup> By 2010, the cost of performing the test had dropped nearly 60 percent to around \$300.<sup>79</sup> While the cost of performing NIPD has fallen, the initial commercial price of NIPD mirrored the cost of IPD at around \$2000, but has already begun to decrease. In the fall of 2011, Sequenom announced that the cost of its MaterniT21 for Down syndrome would be \$1900 to insurance companies, with a maximum out-of-pocket expense of \$235 per insured customer.<sup>80</sup> However in early 2012, Ariosa, another NIPD start-up, introduced a substantially equivalent test, the Harmony Prenatal Test for Trisomies 13, 18, and 21 to the commercial market for \$795.<sup>81</sup> As the cost of conducting NIPD testing drops, the commercial cost to consumers is also quite likely to continue to drop significantly in an effort to increase the volume of women undergoing the procedure.

By alleviating many of the problems associated with current prenatal genetic testing, NIPD has the potential to dramatically change the way we think about pregnancy, abortion, and reproductive rights in America. No single feature of NIPD could independently bring about this change, but in combination the results could be staggering.<sup>82</sup> If the number of pregnant women receiving diagnostic genetic information about a wide range of genetic disorders and conditions increases substantially, and their ability to terminate that pregnancy becomes safer and easier, reproduction could be revolutionized.<sup>83</sup> Each pregnancy could become contingent upon NIPD test results at seven to ten weeks.

NIPD's introduction into prenatal care coincides with the growing state interest in regulating the reasons for which a woman can have an abortion, which

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78. Steve Quake, Presentation at Stanford Law School Conference on the Implications of Maternal Serum Fetal Cell Free DNA (May 7, 2010).

79. *Id.*

80. Andrew Pollack, *A Less Risky Down Syndrome Test Is Developed*, N.Y. TIMES, Oct. 17, 2011, <http://www.nytimes.com/2011/10/18/business/sequenom-test-for-down-syndrome-raises-hopes-and-questions.html>.

81. See Erika Check Hayden, *Fetal Tests Spur Legal Battle*, 486 NATURE 454, 454 (2012).

82. For an example of the kinds of societal results that are possible from widespread reproductive genetic selection, see generally MARA HVISTENDAHL, *UNNATURAL SELECTION: CHOOSING BOYS OVER GIRLS, AND THE CONSEQUENCES OF A WORLD FULL OF MEN* (2011).

83. For a detailed description of the factors that will determine NIPD's adoption into clinical care, see King, *supra* note 22, at 620–25. A significant change in reproductive practices will depend on the ability to access abortion, which is often a significant challenge for women in nonurban areas or without the financial means to do so. Stephanie Mueller & Susan Dudley, *Access to Abortion*, NAT'L ABORTION FED'N (2003), [http://www.prochoice.org/about\\_abortion/facts/access\\_abortion.html](http://www.prochoice.org/about_abortion/facts/access_abortion.html).

provides the ideal impetus to reconsider the bounds of reproductive autonomy and the state's ability to regulate the factors that play into a pregnant woman's reproductive decisions.

## II. INTERPRETATIONS OF REPRODUCTIVE RIGHTS JURISPRUDENCE

Understanding the underlying justification for protecting reproductive rights will help explicate whether and how those rights will respond to new technologies like NIPD. Historically, the U.S. Supreme Court has justified Fourteenth Amendment protection for reproductive rights, including the right to avoid procreation and the right to procreate under certain circumstances, in terms of the importance of both privacy and liberty in making personal and intimate decisions.<sup>84</sup> As technology has expanded the scope of intimate decisions a couple could make related to reproduction and procreation, however, some scholars have sought a justification for reproductive rights that provides more guidance on the boundaries of those rights.<sup>85</sup> One potential justification comes from a group of leading abortion scholars who have argued since *Roe* in favor of justifying reproductive rights in terms of sex equality—in other words, protecting a woman's ability to maintain an equal social and economic status with men.<sup>86</sup> This justification allows a regulatory line to be drawn that protects women's interests in rights to contraception and abortion, but permits state regulation of technologies that do not necessarily have a gender-specific impact, such as reproductive cloning. This Part briefly explores the history of these two approaches to reproductive rights in order to lay the groundwork for analyzing their implications with respect to reasons-based abortion prohibitions and reasons-based information prohibitions.

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84. Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 849 (1992).

85. See, e.g., Balkin, *supra* note 21, at 843–45; Sonia M. Suter, *The "Repugnance" Lens of Gonzales v. Carhart and Other Theories of Reproductive Rights: Evaluating Advanced Reproductive Technologies*, 76 GEO. WASH. L. REV. 1514, 1517–20 (2008).

86. See generally CATHARINE A. MACKINNON, *Privacy v. Equality: Beyond Roe v. Wade* (1983), in FEMINISM UNMODIFIED: DISCOURSES ON LIFE AND LAW 93 (1987); Ruth Bader Ginsburg, *Essay, Some Thoughts on Autonomy and Equality in Relation to Roe v. Wade*, 63 N.C. L. REV. 375 (1985); Sylvia A. Law, *Rethinking Sex and the Constitution*, 132 U. PA. L. REV. 955 (1984); Catharine A. MacKinnon, *Reflections on Sex Equality Under Law*, 100 YALE L.J. 1281 (1991); Reva B. Siegel, *Abortion as a Sex Equality Right: Its Basis in Feminist Theory*, in MOTHERS IN LAW: FEMINIST THEORY AND THE LEGAL REGULATION OF MOTHERHOOD 43 (Martha Albertson Fineman & Isabel Karpin eds., 1995) [hereinafter Siegel, *Abortion as a Sex Equality Right*]; Reva Siegel, *Reasoning From the Body: A Historical Perspective on Abortion Regulation and Questions of Equal Protection*, 44 STAN. L. REV. 261 (1992) [hereinafter Siegel, *Reasoning From the Body*].

## A. Privacy and Liberty

The Supreme Court has justified granting Fourteenth Amendment due process protection to decisions regarding reproduction and procreation on both privacy and liberty grounds. Initially, the Court focused its substantive due process analysis on the privacy and intimacy of reproductive decisions,<sup>87</sup> but in more recent years, the Court's substantive due process language has shifted to focus more on an individual's liberty interest in making intimate decisions.<sup>88</sup> Regardless of the justification, the Court has held repeatedly that the Due Process Clause protects an individual's right to make intimate, personal decisions regarding whether to submit to certain medical treatments;<sup>89</sup> whether, when, and with whom to have children;<sup>90</sup> and how to raise those children free from unwarranted government intervention.<sup>91</sup> These protected decisions fall into one of three categories: procreative, personal, and parental.<sup>92</sup> For instance, laws that restrict access to abortion, like RBAPs, will impinge on a woman's procreative liberty. Laws that restrict access to NIPD tests or to other forms of assisted reproduction, however, are likely to implicate other liberty interests as well. This Subpart discusses procreative liberty as it relates to direct restrictions on abortion, and Part IV considers personal and parental liberty during the discussion of reasons-based testing prohibitions.

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87. See *Paris Adult Theatre I v. Slaton*, 413 U.S. 49, 66 n.13 (1973) (“[T]he constitutionally protected privacy of family, marriage, motherhood, procreation, and child rearing is not just concerned with a particular place, but with a protected intimate relationship.”); *Roe v. Wade*, 410 U.S. 113, 153 (1972) (stating that the right to privacy is “broad enough to encompass a woman’s decision whether or not to terminate her pregnancy”); *Eisenstadt v. Baird*, 405 U.S. 438, 453 (1972) (extending the right to utilize contraception to nonmarried persons and making it an individual right as opposed to one based in the marital relationship by reasoning that “[i]f the right of privacy means anything, it is the right of the *individual*, married or single, to be free from unwarranted governmental intrusion into matters so fundamentally affecting a person as the decision whether to bear or beget a child”).
88. Thomas Cocker, *From Privacy to Liberty: The Fourth Amendment After Lawrence*, 57 UCLA L. REV. 1, 10 (2009) (noting that in the areas of marriage and procreation, “the Court has shifted significantly away from further development of privacy protections in favor of protecting a realm of personal and interpersonal liberty grounded in the Due Process Clauses of the Fifth and Fourteenth Amendments”). As a result of the change in the Court’s language, I will discuss substantive due process protection for one’s ability to make private and intimate decisions regarding reproduction and family in terms of a liberty interest, but it is my intent to capture rights justified under both interests.
89. *Cruzan v. Dir., Mo. Dep’t of Health*, 497 U.S. 261, 278–80 (1990).
90. *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 847–50 (1992).
91. *Pierce v. Soc’y of Sisters*, 268 U.S. 510, 534–35 (1925).
92. Radhika Rao, *Constitutional Misconceptions*, 93 MICH. L. REV. 1473, 1488–89 (1995) (reviewing JOHN A. ROBERTSON, *CHILDREN OF CHOICE: FREEDOM AND THE NEW REPRODUCTIVE TECHNOLOGIES* (1994)) (describing these categories of interests in terms of privacy of procreation, privacy of person, and privacy of parenting).

Since *Roe*, legal scholars and judges have concluded that the Fourteenth Amendment's Due Process Clause protects a woman's liberty to decide to have an abortion prior to viability, regardless of her reason.<sup>93</sup> Under this liberty-based approach, constitutional protection attaches to the decision to abort, and a woman's reason for making the decision is entirely secondary. This approach relies on an interpretation of the Supreme Court's decisions in *Roe* and *Casey* that is based on a "highly individualistic, libertarian theory of autonomy and privacy."<sup>94</sup> A strong theory of reproductive privacy and liberty would grant prospective parents extensive control over their reproductive lives by protecting them against state interference in all important and intimate reproductive decisions.<sup>95</sup>

As science and technology expand the scope of potential reproductive technologies, a liberty-based theory of reproductive rights could protect everything from a decision to use birth control to a decision to engage in reproductive cloning or genetic engineering of one's children.<sup>96</sup> Over the last three decades, John Robertson, a leading legal scholar on reproductive rights, has developed and applied his theory of procreative liberty, which is grounded in strong notions of privacy and autonomy, to a wide range of reproductive decisions and technologies.<sup>97</sup>

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93. See *Roe v. Wade*, 410 U.S. 113, 163 (1972) ("With respect to the State's important and legitimate interest in potential life, the 'compelling' point is at viability."); *Casey*, 505 U.S. at 860 (describing *Roe*'s "central holding, that viability marks the earliest point at which the State's interest in fetal life is constitutionally adequate to justify a legislative ban on nontherapeutic abortions"); John A. Robertson, *Genetic Selection of Offspring Characteristics*, 76 B.U. L. REV. 421, 427 (1996).
94. Suter, *supra* note 85, at 1520.
95. See *id.*; cf. Balkin, *supra* note 21, at 858 (noting that a strong conception of reproductive privacy "may increase the personal liberties of parents").
96. Balkin, *supra* note 21, at 856. For an excellent analysis of the implications for a procreative liberty and personal autonomy theory based on a range of reproductive technologies, see Suter, *supra* note 85, at 1520–40.
97. ROBERTSON, *supra* note 92, at 24; John A. Robertson, *Procreative Liberty and the Control of Conception, Pregnancy and Childbirth*, 69 VA. L. REV. 405 (1983); John A. Robertson, *Embryos, Families, and Procreative Liberty: The Legal Structure of the New Reproduction*, 59 S. CAL. L. REV. 939 (1986); John A. Robertson, *Procreative Liberty, Embryos, and Collaborative Reproduction: A Legal Perspective*, 13 WOMEN & HEALTH 179 (1987); John A. Robertson, *Liberalism and the Limits of Procreative Liberty: A Response to My Critics*, 52 WASH. & LEE L. REV. 233 (1995); John A. Robertson, *Reproductive Liberty and the Right to Clone Human Beings*, 913 ANNALS N.Y. ACAD. SCI. 198 (2000); John A. Robertson, *Procreative Liberty in the Era of Genomics*, 29 AM. J.L. & MED. 439, 445 (2003) [hereinafter Robertson, *Era of Genomics*]; John A. Robertson, *Procreative Liberty and Harm to Offspring in Assisted Reproduction*, 30 AM. J.L. & MED. 7 (2004); John A. Robertson, *Assisting Reproduction, Choosing Genes, and the Scope of Reproductive Freedom*, 76 GEO. WASH. L. REV. 1490 (2008); John A. Robertson, *Abortion and Technology: Sonograms, Fetal Pain, Viability and Early Prenatal Diagnosis*, 14 U. PA. J. CONST. L. 327 (2011) [hereinafter Robertson, *Abortion and Technology*].

Robertson argues broadly in favor of protecting “the freedom to decide whether or not to have offspring and to control the use of one’s reproductive capacity.”<sup>98</sup>

Recognizing that an entirely unbridled approach to reproductive rights would permit not only genetic selection but also genetic manipulation to enhance or diminish a child’s genetic capacity, Robertson argues for limits on reproductive choice based on the core goals and values of reproduction.<sup>99</sup> Accordingly, he argued that “procreative liberty would protect only actions designed to enable a couple to have normal, healthy offspring whom they intend to rear.”<sup>100</sup> These limits, however, present few—if any—restrictions on the use of NIPD to inform selective abortion decisions. Robertson argues that “[i]f abortion is accepted generally, then it should be available for genetic selection reasons as well.”<sup>101</sup> Accordingly,

the question is simply whether choice of [a nonmedical characteristic] is so centrally implicated with the decision whether or not to reproduce that it should receive presumptive protection as an exercise of procreative freedom. For some parents, choice of [a nonmedical characteristic] will be central to reproductive choice, and therefore presumptively protected against restriction without showing of compelling need.<sup>102</sup>

Robertson acknowledges that, in some instances, a woman’s reason for deciding to terminate might be so trivial as to be outside procreative liberty,<sup>103</sup> but attempts to draw those lines have been largely unfruitful.

In his earlier discussion of more trivial nonmedical traits like eye and hair color, Robertson noted that few parents would undergo invasive prenatal diagnosis to selectively abort on the basis of these traits, but forecasting the future, he suggested that prospective parents might be more willing to use a less burdensome preconceptive method if it were available.<sup>104</sup> Therefore, “some choices over nonmedical traits might also qualify for presumptive protection, because the person seeking such information would base a reproductive decision on it.”<sup>105</sup> Overall, a

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98. ROBERTSON, *supra* note 92, at 16.

99. *Id.* at 167. Enhancement would entail modifying an individual’s DNA to improve his or her abilities beyond normal species functioning, while intentional diminishment would involve genetic manipulation to reduce an individual’s capacity to below-normal species functioning. *See generally* Norman Daniels, *Normal Functioning and the Treatment–Enhancement Distinction*, 9 *CAMBRIDGE Q. HEALTHCARE ETHICS* 309 (2000).

100. ROBERTSON, *supra* note 92, at 167.

101. *Id.* at 159.

102. Robertson, *supra* note 91, at 434 (using the example of nonmedical sex selection).

103. *Id.* at 431–32.

104. *Id.* at 435.

105. *Id.*



theory of reproductive rights based on strong notions of privacy and autonomy, like Robertson's, would give prospective parents substantial leeway to engage in any activity or access any information that they could plausibly argue was determinative of their decision to reproduce.

As a result, the liberty-based theory has drawn criticism for its potential boundlessness.<sup>106</sup> Radhika Rao has argued that “procreative liberty appears to possess no logical stopping point, expanding to the outer limits of technological possibility and human ingenuity.”<sup>107</sup> Similarly, Jack Balkin has argued that a liberty-based approach to reproductive rights may create a broad overarching right to reproductive autonomy, protecting parents' right to make any decision related to “when and how to have offspring.”<sup>108</sup> With respect to NIPD and selective abortion, a purely liberty-based approach could protect selective abortion based on any NIPD result that was arguably related to a parent's reproductive decisionmaking, as well as the ability to access any NIPD test that would inform those decisions. Robertson has not entirely adopted a pure liberty-based approach. He acknowledges that the right to procreative liberty is not “absolute,” and instead argues that there is a strong presumption in its favor that should only be overcome when the reproductive activity poses a significant harm to others.<sup>109</sup> So far, however, Robertson has found very few reproductive activities that he believes might be subject to limitation, arguing instead for protecting prospective parents' ability to engage in a wide range of reproductive activities that leaves other scholars concerned.<sup>110</sup> Despite its potential boundlessness, the Court has largely continued to analyze restrictions on abortion in terms of substantive due process protection for procreative liberty, though notions of equality have begun to play a larger role as well.

## B. Equality

A theory of reproductive rights that incorporated notions of equality as well as procreative liberty could be used to define more clearly the scope of consti-

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106. *E.g.*, Balkin, *supra* note 21, at 856; Rao, *supra* note 92, at 1479–81 & n.17; *see also* Suter, *supra* note 85, at 1538–40 (recognizing the potential limitlessness of “only the most liberal conception” of procreative liberty).

107. Rao, *supra* note 92, at 1479.

108. Balkin, *supra* note 21, at 858.

109. Robertson, *supra* note 91, at 428–29.

110. *Id.* at 432 (suggesting that decisions to engage in reproductive cloning by fertile women and intentional diminishment—that is, genetic manipulation to reduce a child's abilities—might be outside of procreative-liberty protection).

tutional abortion protection.<sup>111</sup> Although *Roe* was decided on substantive due process grounds without mention of equality for women, even at that time equality concerns were implicit in the Court's reasoning.<sup>112</sup> The Court's justification for protecting abortion stemmed largely from the impositions placed on a woman by the pregnancy, birth, and rearing of an unwanted child.<sup>113</sup> This impositions-based language is more consistent with an approach based on procreative liberty and equality between the sexes than one based on the expectation of privacy and the intimacy of the decision to reproduce. The relative burden of an unwanted child will affect a woman's ability to engage in social and economic activities, but it has no bearing on the intimate and personal nature of an abortion decision or the private nature of the relationship between prospective parents or a pregnant woman and her doctor.

In the 1980s and early 1990s, scholarship on the use of sex equality arguments to further reproductive rights expanded significantly with works by Sylvia Law, Justice Ginsburg, Catharine MacKinnon, and Reva Siegel.<sup>114</sup> In 1985, then-Judge Ginsburg argued in a widely cited article that the conflict over abortion

is not simply one between a fetus' interests and a woman's interests, narrowly conceived, nor is the overriding issue state versus private control of a woman's body for a span of nine months. Also in the balance is a woman's autonomous charge of her full life's course— . . . her ability to stand in relation to man, society, and the state as an independent, self-sustaining, equal citizen.<sup>115</sup>

In 1992, the *Casey* Court affirmatively acknowledged sex equality, along with procreative liberty, as a justification for affirming the right to abortion.<sup>116</sup> The Court stated that "[t]he ability of women to participate equally in the economic and social life of the Nation has been facilitated by their ability to control their

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111. See, e.g., Balkin, *supra* note 21, at 864; Ginsburg, *supra* note 86, at 382–83; Reva B. Siegel, *Sex Equality Arguments for Reproductive Rights: Their Critical Basis and Evolving Constitutional Expression*, 56 EMORY L.J. 815, 818–19 (2007); Siegel, *Abortion as a Sex Equality Right*, *supra* note 86; Siegel, *Reasoning From the Body*, *supra* note 86.

112. See Linda Greenhouse, *How the Supreme Court Talks About Abortion: The Implications of a Shifting Discourse*, 42 SUFFOLK U. L. REV. 41, 45–46, 51–53 (2008) (noting that the Supreme Court in *Roe* was presented with numerous briefs that presented the right to abortion in terms of equality and that although the Court did not adopt that framework, similar language regarding equality began to appear again in the legal literature and in Supreme Court decisions in the 1980s and 1990s).

113. See Ginsburg, *supra* note 86, at 382–83; Siegel, *Reasoning From the Body*, *supra* note 86, at 273–74.

114. See *supra* note 86.

115. Ginsburg, *supra* note 86, at 383 (footnote omitted) (citing Kenneth L. Karst, Foreword, *Equal Citizenship Under the Fourteenth Amendment*, 91 HARV. L. REV. 1, 57–59 (1977)).

116. *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 852, 856 (1992); see Greenhouse, *supra* note 112, at 53.

reproductive lives.”<sup>117</sup> Justice Stevens further argued in his concurring and dissenting opinion that the costs of overruling *Roe* would be “enormous” because “*Roe* is an integral part of a correct understanding of both the concept of liberty and the basic equality of men and women.”<sup>118</sup>

In the years since *Casey*, the equality-based approach to reproductive rights has gained significant ground in the legal literature,<sup>119</sup> but it, along with procreative liberty, was substantially weakened by the Court’s decision in *Gonzales v. Carhart*.<sup>120</sup> The *Carhart* Court upheld the federal Partial-Birth Abortion Ban Act that prohibited the provision of a specific kind of late-term abortion, known as a “partial-birth abortion,” and notably did not include an exception to protect the health of the pregnant woman.<sup>121</sup> In doing so, the five-to-four majority moved away from the ideas that the right to abortion was inherent in women’s ability to determine their own destiny and that it allowed them to remain on equal footing with men in society, and instead moved toward concerns of “coarsening society” and a paternalistic desire to protect women from making uninformed abortion decisions.<sup>122</sup> Equality arguments, however, survived in Justice Ginsburg’s dissent, joined by Justices Breyer, Souter, and Stevens, as a justification for overturning the law.<sup>123</sup>

Under a solely equality-based framework, reproductive activities that would not threaten women’s equality would not receive constitutional protection.<sup>124</sup> Framing the issue in terms of women’s equality permits distinctions between pro-

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117. *Casey*, 505 U.S. at 856.

118. *Id.* at 912 (Stevens, J., concurring in part and dissenting in part).

119. See, e.g., Jennifer S. Hendricks, *Body and Soul: Equality, Pregnancy, and the Unitary Right to Abortion*, 45 HARV. C.R.-C.L. L. REV. 329 (2010); Reva B. Siegel, Lecture, *The Right’s Reasons: Constitutional Conflict and the Spread of Woman-Protective Antiabortion Argument*, 57 DUKE L.J. 1641 (2008); Jeannie Suk, *The Trajectory of Trauma: Bodies and Minds of Abortion Discourse*, 110 COLUM. L. REV. 1193 (2010).

120. 550 U.S. 124 (2007).

121. *Id.* at 163–64 (holding that because both sides provided medical testimony regarding the existence of health risks to the pregnant woman from partial-birth abortion procedures and because “[t]he Court has given state and federal legislatures wide discretion to pass legislation in areas where there is medical and scientific uncertainty,” no health exception was required).

122. *Id.* at 157–60; see also Greenhouse, *supra* note 112, at 55; Suter, *supra* note 85, at 1581–83 (describing the lens used by the Court in *Carhart* as one of “repugnance” because its decisions seemed to be based on a general disgust with the procedure).

123. *Carhart*, 550 U.S. at 171–72 (Ginsburg, J., dissenting). In fact, the dissent interprets *Casey* almost exclusively through the lens of sex equality rather than one of procreative liberty.

124. See Balkin, *supra* note 21, at 857–61.

tected and unprotected reproductive activities to be drawn more clearly.<sup>125</sup> Balkin, a strong proponent of the equality interpretation, has argued that the abortion right should be “designed to help secure women’s equal citizenship in a world in which reproductive burdens and the life-altering obligations of parenthood fall particularly heavily on them.”<sup>126</sup> He also noted that viewing the abortion right in terms of equality would permit the state to regulate new reproductive technologies in ways that might not be possible under procreative liberty.<sup>127</sup>

Both the liberty-based framework and the equality-based framework have support in the academic literature and in Supreme Court precedent. While the majority opinion in *Carhart* weakened arguments favoring both autonomy and equality by upholding a law that banned a previability abortion procedure without a health exception, it appeared to do so evenly, prioritizing ethical and moral concerns. Moreover, if Justice Ginsburg’s dissent provides a valid indicator of the opinions of her fellow dissenting justices, it may indicate a shift toward granting sex equality concerns more priority in reproductive rights jurisprudence. As a result, analyzing how both approaches would apply to new state laws restricting access to abortions sought for a specific reason and potential laws that would restrict access to the genetic tests that would inform selective abortion decisions is important to developing a full understanding of the impact NIPD can have on reproductive rights.

### III. REASONS-BASED ABORTION PROHIBITIONS

In an effort to reduce the number of abortions, a handful of states have passed legislation that restricts access to abortion based on the woman’s reason for electing to terminate.<sup>128</sup> By expanding the range of genetic tests available, NIPD will dramatically increase the number of factors that parents can consider in deciding whether to go forward with a pregnancy. Further, by providing genetic infor-

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125. See Ginsburg, *supra* note 86, at 382–83; Karst, *supra* note 115, at 53–59 (linking abortion prohibitions with discrimination against women and stating that the issue in *Roe* concerned “women’s position in society in relation to men”).

126. Balkin, *supra* note 21, at 856.

127. See *id.* at 856–57.

128. See, e.g., ARIZ. REV. STAT. ANN. § 13-3603.02 (West Supp. 2011); 720 ILL. COMP. STAT. ANN. 510/6(8) (West 2010) (“No person shall intentionally perform an abortion with knowledge that the pregnant woman is seeking the abortion solely on account of the sex of the fetus.”); Statistical Reporting of Abortion Act, H.B. 1595, 52d Leg., 1st Sess. (Okla. 2009) (prohibiting the performance of an abortion solely on account of the sex of the unborn child); 18 PA. CONS. STAT. ANN. § 3204(c) (West 2000) (“No abortion which is sought solely because of the sex of the unborn child shall be deemed a necessary abortion.”); see also AMERICANS UNITED FOR LIFE, *supra* note 4.

mation to prospective parents in time to have a medical or early surgical abortion, NIPD may alter couples' justifications for engaging in selective abortion. At the same time, states may be eager to pass legislation prohibiting access to abortion for many of these newfound reasons in an effort to restrict the scope of available abortions further. This Part describes the existing reasons-based abortion prohibitions and then examines them under substantive due process and equal protection analyses. I conclude that while the incorporation of equal protection arguments would facilitate distinguishing which genetic conditions the state could regulate, those lines are better left undrawn. Such regulations may increase discrimination against disabled individuals and their families and ultimately have a negative impact on society. In contrast, using the more expansive liberty-based framework for regulations that directly touch abortion would accomplish the equal protection goals in terms of protecting a woman's ability to maintain equality with men without the potential for increased discrimination and state evaluation of the speculative burden that some citizens place on others.

#### A. State Legislation

Historical interest in reasons-based abortion prohibitions has been limited. Before 2009, only two states, Pennsylvania and Illinois, had passed laws prohibiting physicians from providing abortions based on the mother's reason for wanting it.<sup>129</sup> Both states proscribed physicians from performing abortions they knew were sought based on the fetus's sex.<sup>130</sup> However, state interest has picked up substantially. In the last three years, U.S. Congress and eight state legislatures have received bills that propose reasons-based abortion bans.<sup>131</sup> Two states, Oklahoma and Arizona, successfully passed such measures.<sup>132</sup>

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129. See 18 PA. CONS. STAT. ANN. § 3204(c) (West 2000) ("No abortion which is sought solely because of the sex of the unborn child shall be deemed a necessary abortion."); 720 ILL. COMP. STAT. ANN. 510/6(8) (West 2010) ("No person shall intentionally perform an abortion with knowledge that the pregnant woman is seeking the abortion solely on account of the sex of the fetus."). Pennsylvania's law was amended to include this provision in 1989, and Illinois's was passed before 1985. 18 PA. CONS. STAT. ANN. § 3204; 720 ILL. COMP. STAT. ANN. 510/6.

130. 18 PA. CONS. STAT. ANN. § 3204(c); 720 ILL. COMP. STAT. ANN. 510/6(8).

131. See Susan B. Anthony and Frederick Douglass Prenatal Nondiscrimination Act, H.R. 1822, 111th Cong. (2009); S.B. 529, 150th Gen. Assemb., Reg. Sess. (Ga. 2010); A.B. 162, 214th Leg., 1st Sess. (N.J. 2010); H.B. 484, 187th Gen. Court, Reg. Sess. (Mass. 2011); H.B. 693, 60th Leg., 2d Reg. Sess. (Idaho 2010); H.F. 1196, 86th Leg., 1st Reg. Sess. (Minn. 2009); S.F. 1073, 2009 Leg., 86th Sess. (Minn. 2009); S.B. 5033, 234th Leg., Reg. Sess. (N.Y. 2011); A.B. 7610, 234th Leg., Reg. Sess. (N.Y. 2011); H.B. 5530, 2011 Gen. Assemb., Jan. Sess. (R.I. 2011); S.B. 336, 2011 Gen. Assemb., Jan. Sess. (R.I. 2011).

132. OKLA. STAT. ANN. tit. 63, § 1-731.2 (West 2004 & Supp. 2012); ARIZ. REV. STAT. ANN. § 13-3603.02.

Oklahoma has recently passed two pieces of legislation that reveal a growing interest in a woman's reasons for choosing an abortion. In the first, Oklahoma prohibits any provider from performing "an abortion with knowledge that the pregnant female is seeking the abortion solely on account of the sex of the unborn child."<sup>133</sup> The statute, however, specifically permits the performance of a sex-selective abortion sought because the unborn child has an elevated risk of developing a sex-linked genetic disease.<sup>134</sup> The act grants the woman on whom the abortion was performed (or her parents, if she is an unemancipated minor) the right to sue the provider for actual and punitive damages that arise from the performance of a sex-selective abortion.<sup>135</sup> In addition, it permits a claim for injunctive relief to be brought by the attorney general, a district attorney, the woman on whom the abortion was attempted or performed, or "any person who is the spouse, parent, sibling, or guardian of, or current or former licensed health care provider of, the female upon whom an abortion has been performed," providing a wide array of individuals who have standing to sue the abortion provider.<sup>136</sup>

The second Oklahoma law requires providers to ask every woman seeking an abortion, in the absence of a medical emergency, to answer questions about her reasons for doing so either orally or in writing.<sup>137</sup> The provider must then include the reason given or note the woman's refusal to answer in The Individual Abortion Form, which providers are required to send to the state for each abortion they perform.<sup>138</sup> The Individual Abortion Form lists over forty reasons why a woman might seek an abortion and encourages providers to "check all applicable" reasons.<sup>139</sup> Most of the suggested reasons focus on the mother's financial and relationship status, but two focus on characteristics of the fetus: "Mother wanted a child of a different sex," and "There may be [a] possible problem affecting the health

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133. OKLA. STAT. ANN. tit. 63, § 1-731.2(B).

134. *Id.* Physicians first performed sex-selective abortions to avoid the birth of male offspring to women who carried an X-linked disorder. If a woman is a carrier of an X-linked disorder, her male fetuses are at higher risk of having an X-linked disorder than her female fetuses because they only receive one copy of the X chromosome. Each male fetus has a fifty-fifty chance of receiving the affected X allele from a carrier mother and thus a fifty-fifty chance of contracting the disorder. Their sisters, who would receive two copies of the X chromosome, would have a fifty-fifty chance of being carriers, but almost no risk of having the disorder. *Sex-Linked Recessive Disorders*, MEDLINE PLUS, <http://www.nlm.nih.gov/medlineplus/ency/article/002051.htm> (last updated May 16, 2012).

135. OKLA. STAT. ANN. tit. 63, § 1-731.2(C)(4).

136. *Id.* § 1-731.2(C)(1). The injunction is intended to prohibit the provider from performing any additional abortions in violation of this statute. *Id.* § 1-731.2(C)(2).

137. *Id.* § 1-738k(F)(15).

138. *Id.* § 1-738k.

139. *Id.* § 1-738k(F)(15).

of the fetus.<sup>140</sup> To date, Oklahoma is the only state that has passed legislation that specifically asks women to state their reasons for seeking an abortion.

In 2011, Arizona passed the Susan B. Anthony and Frederick Douglass Prenatal Nondiscrimination Act,<sup>141</sup> which made it a class three felony to provide an abortion with knowledge that the woman sought it “based on the sex or race of the child or the race of a parent of that child,” and which requires the provider to sign an affidavit to that effect.<sup>142</sup> The Act also makes it a felony to use force to coerce a woman into having a sex- or race-based abortion, or to solicit or accept money to finance such an abortion.<sup>143</sup> The Act grants the attorney general, the father of the unborn child, or the maternal grandparents, if the mother is under the age of eighteen, standing to sue on behalf of the unborn child.<sup>144</sup> A pregnant woman who seeks or has a sex- or race-selective abortion, however, cannot be subjected to criminal or civil penalties.<sup>145</sup>

In each instance above, a state has used the legislative process to restrict or receive information on the reasons for which a woman seeks to have an abortion. While the reasons-based abortion legislation has focused on sex and race so far, it seems unlikely to stop there. Americans United for Life (AUL), a major pro-life nonprofit organization, made reasons-based abortion prohibitions a significant focus of their 2011 legislative strategy and produced model legislation and a policy guide on banning abortions for sex selection and genetic abnormalities.<sup>146</sup> In the spring of 2012, the Missouri state legislature introduced a bill styled after AUL’s model legislation that would prohibit abortions sought for sex or any genetic condition of the fetus.<sup>147</sup> As NIPD offers prospective parents more information about

140. *Id.*

141. H.B. 2443, 50th Leg., 1st Sess. (Ariz. 2011).

142. ARIZ. REV. STAT. ANN. § 13-3603.02(A)(1) (West Supp. 2011); *id.* § 36-2157. It is important to note that race is not something that can be tested genetically; rather, it can be considered a social construct. See Audrey Smedley & Brian D. Smedley, *Race as Biology Is Fiction, Racism as a Social Problem Is Real: Anthropological and Historical Perspectives on the Social Construction of Race*, AM. PSYCHOLOGIST, Jan. 2005, at 16, 16–26 (presenting evidence that demonstrates racial groups are not genetically discrete, reliably measured, or scientifically meaningful); see also Ian F. Haney López, *The Social Construction of Race: Some Observations on Illusion, Fabrication, and Choice*, 29 HARV. C.R.-C.L. L. REV. 1, 7 (1994) (defining race as groupings of people based loosely on various components, including social, ancestral, and physical commonalities); Richie Witzig, *The Medicalization of Race: Scientific Legitimization of a Flawed Social Construct*, 125 ANNALS INTERNAL MED. 675, 675–79 (1996) (“Race is . . . an unscientific social construct . . .”).

143. ARIZ. REV. STAT. ANN. § 13-3603.02(A)(2)–(3).

144. *Id.* § 13-3603.02(B)–(C).

145. *Id.* § 13-3603.02(E).

146. AMERICANS UNITED FOR LIFE, *supra* note 4.

147. Abortion Ban for Sex Selection and Genetic Abnormalities Act of 2012, H.B. 1933, 96th Gen. Assemb., 2nd Reg. Sess. (Mo. 2012).

the genes of their fetuses, pro-life organizations and other entities are likely to encourage legislators to expand the range of conditions for which abortion is deemed inappropriate, thereby limiting the availability of abortion. Reasons-based abortion prohibitions are well poised to face constitutional challenges as they place a direct obstacle in the path of women seeking previability abortions. In some cases, creating the impetus for a constitutional challenge may have been the intent of those drafting the legislation.<sup>148</sup> While a facial constitutional challenge to these laws has not yet been brought, an analysis of the constitutionality of reasons-based abortion prohibitions is overdue.

## B. Fourteenth Amendment Challenges

As use of NIPD expands and offers prospective parents more information on which to make termination decisions, the Supreme Court will inevitably be asked to further define the scope of the abortion right. Unfortunately, the Supreme Court has long been opaque on how the boundaries of Fourteenth Amendment protection would change in response to technological advances and cultural norms.<sup>149</sup> According to existing doctrine, states may regulate abortion-related activities in two situations: (1) when the state regulation restricts an activity or decision that is not protected by the Fourteenth Amendment, so long as the regulation is rationally related to a legitimate state interest, and (2) when the state regulation does not place an undue burden on a woman's ability to make protected decisions free from government interference.<sup>150</sup> In this Subpart, I analyze the liberty- and equality-based frameworks for defining abortion rights through the lens of the constitutional issues raised by NIPD and RBAPs.

In analyzing the ability of a state to pass and enforce RBAPs, the first step is to determine whether a woman has a constitutionally protected right to seek an abortion for any reason—an issue the Court has not yet considered.<sup>151</sup> This is an especially thorny issue, with the potential to change our understanding of repro-

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148. See Kathy Lohr, *Oklahoma Abortion Law 'Invasive,' Critics Say*, NPR.ORG (Dec. 17, 2009), <http://www.npr.org/templates/story/story.php?storyId=121536729>. Interestingly, no challenge, other than the single subject rule challenge, which is a procedural challenge raised against legislation that has more than one subject, has been brought to reasons-based abortion prohibitions, potentially because pro-choice supporters do not want to send the issue up to the Roberts Court at this time.

149. See Daniel J. Solove, *Conceptualizing Privacy*, 90 CALIF. L. REV. 1087, 1117, 1154 (2002) (considering how technology may affect the right to privacy in numerous contexts including reproduction).

150. *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 846 (1992).

151. Cf. Cass R. Sunstein, *Is There a Constitutional Right to Clone?*, 53 HASTINGS L.J. 987, 989 (2002).



ductive rights.<sup>152</sup> The Supreme Court must first decide how to frame the right in question, and then, if a right exists, decide how far to extend Fourteenth Amendment protection. In this Subpart, I argue that the Court should frame the issue broadly to consider selective abortion as part of the existing right to make an abortion decision and then argue that Fourteenth Amendment protection should extend to all reasons for seeking an abortion.

### 1. A Right to Selective Abortion

Whether a citizen has a fundamental right to engage in a certain activity often depends on how the Supreme Court frames the analysis.<sup>153</sup> The Court's recent substantive due process cases tend to frame issues in two different ways—either as new, independent fundamental rights or as parts of existing rights.<sup>154</sup> Prenatal genetic testing and selective abortion can be framed as either a new fundamental right to genetic selection via abortion or as part of the existing right to freedom from unwarranted governmental interference in intimate personal decisions related to reproduction and sexuality.

Framed as a new fundamental reproductive right—the right to abort children based on any genetic or chromosomal characteristic—the claim for Fourteenth Amendment due process protection seems unlikely. Justice Rehnquist's opinion in *Washington v. Glucksberg*<sup>155</sup> established a traditionalist framework for deciding if an activity qualified for due process protection based on whether the activity was “deeply rooted in this Nation's history and tradition.”<sup>156</sup> This framing requires a “careful description” of the asserted fundamental interest so as to restrain

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152. See Robertson, *Abortion and Technology*, *supra* note 97, at 370 (arguing that NIPD has the “potential to wreak havoc with understandings of abortion and abortion rights”); see also Arthur Caplan, *Fetal Genetic Testing: A Troubling Technology*, MSNBC.COM (Aug. 9, 2011, 4:16 PM), [http://www.msnbc.msn.com/id/44078722/ns/health-health\\_care/t/fetal-genetic-testing-troubling-technology](http://www.msnbc.msn.com/id/44078722/ns/health-health_care/t/fetal-genetic-testing-troubling-technology) (stating that NIPD is “likely to reshape the debate over abortion”).

153. See Laurence H. Tribe & Michael C. Dorf, *Levels of Generality in the Definition of Rights*, 57 U. CHI. L. REV. 1057, 1058 (1990). Compare *Griswold v. Connecticut*, 381 U.S. 479 (1965), with *Eisenstadt v. Baird*, 405 U.S. 438 (1972) (highlighting the different ways that a “fundamental right” can be framed by the Court with *Griswold* focusing on the intimacy and private nature of the marital bedroom and *Eisenstadt* focusing on the individual's procreative right to privacy—both in an effort to protect the right to utilize contraception), *Washington v. Glucksberg*, 521 U.S. 702, 710 (1997) (framing the issue by questioning whether the right to die by physician assisted suicide is a fundamental liberty), *Lawrence v. Texas*, 539 U.S. 558 (2003), and *Casey*, 505 U.S. 833.

154. See Sunstein, *supra* note 151, at 989; see also Suter, *supra* note 85, at 1520–56, 1569–92.

155. 521 U.S. 702.

156. *Id.* at 721 (quoting *Moore v. Cleveland*, 431 U.S. 494, 503 (1977) (plurality opinion)) (internal quotation marks omitted) (upholding a ban on physician-assisted suicide).

expansion of Due Process Clause protection.<sup>157</sup> Given prenatal genetic testing's relative recency, the vast improvements in our understanding and knowledge of genetics, and the testing improvements offered by NIPD, one would find it hard to argue that such a right on its own was deeply rooted in our nation's history and traditions.

However, Rehnquist's historical lens may not be as clear as it seems. Cass Sunstein has demonstrated that many of the cases that originally defined the substantive due process right to privacy in decisions surrounding reproduction and sexuality would also fail *Glucksberg's* traditionalism test.<sup>158</sup> Prior to *Roe*, there was no clear tradition that permitted abortion.<sup>159</sup> Prior to *Eisenstadt v. Baird*,<sup>160</sup> there was no longstanding acceptance of contraceptive use outside of marriage.<sup>161</sup> *Lawrence v. Texas*<sup>162</sup> did not vindicate a historical tradition of privacy and liberty in all adult sexual relations. These activities are representative, however, of the kinds of broader traditional interests that the Court has historically protected by establishing substantive due process rights, such as preserving autonomy and liberty in decisions relating to family, reproduction, and intimate relations.<sup>163</sup> While traditionalism itself may not be the best mechanism to predict the outcome of a substantive due process challenge related to reproductive rights, it can provide guidance as to whether the claimed right looks similar to or could fall under other rights that have been traditionally recognized.<sup>164</sup>

When framed as part of the existing right to make an abortion decision without undue government interference, the right to have an abortion for any reason appears significantly more justifiable. The decision to have an abortion based on a genetic condition is no less intimate, challenging, or important than the decision to have it for any other reason. If a woman has the right to decide to abort her fetus because she cannot afford to keep it, she should also have the right to decide to abort a fetus with a genetic condition because she cannot afford the care

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157. *See id.*

158. Sunstein, *supra* note 151, at 990.

159. *See id.*

160. 405 U.S. 438 (1972).

161. *See Griswold v. Connecticut*, 381 U.S. 479 (1965) (discussing the right to use contraceptives in relation to the inherent privacy involved in marital relationships, but avoiding any discussion of intimate relationships separate from marriage).

162. 539 U.S. 558 (2003).

163. *See Sunstein, supra* note 151, at 990–91.

164. *See id.*; *see also Tribe & Dorf, supra* note 153, at 1101–02 (arguing that precedent and historical tradition should be placed on equal footing in determining whether a fundamental right exists).

the child would require. Justice Blackmun's opinion for the Court in *Thornburgh v. American College of Obstetricians & Gynecologists*<sup>165</sup> states that

[f]ew decisions are more personal and intimate, more properly private, or more basic to individual dignity and autonomy, than a woman's decision—with the guidance of her physician and within the limits specified in *Roe*—whether to end her pregnancy. A woman's right to make that choice freely is fundamental.<sup>166</sup>

The Court has historically made no attempt to qualify how a woman weighs her reasons or measure whether her reasons satisfy an external standard. A woman's thought process surrounding the decision of whether and when to have a child, with whom, and for what reasons should not be dissected by the government into valid and invalid reasons once they have entered her mind.<sup>167</sup> There is nothing inherently special about choosing an abortion for genetic reasons that warrants excluding them as a group from substantive due process protection. As a result, the right to choose abortion based on the results from prenatal genetic tests should be considered part of the existing fundamental right to choose to have an abortion.

The Court must then determine whether to extend substantive due process protection to a decision to abort based on any genetic test or only certain ones. Examining the justifications for creating the fundamental right to abortion offers some guidance on how the Court might think about such issues. The Supreme Court in *Roe* stressed the importance of protecting the abortion right because of the burden a state prohibition on abortion would impose on a woman in the case of an unwanted pregnancy.<sup>168</sup> The Court listed a series of potential harms that a woman would have to face in pregnancy and child rearing, including specific and direct harm caused by pregnancy and childbirth,<sup>169</sup> present or future distress caused

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165. 476 U.S. 747 (1986).

166. *Id.* at 772.

167. A citizen's right to privacy in his or her own thoughts has consistently been referred to as one of our most fundamental rights. *See, e.g., Stanley v. Georgia*, 394 U.S. 557, 566 (1969) ("Whatever the power of the state to control public dissemination of ideas inimical to the public morality, it cannot constitutionally premise legislation on the desirability of controlling a person's private thoughts."); *Olmstead v. United States*, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting) ("The makers of our Constitution . . . sought to protect Americans in their beliefs, their thoughts, their emotions and their sensations. They conferred, as against the government, the right to be let alone—the most comprehensive of rights and the right most valued by civilized men.")

168. *Roe v. Wade*, 410 U.S. 113, 153 (1973). In Part II I noted that the impositions-based justifications for creation of the abortion right seemed to fit more directly with an equality-based approach; however, since they were given to help justify the creation of a substantive due process right to privacy, they are worth exploring in this context as well.

169. Health risks during pregnancy include gestational diabetes, pregnancy-related high blood pressure, anemia, depression, hyperemesis gravidarum (severe persistent nausea and vomiting), preeclampsia,

by having a child or an additional child, psychological harm, mental and physical health strains caused by child care, and the stigma of unwed motherhood.<sup>170</sup> *Casey* further defined the strength of the woman's interest in abortion in terms of the imposition placed on her by an unwanted pregnancy.<sup>171</sup> The Supreme Court held that the state could not proscribe abortion in all instances because

the liberty of the woman is at stake in a sense unique to the human condition and so unique to the law. The mother who carries a child to full term is subject to anxieties, to physical constraints, to pain that only she must bear. That these sacrifices have from the beginning of the human race been endured by woman with a pride that ennobles her in the eyes of others and gives to the infant a bond of love cannot alone be grounds for the State to insist she make the sacrifice. Her suffering is too intimate and personal for the State to insist, without more, upon its own vision of the woman's role . . . .<sup>172</sup>

The Court held that the burdens and impositions associated with enduring pregnancy, giving birth, and raising a child were sufficient to establish a substantive due process right that protects a woman's abortion decision from unwarranted governmental interference.<sup>173</sup> The impositions that warrant the creation of a substantive due process right seem to arise from being forced to carry and give birth to a child that you have decided you do not want, regardless of the reason, rather than the nature of the imposition posed on the mother from a specific genetic condition or characteristic of the child. As a result, all reasons—genetic or otherwise—for deciding to terminate a pregnancy should warrant substantive due process protection.

## 2. The Undue Burden Analysis

The Court will analyze any substantive due process challenge brought to a RBAP under the undue burden standard set out by the Court in *Casey*. The stand-

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and a number of pregnancy-associated infections. *Pregnancy Complications*, WOMENSHEALTH.GOV (Sept. 27, 2010), <http://womenshealth.gov/pregnancy/you-are-pregnant/pregnancy-complications.cfm>.

170. *Roe*, 410 U.S. at 153. The Court also noted, "There is also the distress, for all concerned, associated with the unwanted child, and there is the problem of bringing a child into a family already unable, psychologically and otherwise, to care for it." *Id.*

171. *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 852 (1992).

172. *Id.*

173. See I. Glenn Cohen, *The Constitution and the Rights Not to Procreate*, 60 STAN. L. REV. 1135, 1155 (2008) (suggesting that the burden that having a child places on a woman was crucial to the Court's decision to protect her right to have an abortion).

ard requires that until viability, a woman has the right to choose to have an abortion without the state placing an undue burden on her.<sup>174</sup> A law poses an undue burden and is invalid when its “purpose or effect” is to place “a substantial obstacle in the path of a woman seeking an abortion of a nonviable fetus.”<sup>175</sup> The undue burden test aims to assess a woman’s ability to choose whether she should have a child. But unlike other tests, the Court’s definition of the undue burden test focuses more on the law’s effect on the woman’s ability to exercise her right rather than on the nature of the state interest in regulating the right.<sup>176</sup> RBAPs’ effect on the exercise of the abortion right will depend on the lens through which the right is viewed. This Subpart first examines the application of the undue burden test to RBAPs through the test’s existing liberty-based interpretation and then explores the implication of incorporating sex equality concerns to define the woman’s interests further.

Under the existing framework, a court must first examine whether the particular RBAP creates an undue burden on a woman’s right to choose to have an abortion. The Supreme Court in *Casey* explained that an undue burden exists if “in a large fraction of cases in which [the statute] is relevant, it will operate as a substantial obstacle to a woman’s choice to undergo an abortion.”<sup>177</sup> According to the *Casey* Court, “[T]he proper focus of constitutional inquiry is the group for whom the law is a restriction, not the group for whom the law is irrelevant.”<sup>178</sup> A statute is “relevant” to all individuals on whom it has “some actual effect.”<sup>179</sup> As a result, while considering the impact of a spousal notification law, the Supreme Court in *Casey* defined the relevant group as the 1 percent of married women seeking abortions who would not tell their spouses, not the other 99 percent for whom the law would prove irrelevant.<sup>180</sup> In *Carhart*, the Court defined the relevant group as “all instances in which the doctor proposes to use the prohibited proce-

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174. *Casey*, 505 U.S. at 846.

175. *Id.* at 877.

176. *See, e.g.*, *Preterm Cleveland v. Voinovich*, 627 N.E.2d 570, 576 (Ohio Ct. App. 1993).

177. *Casey*, 505 U.S. at 895; *see also Cincinnati Women’s Servs., Inc. v. Taft*, 468 F.3d 361, 369 (6th Cir. 2006); *Planned Parenthood of S. Ariz. v. Lawall*, 180 F.3d 1022, 1025 (9th Cir. 1999); *Women’s Med. Prof’l Corp. v. Voinovich*, 130 F.3d 187, 194 (6th Cir. 1997).

178. *Casey*, 505 U.S. at 894.

179. *Planned Parenthood of Idaho, Inc. v. Wasden*, 376 F.3d 908, 921 (9th Cir. 2004).

180. *Casey*, 505 U.S. at 894–95; *see also Tucson Women’s Ctr. v. Ariz. Med. Bd.*, 666 F. Supp. 2d 1091, 1097 (D. Ariz. 2009) (defining the relevant group for a statute requiring a twenty-four-hour waiting period prior to an abortion as “all women who would not otherwise wait 24 hours to have an abortion”).

dure, not merely those in which the woman suffers from medical complications.<sup>181</sup>

With RBAPs, the relevant group should be all women who would have an abortion solely because of the prohibited reason (for instance, women who would abort solely based on the sex or race of the child in a state where sex- or race-based abortions are prohibited). Unlike the regulation in *Carhart*, which did not foreclose abortion altogether despite the fact that it may have precluded the safest available procedure for a subset of women,<sup>182</sup> RBAPs prohibit the knowing provision of any kind of abortion for women who have decided to abort based on a prohibited condition. These women must either withhold information from their providers (and in the case of Oklahoma, refuse to answer a government form), or opt not to have abortions, significantly infringing upon their autonomy to make abortion decisions and to have open discussions with their physicians.

Because RBAPs proscribe providers from knowingly performing abortions sought for designated reasons, this alone could constitute an undue burden for all women seeking abortions for those reasons. Supporters of the law may argue that the law is irrelevant to a significant fraction of the women who would seek abortions for the proscribed reason because many of them might not tell their providers the reason they sought the abortions, thereby obviating the impact of the regulation.<sup>183</sup> However, the prohibition on knowingly providing abortions for the prohibited reason does not entirely define the law's effect. By singling out certain reasons for having an abortion as inappropriate, RBAPs may also have negative effects on women wanting abortions for proscribed reasons, even if they had not planned to tell their providers the reason they sought the abortions. Patients who seek prohibited abortions may be nervous, less forthcoming with important medical information, and concerned for their providers, thereby driving a wedge in the physician-patient relationship.

In nearly all contexts, the law has sought to protect the sanctity of the physician-patient relationship so that patients are able to be honest with their phy-

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181. *Gonzales v. Carhart*, 550 U.S. 124, 168 (2007).

182. *Id.* at 188–89 (Ginsburg, J., dissenting) (criticizing the majority for holding that the ban on intact D&X survives review because it would not be unconstitutional in a large fraction of relevant cases, based on the assertion that “the very purpose of a health exception is to protect women in exceptional cases,” and therefore the sheer volume of women for whom D&X would be the safest choice is irrelevant).

183. Of course, in Oklahoma this argument will not stand because the state mandates providers to give all patients seeking an abortion a form asking them to designate their reasons for seeking the abortion. The form permits women to decline to state a reason (at the very end), but the state cannot reasonably argue that it expects a significant fraction to decline to give a reason on a form it requires for all abortions. OKLA. STAT. ANN. tit. 63, § 1-738k (West Supp. 2012).

sicians to ensure the quality of their medical treatment, even regarding illegal activities like drug use and prostitution.<sup>184</sup> In the case of RBAPs, physicians may be more on edge or distant from patients whom they suspect might be pursuing abortions for prohibited reasons, as some states may criminally sanction providers for performing reasons-based abortions.<sup>185</sup> Some providers may refuse to offer abortion services to patients they suspect of seeking abortions for prohibited reasons for fear of being sued by the state or a family member with standing. RBAPs either prevent a woman from having an abortion for a proscribed reason or put her at odds with her provider in ways that threaten the sanctity of the physician–patient relationship in an unprecedented manner.

A state may also argue that while its RBAP prohibits abortion in certain circumstances, the burden that it places on the abortion right is not “undue.” The state could emphasize that not all genetic information is equally important or meaningful. Some information will reveal that the fetus will develop a severe disorder that will cause death in early childhood. Other information will reveal probable physical traits or characteristics. The state could argue that the severity and range of the potential physical manifestations associated with the specific genetic sequence should be relevant to defining the contours of any substantive due process protections. For instance, a prohibition on a woman’s right to abort her fetus because she has discovered that it will develop Tay-Sachs disease, a neurological disorder that causes progressive destruction of the nerve cells in the

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184. However, all states have mandatory reporting laws for child abuse and neglect. See CHILD WELFARE INFO. GATEWAY, MANDATORY REPORTERS OF CHILD ABUSE & NEGLECT: SUMMARY OF STATE LAWS 1, 2–4 (2010), available at [http://www.childwelfare.gov/systemwide/laws\\_policies/statutes/manda.pdf](http://www.childwelfare.gov/systemwide/laws_policies/statutes/manda.pdf). Mandatory reporting laws for child abuse and neglect provide a telling exception to the state’s commitment to the patient–physician relationship. The state interferes in the physician–patient relationship by requiring physicians to report suspected child abuse to the police, who will then investigate the claim and hopefully end any existing abuse. See *id.* at 6–55 (describing state statutes on mandatory reporting). In the case of reasons-based abortion prohibitions, a provider who knows that a woman seeks an abortion for a prohibited reason can refuse to provide the abortion, leaving the woman to find another provider who does not know her reason for seeking the abortion or to try to obtain the abortion in a different state where it is not illegal. In many cases, the RBAP will not prevent her from obtaining the abortion for the prohibited reason. However, in states like Oklahoma that have very few abortion providers, some women who have been turned down for an abortion in accordance with Oklahoma law may not have the means to travel to a different provider or state. In these instances, the law may prevent the abortion. See Kaiser Family Found., *supra* note 76. If a woman knew that she only had one opportunity to seek an abortion, however, she would most likely be extremely cautious about revealing her reason for seeking an abortion.

185. See, e.g., ARIZ. REV. STAT. ANN. § 13-3603.02(A)(1), (3) (West Supp. 2011) (making it a class three felony to “perform[] an abortion knowing that [it] is sought based on the sex or race of the child” or to “[s]olicit[] or accept[] monies to finance a sex-selection or race-selection abortion”).

brain and spinal cord and generally results in death by age five, may well constitute an undue burden on a woman's liberty to decide to terminate her pregnancy.<sup>186</sup> But would a prohibition on abortion based on physical characteristics constitute a similarly undue burden? Disappointing parents who have preferences regarding physical traits like eye color, sex, and height does not seem analogous.

Such an argument's success will depend on whether the Court focuses its analysis on the obstacle directly placed in the path of a woman who has decided to have an abortion or its assessment of the relative strengths and weaknesses of women's liberty interests in aborting for various reasons. To date, the Court has never permitted a law to directly prohibit a woman from having a previability abortion once she has decided to do so. Under a liberty-based interpretation, the Court should stay on this path. Permitting the state to regulate access to abortion sought for certain reasons, but not others, invites states to pass numerous RBAPs to redefine the boundaries of the abortion right, thereby creating a significant amount of arguably arbitrary line-drawing work for the Court. More damning, this approach would allow direct governmental intervention into a woman's reproductive decisionmaking process. After a woman has received NIPD testing, state restrictions on how she reaches her decision to terminate the fetus would reach into some of the most intimate and personal decisions a person can make in an area the U.S. Constitution is bound to protect from undue governmental interference.<sup>187</sup> Oklahoma's laws not only invade a woman's privacy by requiring that she be asked to list her reasons for seeking an abortion,<sup>188</sup> but they also restrict her liberty to receive an abortion if her reason is not a state-approved one.<sup>189</sup> Such restrictions stand in direct contrast to the liberties protected in *Roe* and *Casey*, which aimed to enable women to make the "ultimate decision" regarding abortion.<sup>190</sup> Once a woman has NIPD information about her fetus, it will be impossible for her to ignore certain features of it in making a termination decision. Further, once she has decided that a pregnancy is unwanted, she should not have to undergo the risks, discomforts, and hardships of pregnancy, childbirth, and child rearing simply because her reason for not wanting the pregnancy proved insufficient to

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186. See *Tay Sachs Disease*, GENETICS HOME REFERENCE, <http://ghr.nlm.nih.gov/condition/tay-sachs-disease> (last reviewed Sept. 2008); see also ROBERTSON, *supra* note 92, at 150; Adrienne Asch, *Disability Equality and Prenatal Testing: Contradictory or Compatible?*, 30 FLA. ST. U. L. REV. 315, 339 (2003).

187. See *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 874–75 (1992).

188. OKLA. STAT. ANN. tit. 63, § 1-738k(F)(15).

189. *Id.* § 1-731.2.

190. *Casey*, 505 U.S. at 877 (holding that "what is at stake is the woman's right to make the ultimate decision" free from undue governmental intrusion).



the state. In considering RBAPs, the Court should reaffirm the importance of strongly protecting procreative liberty with respect to previability abortions. A law whose constitutionality depends on women withholding information from their healthcare providers or sacrificing a constitutional right should not stand. Because of the negative effects on all members of the relevant class, RBAPs, regardless of the type of abortion they prohibit, should be held unconstitutional under *Casey's* undue burden standard.

### 3. RBAPs and Sex Equality

Having analyzed RBAPs under a liberty-based interpretation of the undue burden standard, I now consider the implications of incorporating sex equality arguments into a Fourteenth Amendment challenge to RBAPs. The equality-based interpretation of reproductive rights focuses on ensuring that our abortion laws maintain equality between the sexes. According to Balkin, under the equality-based interpretation, when “new reproductive technologies do not further equality between the sexes, their connections to the underlying justification for the abortion right become greatly attenuated, and we should leave their regulation to the political process in most cases.”<sup>191</sup> To define this approach further, one could examine, as Robertson has proposed, whether being able to select against a specific trait “is such an important part of personal liberty that it is essential for equal citizenship.”<sup>192</sup> In other words, is a woman’s ability to abort a fetus with a specific genetic condition so important that not being able to do so compromises her opportunities as an equal citizen? Some scholars have argued that having a child with severe mental and physical disabilities could conceivably impair a woman’s ability to pursue social and economic opportunities in a similar manner as having an unwanted child could compromise her opportunities.<sup>193</sup> Certainly, the inability to choose eye or hair color would not impair a woman’s opportunities to function as an equal citizen. Under an equality-based interpretation, the more severe and burdensome the genetic condition, the stronger the woman’s claim that the state could not prohibit selective abortion for that condition, whereas for milder conditions that did not pose a significant burden on the woman, an equality-based

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191. Balkin, *supra* note 21, at 857.

192. Robertson, *Abortion and Technology*, *supra* note 97, at 346. In contrast, state bans on sex-selective abortions are often justified as promoting equality between the sexes by taking a stand against sex discrimination in abortion.

193. *See, e.g.*, ROBERTSON, *supra* note 92, at 150.

approach would permit the regulation to stand.<sup>194</sup> As a result, legislation regulating a woman's ability to receive an abortion for a low-imposition reason could easily withstand a constitutional challenge, but legislation regulating a high-imposition reason would have much more difficulty surviving.

While potentially appealing at first, there are significant reasons to oppose directly incorporating sex equality considerations into constitutional analysis of RBAPs. First, doing so prioritizes one form of equality significantly over another by protecting women's equality at the expense of the equality of individuals with genetic diseases, conditions, and characteristics that are deemed "undesirable."<sup>195</sup> Such an approach would cast a dark shadow of eugenics over the states. This is especially true given the fact that many of the impositions associated with having a child with a genetic disorder or condition are socially constructed.<sup>196</sup> For a state to attempt to draw lines between those genetic conditions for which a woman has a fundamental right to abort and those for which she does not based on the relative (and assumed) imposition of having a child with the specific condition, it would have to publicly state that some lives are more burdensome than others.<sup>197</sup> Such a value judgment would be doubly reinforcing. If society did not provide the proper support for individuals living in society with a certain genetic condition, the potential imposition of having a child with that condition would increase. In some cases, society, by failing to accommodate the needs of the disabled, may increase the imposition of certain genetic disorders and then use the imposition of having a child with those conditions to justify the decision to permit abortions of fetuses

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194. See *Casey*, 505 U.S. at 876 (holding that the "undue burden standard is the appropriate means of reconciling the State's interest with the woman's constitutionally protected liberty"); *United States v. Carolene Prods. Co.*, 304 U.S. 144, 152 (1938) (reiterating that so long as a state's regulation is rationally related to a legitimate government interest, it is constitutional, unless the right infringes upon a citizen's fundamental right).

195. Sonia Suter acknowledged that an equality-based approach could be framed in multiple ways: sex equality, equality among different races and socioeconomic groups, and equality between those with disabilities and those without. Suter, *supra* note 85, at 1556–57. However, the majority of references to an equality-based approach to reproductive rights discusses the approach in terms of sex equality, rather than including equality among different races and socioeconomic groups or equality between those with disabilities and those without. Balkin, *supra* note 21, at 859–61 (discussing the benefits of grounding the abortion right in sex equality, while permitting notions of class equality from the Equal Protection Clause to provide protection against state-sponsored eugenics).

196. Adrienne Asch, *Reproductive Technology and Disability*, in REPRODUCTIVE LAWS FOR THE 1990's, at 69 (Sherrill Cohen & Nadine Taub eds., 1989); Sw. Educ. Dev. Lab., *The Socially Constructed Nature of Race, Culture, and Disability*, 4 RES. EXCHANGE, no. 3, 1999, <http://www.ncddr.org/products/researchexchange/v04n01/concepts.html>.

197. See Asch, *supra* note 186, at 338–39.

that screen positive for those disorders.<sup>198</sup> Adrienne Asch, a leading disability rights scholar, has argued that as soon as the government makes a determination that selective abortion is acceptable for certain genetic traits but not others, it necessarily makes a value judgment that some lives are valued over others, which “will surely exacerbate the discrimination and stigmatization of future children with the listed conditions.”<sup>199</sup> Wrapping these distinctions in the language of fundamental rights and equality will only serve to strengthen the idea that the government sanctions women’s decisions to abort fetuses with certain genetic diseases or conditions, but not others. A sex equality–based approach would only further entrench these discriminatory practices against those with undesirable genetic characteristics, rather than counteract them.

Second, evaluating RBAPs based on equal protection arguments may inadvertently permit pro-life states to narrow the scope of available abortions significantly by passing RBAPs for a wide range of conditions. As NIPD dramatically expands the range of conditions available for prenatal testing and our understanding of which genes influence which conditions improves, states may pass more and more laws prohibiting abortions for specific reasons that do not restrict gender equality, thereby creating an ever-diminishing realm of permitted abortions that would constrain women’s procreative choices in ways unseen since the passage of *Roe*.<sup>200</sup>

As a result, while incorporating sex equality concerns into the justifications for maintaining the abortion right is logically intuitive for many reasons, in the context of NIPD it potentially opens the door to government regulation of selective abortion for a wide range of genetic conditions and characteristics. Expanding its use into the realm of reproductive genetic testing and selective abortion could have highly detrimental consequences for individuals living with undesired genetic characteristics and the families of individuals with those characteristics. For the above reasons, courts should avoid using sex equality considerations to determine which genetic conditions can justify a woman’s abortion decision.

A strong liberty-based analysis of RBAPs, however, would simultaneously protect women’s ability to abort for any reason while also protecting their equality with men and serving other goals as well. In the context of RBAPs, a liberty-based

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198. For further discussion of the potential for discrimination caused by regulating prenatal genetic tests, see *id.* at 339. To avoid discrimination and negative public perception, disease-based interest groups are likely to lobby strongly both their state and federal representatives to avoid being included in the list of abortable conditions.

199. *Id.* at 339.

200. See AMERICANS UNITED FOR LIFE, *supra* note 4, at 5–6 (proposing prohibiting abortions sought solely because the fetus has a genetic abnormality or a potential genetic abnormality).

approach preserves women's equality by ensuring that they have the ability to make reproductive choices in light of their personal and career goals, as all reasons for having an abortion are protected. A strong liberty-based interpretation could also provide a good compromise between a woman's reproductive autonomy and disability equality. While disability rights advocates stake out a wide array of positions on selective abortion, many would generally prefer to ban all disability-based selective abortions.<sup>201</sup> However, doing so would severely curtail a woman's reproductive autonomy. Alternatively, a number of disability rights scholars have spoken out in favor of full reproductive autonomy and against any reasons-based restrictions on selective abortion to prevent the government from delineating the lives it values from those it does not.<sup>202</sup> Further, prioritizing liberty and autonomy above all in the RBAP analysis would realign the sanctity of the physician-patient relationship and prevent the government from intruding into the private thoughts of its citizens as they make some of the most personal decisions of their lives. Reaffirming women's fundamental liberty interest in being able to decide to have an abortion for any reason without undue governmental interference is essential to maintaining both equality and liberty with respect to selective abortion.

#### 4. Practical Challenges

In addition to the constitutional challenges RBAPs are likely to face, states will also encounter numerous practical challenges to their enforcement. While RBAPs may prevent women from revealing their reasons to abortion providers, in practice women can still obtain abortions for prohibited reasons. Existing RBAPs do not create penalties for women who sought and received abortions based on the sex or race of their fetuses nor do they require affidavits from women stating their reasons for seeking abortions.

In reality, these laws serve little function other than to demonstrate state disapproval of abortions for purportedly inappropriate reasons, to place barriers between women and their abortion providers, and to test the boundaries of Fourteenth Amendment due process protection. But they may prove quite effective for these purposes. Sex- and race-based abortion prohibitions may not prevent women who are sure they want sex- or race-based abortions from receiving

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201. See Samuel R. Bagenstos, *Disability, Life, Death, and Choice*, 29 HARV. J.L. & GENDER 425, 439 (2006); John F. Muller, *The New Parenthood and the Old Ambivalence About Disability: Baby Doe, Prenatal Testing, and Disability Rights* (Yale Law Sch. Student Prize Paper No. 44, 2009), [http://digitalcommons.law.yale.edu/ylsspps\\_papers/44](http://digitalcommons.law.yale.edu/ylsspps_papers/44).

202. See, e.g., Asch, *supra* note 186, at 339.

them; instead, they may serve to dissuade undecided women by sending them a clear message that sex and race are not appropriate factors to consider in making a decision about whether to have an abortion. Consequently, this legislation may reduce the overall number of sex- or race-based abortions.

In sum, the Court should reaffirm that the Fourteenth Amendment protects a woman's right to have an abortion for any reason prior to viability. The Court should evaluate challenges to RBAPs under the existing undue burden standard and strongly reinforce a woman's procreative liberty interest in her abortion decisions. The right to abortion should not be divided into appropriate and inappropriate reasons; rather, it should be protected prior to viability for all reasons. In the context of RBAPs, a strong liberty-based interpretation will protect women's interests in sex equality, but it will not permit those same interests to limit the scope of the abortion right. Because of the direct negative impact RBAPs put on all women seeking abortions for the proscribed reasons, the Court should strike them down as unconstitutional.

#### IV. REASONS-BASED TESTING PROHIBITIONS

As a result of the constitutional and practical challenges associated with RBAPs, states may seek other methods of regulating reasons-based abortions. Rather than prohibiting the provision of abortions performed for specific reasons, states may decide to restrict women's access to NIPD to prevent prospective parents from receiving the information on which to make a selective abortion decision.<sup>203</sup> For instance, a state wishing to prevent sex-selective abortions could attempt to prohibit NIPD testing for a fetus's sex prior to viability.<sup>204</sup> Given the wide range of genetic information that could be offered to parents through NIPD, the early stage in the pregnancy in which the information is provided to prospective parents, and the relative ease of procuring an abortion earlier in pregnancy, many states may attempt to restrict the genetic tests that can be offered in an

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203. See Robertson, *Abortion and Technology*, *supra* note 97, at 377; Suter, *supra* note 85, at 1517, 1531 (suggesting that some states might restrict the ability to get information about fetal traits by prenatal or preimplantation genetic testing).

204. Postviability, parents would still have plenty of time to decorate the nursery, have a pink- or blue-themed baby shower, and pick a name, but they could not use the information to decide whether to abort. For a constitutional analysis of a woman's right to engage in sex selection, see John R. Schaibley III, Note, *Sex Selection Abortion: A Constitutional Analysis of the Abortion Liberty and a Person's Right to Know*, 56 IND. L.J. 281 (1981), and Angela M. Long, *Why Criminalizing Sex Selection Techniques Is Unjust: An Argument Challenging Conventional Wisdom*, 14 HEALTH L.J. 69, 79 (2006) (noting that the Canadian Royal Commission on New Reproductive Technologies recommended that fetal sex information not be disclosed to patients until the third trimester).

NIPD protocol in hopes that those restrictions will be more effective at preventing selective abortion than restrictions on the abortions themselves. The following section will explore the Fourteenth Amendment challenges to reasons-based testing prohibitions (RBTPs).

If the proposed framework in Part III is adopted, such that all reasons for seeking an abortion are protected by the Fourteenth Amendment, the question then arises whether the ability to access the test that would inform a protected decision would always be protected as part of the right to make the decision itself. While scholars and courts have debated the question, the law is not settled on this issue.<sup>205</sup> Proponents of RBTPs may also raise First Amendment challenges that Suter and Robertson have considered, but it is my intent here to limit the focus to the Fourteenth Amendment.<sup>206</sup> This Part analyzes arguments on both sides of this issue and concludes that the Fourteenth Amendment should protect the ability to decide to have a prenatal genetic test.

#### A. A Right to Prenatal Genetic Testing

The Northern District of Illinois's 1990 decision in *Lifchez v. Hartigan*<sup>207</sup> is the only federal decision to address directly whether the constitutional protections created in *Roe v. Wade* extend to prenatal genetic testing. In that case, physicians challenged the Illinois Abortion Law that prohibited experimentation on a human fetus unless the experimentation was therapeutic to the fetus, on the grounds that the law was unconstitutionally vague and violated the woman's right to privacy in reproductive decisions.<sup>208</sup> The physicians claimed that the vagueness of the term "experiment" could include prenatal genetic testing procedures, like amniocentesis and CVS, which women often used in determining whether to terminate their

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205. See *Lifchez v. Hartigan*, 735 F. Supp. 1361 (N.D. Ill. 1990); Radhika Rao, *Equal Liberty: Assisted Reproductive Technology and Reproductive Equality*, 76 GEO WASH. L. REV. 1457, 1487 (2008) (arguing that it would be constitutional to prohibit prenatal testing to obtain information about certain genetic and chromosomal conditions, but that the right to abort a fetus should be protected in all instances, regardless of a woman's reasons); Robertson, *supra* note 91, at 427; Suter, *supra* note 85, at 1531–36.

206. See Robertson, *Abortion and Technology*, *supra* note 97, at 377; Suter, *supra* note 85, at 1534–37. In the immediate context of NIPD and RBTPs, the state should have the ability to restrict the sale of a particular genetic test without running afoul of the First Amendment. The question of whether the state can restrict the communication of genetic testing results without violating the First Amendment, however, will be extremely important with respect to whole genome sequencing. I plan to address this issue in future work.

207. 735 F. Supp. 1361.

208. *Id.* at 1363 (citing ILL. REV. STAT. ch. 38, ¶ 81-26, § 6(7) (1989)).

pregnancies and were not “therapeutic.”<sup>209</sup> The District Court concluded that the Fourteenth Amendment protected a woman’s ability to access prenatal testing, stating that

[t]he cluster of constitutional choices that includes the right to abort a fetus within the first trimester must also include the right to submit to a procedure designed to give information about that fetus which can then lead to a decision to abort. Since there is no compelling state interest sufficient to prevent a woman from terminating her pregnancy during the first trimester, there can be no such interest sufficient to intrude upon these other protected activities during the first trimester.<sup>210</sup>

Since the decision, scholars have frequently cited *Lifchez* as demonstrating the existence of a right to access prenatal testing.<sup>211</sup>

On the other hand, *Lifchez* was decided before *Casey* and *Carhart*, and before NIPD opened up a new world of possibilities in prenatal genetic testing. The changes in doctrine brought about by *Casey* and *Carhart* raise significant questions about whether *Lifchez* would still be decided the same way today. While the *Casey* Court emphasized that autonomy and the ability to make autonomous decisions are crucial to self-definition, it also stressed the importance of the state’s interest in potential life even during the first trimester.<sup>212</sup> In *Carhart*, the Court shifted away from its reasoning in prior procreative liberty cases by placing far less importance on individual autonomy in favor of a more paternalistic and society-oriented stance.<sup>213</sup> But the Partial-Birth Abortion Ban Act of

209. *Id.* at 1366.

210. *Id.* at 1377 (citations omitted); *see also* Forbes v. Napolitano, 236 F.3d 1009, 1014 (9th Cir. 2000) (Sneed, J., concurring).

211. *See, e.g.*, Maureen McBrien, *Human Cloning: Beyond the Realm of the Constitutional Right to Procreative Liberty*, 21 BUFF. PUB. INT. L.J. 107, 120–21 (2002–2003); Amber Stine, *The Implications of the Due Process Clause on the Future of Human Embryonic Gene Therapy*, 45 ARIZ. L. REV. 507, 519 (2003); Note, *Regulating Preimplantation Genetic Diagnosis: The Pathologization Problem*, 118 HARV. L. REV. 2770, 2773–74 (2005).

212. Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 873 (1992) (“[N]ot every law which makes a right more difficult to exercise is, *ipso facto*, an infringement of that right.”).

213. *See, e.g.*, David L. Faigman, *Defining Empirical Frames of Reference in Constitutional Cases: Unraveling the As-Applied Versus Facial Distinction in Constitutional Law*, 36 HASTINGS CONST. L.Q. 631, 647 (2009) (“Unfortunately, the fact-standard applicable after *Casey* became substantially more convoluted with the Court’s decision in *Gonzales v. Carhart* . . . Without overruling *Carhart* I explicitly, the [*Gonzales v. Carhart*] Court upheld a virtually identical federal version of the state law invalidated in the earlier case.”); Greenhouse, *supra* note 112, at 43 (“[I]t is as if [in *Carhart*] two decades of post-*Roe* discourse have been erased, decades during which the Court by fits and starts constructed a unified jurisprudence of women’s rights and abortion rights. Beginning with the *Thornburgh* decision in 1986, and reaching a peak in *Planned Parenthood v. Casey* in 1992, the Court gradually came to place women at the center of decision-making about their own reproductive lives,

2003<sup>214</sup> that the Court upheld in *Carhart* only prohibited a particular method of abortion rather than prohibiting a woman's ability to obtain an abortion once she had decided she did not want the fetus, which is the case with RBAPs. So while these cases may demonstrate a general shift in how the Court weighs the respective state and individual interests with respect to abortion, they do not negate the overall importance of procreative liberty and personal autonomy in the Court's Fourteenth Amendment jurisprudence.

Over the last thirty years, prenatal genetic testing has become entrenched into prenatal practice.<sup>215</sup> In fact, California and Iowa currently require physicians to offer prenatal screening to all pregnant women, followed by invasive prenatal genetic testing if necessary and desired.<sup>216</sup> Many women have come to expect and depend upon the ability to use prenatal genetic testing to screen for and diagnose certain genetic diseases to facilitate their private decisions about abortion.<sup>217</sup> Given the importance of all forms of prenatal genetic testing in standard prenatal practice and the relevance of the information provided by such tests to constitutionally protected decisions regarding reproduction, medical care, and parenting, Fourteenth Amendment protection should extend to a woman's ability to decide to have NIPD. To balance the various state and individual interests associated with widespread NIPD appropriately, however, the Court should carefully select the applicable standard of review.

## B. The Standard of Review

Determining the appropriate standard of review for regulation that constrains a constitutionally protected right is not as simple as it once was. During the twentieth century, the Court developed tiers of scrutiny to evaluate the validity of government action that restrained individual rights.<sup>218</sup> Laws that restricted fundamental due process rights, classified groups by race or national origin, restricted content-based speech, or impinged upon religious belief or free exercise were all

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and to understand freedom of reproductive decision-making as central to women's equality." (footnotes omitted)); Reva B. Siegel, *Dignity and the Politics of Protection: Abortion Restrictions Under Casey/Carhart*, 117 YALE L.J. 1694, 1767 & n.197 (2008).

214. 18 U.S.C. § 1531 (2006).

215. See *Margaret S. v. Edwards*, 488 F. Supp. 181, 220–21 & n.124 (E.D. La. 1980) (finding amniocentesis to be "an important medical procedure" that is not experimental).

216. Jelliffe-Pawlowski et al., *supra* note 56.

217. See Sonia M. Suter, *A Brave New World of Designer Babies?*, 22 BERKELEY TECH. L.J. 897, 928 (2007).

218. See Calvin Massey, *The New Formalism: Requiem for Tiered Scrutiny?*, 6 U. PA. J. CONST. L. 945, 945 (2004).



presumptively void and subject to strict scrutiny.<sup>219</sup> Laws that did not implicate these rights were subjected to the default level of minimal scrutiny and were presumed valid so long as they were rationally related to a legitimate state interest.<sup>220</sup> Over time, however, the Court has recognized that some “presumptively unlawful actions were more easily justifiable than others” and held that some presumptively valid actions should not survive minimal scrutiny.<sup>221</sup> This reasoning led to the development of a tiered review system with the introduction of intermediate scrutiny for government regulations that classify individuals based on sex or legitimacy, content-neutral speech regulations, and commercial speech regulations.<sup>222</sup> Intermediate scrutiny generally requires the government to prove that its regulation is substantially related to an important state objective.<sup>223</sup> Next, the Court applied an enhanced version of minimal scrutiny, the aptly named “rational basis with bite” standard, which allows government regulations to be struck down if they do not further legitimate government interests.<sup>224</sup> In the realm of substantive due process protections, the Court’s recent jurisprudence is a bit muddled with respect to the appropriate standard of review.

Given the range of interests at stake with respect to RBTPs and the Court’s opaque justifications for applying a particular standard of review in many of its recent cases, the standard of review that the Court should apply to RBTP challenges is not immediately clear. What does seem evident is that RBTPs are likely to be subject to a standard of review less stringent than strict scrutiny and more stringent than the minimal scrutiny of the rational basis test. Without question, RBTPs implicate a woman’s procreative liberty and privacy in her personal relations. In *Lawrence v. Texas*,<sup>225</sup> the Court did not explicitly establish that a fundamental right to privacy existed in all intimate relationships, but it did invoke a standard beyond mere minimal scrutiny.<sup>226</sup> *Casey*’s undue burden standard provides heightened scrutiny to abortion regulations, but there is open debate among scholars about whether this constitutes a form of intermediate scrutiny within the

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219. *See id.* at 949–50.

220. *See id.* at 951–52.

221. *Id.* at 945; *see, e.g.*, *U.S. Dep’t of Agric. v. Moreno*, 413 U.S. 528, 534–35 (1973) (holding that the government did not have a legitimate governmental interest in preventing hippies and members of a hippie commune from participating in the food stamps program).

222. *See Massey, supra* note 218, at 950–51.

223. *United States v. Virginia*, 518 U.S. 515, 533 (1996).

224. *Massey, supra* note 218, at 945, 951–56; *see, e.g.*, *City of Cleburne v. Cleburne Living Ctr., Inc.*, 473 U.S. 432 (1985); *Phylar v. Doe*, 457 U.S. 202 (1982).

225. 539 U.S. 558 (2003).

226. *See* Laurence H. Tribe, *Lawrence v. Texas: The “Fundamental Right” That Dare Not Speak Its Name*, 117 HARV. L. REV. 1893, 1916–17 (2004).

existing tier system or something different altogether.<sup>227</sup> Further, the undue burden standard by definition only examines the law's impact on a woman's ability to decide to have an abortion and does not adequately address her interest in using NIPD testing for reasons other than informing a selective abortion decision. RBTPs may constrain a woman's personal autonomy in medical decisions, a right that the Supreme Court has reviewed by balancing the state and individual interests in cases like *Cruzan v. Director, Missouri Department of Health*<sup>228</sup> and *Youngberg v. Romeo*.<sup>229</sup>

In addition to her substantive due process interests, RBTPs also implicate a woman's sex equality interests. Equal protection challenges based on a gender-based government action are subject to intermediate scrutiny review, which requires an exceedingly persuasive justification for the action.<sup>230</sup> Laws that infringe upon each of the different rights implicated by NIPD use have received some form of elevated scrutiny above the rational basis standard.<sup>231</sup> As such, the Court should adopt a standard of review that balances the relevant state and individual interests but prioritizes women's interests in procreative liberty and sex equality.

### C. Intermediate Scrutiny With an Exceedingly Persuasive Justification

Intermediate scrutiny with an exceedingly persuasive justification (I refer to this as the exceedingly persuasive justification standard) provides a good framework for creating a standard of review for RBTPs or any other law restricting reproductive genetic tests. As applied in *United States v. Virginia*,<sup>232</sup> the state must show that the challenged sex-based classification serves "important governmental objectives and that the discriminatory means employed are 'substantially related to the achievement of those objectives.'"<sup>233</sup> Further, the state has the "demanding" burden of demonstrating that its justification for such an action is "exceedingly persuasive."<sup>234</sup> This justification must also be "genuine, not hypothesized or invented *post hoc* in response to litigation."<sup>235</sup> In its sex-based equal protection jurisprudence, the Court frequently finds no exceedingly persuasive justification, but the standard

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227. See Massey, *supra* note 218, at 966.

228. 497 U.S. 261, 279 (1990).

229. 457 U.S. 307, 321 (1982).

230. *United States v. Virginia*, 518 U.S. 515, 533 (1996).

231. For a description of scrutiny of procreative, personal, and parenting rights that can be associated with NIPD, see *infra* Part IV.C.1.b.ii.

232. 518 U.S. 515.

233. *Id.* at 533 (quoting *Miss. Univ. for Women v. Hogan*, 458 U.S. 718, 724 (1982)).

234. *Id.* (quoting *Hogan*, 458 U.S. at 724).

235. *Id.*

has permitted state-mandated gender classifications to survive in some instances.<sup>236</sup> With a few adjustments, a similar standard could be applied to government efforts to regulate access to NIPD in a way that could more accurately account for the relative differences in genetic tests.

Use of an intermediate standard developed to protect the interests of women is a logical choice for RBTPs. RBTPs threaten a range of constitutionally protected rights, particularly for women. The exceedingly persuasive justification standard provides substantial protection for the range of interests a pregnant woman has in prenatal genetic testing while permitting states to restrict a woman's ability to test in order to further states' important interests in rare, but identifiable, instances. In the context of RBTPs, a government's justification should not be found exceedingly persuasive without empirical evidence demonstrating its validity. This justification must be based on evidence, rather than conjecture or assumptions, though it need not be compelling evidence.

### 1. The Relevant Interests

In establishing a new standard, it is important to define the relevant interests on both sides. The Court has established state interests related to reproductive decisions. These interests, described in detail below, include maintaining medical standards, protecting the woman's health, protecting potential life, and preserving the medical profession's integrity. Further, I argue for the inclusion of an additional state interest in protecting societal integrity, which will include the notion of equality based on race, on socioeconomic status, and on level of ability. A woman's interests include protecting her procreative, personal, and parental liberties, as well as maintaining equality in society with men. The following Subpart outlines the role of these interests with respect to state regulation of NIPD testing for specific genetic conditions.

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236. See, e.g., *Hogan*, 458 U.S. at 724, 733 (striking down Mississippi University for Women's single-sex admissions policy); see also *J.E.B. v. Alabama ex rel. T.B.*, 511 U.S. 127, 139–42 (1994) (striking down gender-based peremptory challenges in jury selection). *But see* *Nguyen v. INS*, 533 U.S. 53, 71 (2001) (upholding regulations granting citizenship to a child born abroad to a noncitizen mother and a citizen father, where the same regulations would not apply if the noncitizen parent was the father); *Heckler v. Matthews*, 465 U.S. 728, 745–46 (1984) (holding that the protection of reasonable reliance on Social Security benefits for spouses constituted an exceedingly persuasive justification).

### a. The State's Interests

*Roe* and *Casey* acknowledged three important state interests that would justify regulation in the area of abortion so long as they did not impose an undue burden prior to viability. These interests include maintaining medical standards, preserving the mother's health, and protecting potential human life.<sup>237</sup> In *Gonzales v. Carhart*, the Supreme Court further expanded the state interests that could justify regulating abortion to include protecting society and the medical profession from moral "coarsen[ing],"<sup>238</sup> which Sonia Suter has termed "repugnance."<sup>239</sup> None of these interests are sufficient to prohibit a woman from having an abortion, but the *Casey* Court held that a state can "enact laws to provide a reasonable framework for a woman to make a decision that has such profound and lasting meaning."<sup>240</sup> As part of this framework, states can pass laws designed to advance their interest in potential life "as long as their purpose is to *persuade* the woman to choose childbirth over abortion," and so long as the method of persuasion does not constitute an undue burden on the overall right to have an abortion.<sup>241</sup> In drawing lines between what constitutes an undue burden and what is a legitimate method of persuasion in a reasonable framework for decisionmaking, the Court has upheld statutes that require women to receive certain information regarding their fetuses and the abortion procedure, to wait twenty-four hours prior to having an abortion procedure, and to receive only certain kinds of abortion procedures.<sup>242</sup> The Court has invalidated spousal notification laws and parental notification laws for creating an undue burden on a woman's ability to seek an abortion.<sup>243</sup>

The state's general interests in regulating NIPD will not differ from its interests in regulating abortions, but the widespread availability of NIPD will alter the strength of some of the interests in ways that can affect the balance of rights between the interests of the woman and those of the state. In this Subpart, I analyze the impact of NIPD on each of the existing state interests and then ar-

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237. See *Roe v. Wade*, 410 U.S. 113, 149–50 (1973).

238. *Gonzales v. Carhart*, 550 U.S. 124, 157 (2007).

239. Suter, *supra* note 85, at 1519.

240. *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 873 (1992); see Suter, *supra* note 85, at 1592 (arguing that the repugnance interest could, over time, be expanded *ad infinitum* to subsume much of our currently understood reproductive right).

241. *Casey*, 505 U.S. at 878 (emphasis added).

242. See *Carhart*, 550 U.S. at 158; *Casey*, 505 U.S. at 886–87 (illustrating that a twenty-four-hour waiting period does not constitute an undue burden on the mother).

243. See *Casey*, 505 U.S. at 888–98 (stating that mandatory spousal notification constitutes an undue burden because it will keep many women from getting abortions).

gue that the integration of NIPD into standard prenatal care warrants expanding the state's interests to include a new interest in protecting societal integrity.

**i. Maintaining Medical Standards**

The state's interest in maintaining the standards of medical practice provides a strong rationale for states to determine which genetic tests are appropriate for use in the prenatal context. First and foremost, a state will want to ensure that all prenatal genetic tests meet minimum standards for accuracy and reliability. As early as 1978, federal courts acknowledged that "[s]ociety has an interest in insuring that [prenatal] genetic testing is properly performed and interpreted."<sup>244</sup>

Typically, ensuring the accuracy and reliability of medical tests falls to the Food and Drug Administration (FDA) and the Center for Medicaid and Medicare Services (CMS). CMS is the agency responsible for administering the Clinical Laboratory Improvement Amendments (CLIA). Neither agency, however, has an affirmative position with respect to regulating genetic tests.<sup>245</sup> The FDA has taken some affirmative steps over the last few years to demonstrate its intention to regulate access to genetic tests, but the exact mechanism and form of its intended regulations remain unknown.<sup>246</sup> In a press briefing, the FDA stated that the level of regulation necessary would vary depending on the risk the specific test poses to the consumer, which would include the potential harm from an incorrect result.<sup>247</sup> This statement may indicate that the FDA's intended approval process will consider the context in which a genetic test is used, meaning that it may be more restrictive regarding the accuracy of prenatal tests than for the same genetic tests offered postnatally.<sup>248</sup>

In the absence of an FDA regulatory framework for genetic tests, states may wish to restrict the use of NIPD for certain conditions on the basis that certain tests are not sufficiently determinative of phenotype to justify use in a prenatal context. Currently, the vast majority of available prenatal genetic tests have high

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244. *Gildiner v. Thomas Jefferson Univ. Hosp.*, 451 F. Supp. 692, 696 (E.D. Pa 1978).

245. DEP'T OF HEALTH & HUMAN SERVS., U.S. SYSTEM OF OVERSIGHT OF GENETIC TESTING: A RESPONSE TO THE CHARGE OF THE SECRETARY OF HEALTH AND HUMAN SERVICES 29 (2008), available at [http://oba.od.nih.gov/oba/sacghs/reports/sacghs\\_oversight\\_report.pdf](http://oba.od.nih.gov/oba/sacghs/reports/sacghs_oversight_report.pdf). For a more detailed explanation of the various entities that may determine the availability of NIPD tests, see King, *supra* note 22, at 633–38.

246. See Alla Katsnelson, *Consumer Gene Testing in the Hotseat: A Week of Hearings Sows Uncertainty for the Fledgling Consumer Genomics Industry*, NATURE (July 29, 2010), <http://www.nature.com/news/2010/100729/full/news.2010.382.html>.

247. *Id.*

248. See King, *supra* note 22, at 635.

analytic and clinical validity—in other words, they are highly accurate at identifying the genetic sequence, or genotype, in question,<sup>249</sup> and the genotype is highly predictive of the physical manifestation of the disease or condition, or phenotype.<sup>250</sup> However as our knowledge of genetics has grown, our ability to test for genetic mutations has moved, and will continue to reach, far beyond those diseases and conditions caused by a single genetic mutation. The vast majority of heritable traits and conditions result from a variety of gene–gene and gene–environment interactions, which can compromise the accuracy of a genetic test. Numerous factors could cause an individual to receive a test result indicating that the fetus has the genotype that corresponds with a particular genetic condition from a test with high analytical validity but have a child who does not present the phenotype of the condition that was tested for.<sup>251</sup> A test with low clinical validity could cause a woman to abort a fetus that would never develop the genetic condition in question, causing needless heartache, loss, and expenditure of healthcare resources.<sup>252</sup> Given the state’s interest in preserving medical standards and its interest in preserving unborn fetal life, it may wish to establish certain threshold levels for the clinical validity of NIPD to avoid having women make termination decisions based on unreliable test results.

## ii. The Pregnant Woman’s Health

On the other hand, the state’s interest in protecting the pregnant woman’s health would encourage NIPD use, rather than permit its restriction, as it presents little to no risk to the woman. While NIPD does raise questions regarding

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249. See NAT’L INSTS. OF HEALTH, ENHANCING THE OVERSIGHT OF GENETIC TESTS: RECOMMENDATIONS OF THE SACGT 15 (2000), available at [http://oba.od.nih.gov/oba/sacgt/reports/oversight\\_report.pdf](http://oba.od.nih.gov/oba/sacgt/reports/oversight_report.pdf).

250. See *id.* at 15.

251. A particular mutation’s presence may be only one part of a multifactorial predisposition to disease; other genetic sequences or environmental factors and their interaction may also contribute to the development of the disease phenotype. See Francis S. Collins et al., U.S. Nat’l Human Genome Research Inst., *A Vision for the Future of Genomics Research: A Blueprint for the Genomic Era*, 422 NATURE 836, 840 (2003). For example, an allele may have low penetrance, meaning that the presence of a particular genotype will not always produce the predicted phenotype. Denise Casey, *Evaluating Genetic Tests: Some Considerations*, HUMAN GENOME PROJECT INFO. (Aug. 1998), [http://www.oml.gov/sci/techresources/Human\\_Genome/resource/testeval.shtml](http://www.oml.gov/sci/techresources/Human_Genome/resource/testeval.shtml) (last modified Sept. 19, 2008). Low penetrance can even occur in single gene disorders. Additionally, epigenetic factors, which are also controlled by other genes and the environment, can affect whether a gene is turned “on” or “off”, which can alter the phenotype. See Elizabeth Pennisi, *Behind the Scenes of Gene Expression*, 293 SCIENCE 1064 (2001).

252. See Gregorio M. Garcia, *The FDA and Regulation of Genetic Tests: Building Confidence and Promoting Safety*, 48 JURIMETRICS 217, 232 (2008); King, *supra* note 22, at 636.

informed consent and genetic counseling that can have a significant impact on the pregnant woman's health,<sup>253</sup> these concerns would not affect the state's ability to regulate access to a particular test. As a result, this interest provides little support to a state's attempt to regulate access to NIPD.

### iii. Protecting Potential Life and the Status of the Embryo

As NIPD poses no direct threat to the embryo, some may argue that the state interest in protecting the potential life should not factor into decisions to regulate access to NIPD. A state may argue, however, that even its nascent interest in protecting fetal life ought to permit it to take action to prevent any fetus from being aborted solely on the basis of its sex or physical characteristics, like skin, hair, or eye color. If the state does indeed have an "important and legitimate" interest<sup>254</sup> in potential life "from the outset,"<sup>255</sup> one could argue that the interest should permit the state to restrict the provision of certain genetic information sought solely for parental preference, especially those that are discriminatory in nature.<sup>256</sup> Permitting the strength of the woman's interest in testing for a specific genetic condition to fluctuate based on the condition may shift the balance in favor of the state's interest in some instances. The woman's liberty interest will decrease as the genetic condition prohibited by the statute imposes a lesser financial, emotional, and physical burden on her life. Following this logic, a state could argue that it should be able to restrict access to NIPD for traits like hair color. If the strength of women's interest in genetic knowledge varies with the condition tested for, but the state's interest in protecting unborn life is the same for all conditions,<sup>257</sup> then for some conditions the state's interest in protecting life could outweigh women's interests in the information.

Rather than making such a claim based on an interest in unborn prenatal life, states may also argue that selective abortion based on certain genetic characteristics violates rights owed to the previability fetus. The previability fetus's legal status has not been conclusively determined. The law treats previability fetuses differ-

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253. For a detailed discussion of these issues, see King, *supra* note 22, at 640–47.

254. Planned Parenthood of Se. Pa. v. Casey, 505 U.S. 833, 871 (1992).

255. *Id.* at 869.

256. *See id.* at 869–71. If the Constitution protects a woman from being fired from her government job solely on the basis of her sex, could it not protect female fetuses from being aborted solely on the basis of their sex?

257. The state's level of interest in preserving potential life should be equivalent across all fetuses regardless of their genotype. This interest should increase throughout the course of the pregnancy, whereas the mother's interest in accessing prenatal genetic information will vary with the genetic condition.

ently in different contexts. In the criminal context, harming a previability fetus can result in the same set of charges as harm to a person.<sup>258</sup> In the abortion context, the previability fetus is not considered a person,<sup>259</sup> but whether its status resembles that of any other mass of cells or it has some heightened significance remains unsettled.<sup>260</sup> More recently, in the context of assisted reproduction and in vitro fertilization, the Tennessee Supreme Court in *Davis v. Davis*<sup>261</sup> held that preimplantation embryos were entitled to “special respect,” which falls somewhere in between person and property.<sup>262</sup> Margaret Olivia Little has advanced a similar view, stating that

a great many people believe [in] a *graduated* view of embryonic and fetal status: even at early stages of pregnancy, developing human life has an important value worthy of respect; its status grows as it does, increasing gradually until, at some point late in pregnancy, the fetus is deserving of the very strong moral protection due newborns.<sup>263</sup>

A state could argue that part of treating embryos and fetuses with “special respect” ought to entail not permitting the use of information regarding certain genetic characteristics to influence a woman’s decision about whether to carry the child to term. These claims, while novel, would strain legislative or regulatory body decisionmaking capabilities. However, drawing any lines between appropriate and inappropriate prenatal genetic tests based on the immeasurable state interest in protecting unborn fetal life permits a significant amount of arbitrary decisionmaking, which would grant state legislatures and courts a good deal of discretion in establishing those boundaries and limiting women’s access to valuable prenatal information.

#### iv. Protecting the Integrity and Ethics of the Medical Profession

A state might also try to justify an RBTP based on its interest in “protecting the integrity and ethics of the medical profession.”<sup>264</sup> In *Washington v.*

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258. See *Fetal Homicide Laws*, NAT’L CONF. STATE LEGISLATURES, <http://www.ncsl.org/issues-research/health/fetal-homicide-state-laws.aspx> (last updated Apr. 2012).

259. Indeed, the Court in *Roe v. Wade* stated that “the word ‘person,’ as used in the Fourteenth Amendment, does not include the unborn.” 410 U.S. 113, 158 (1973).

260. See Lisa Shaw Roy, *Roe and the New Frontier*, 27 HARV. J.L. & PUB. POL’Y 339, 357, 374–76 (2003).

261. 842 S.W.2d 588 (Tenn. 1992).

262. *Id.* at 596–97.

263. Little, *supra* note 70, at 332.

264. *Gonzales v. Carhart*, 550 U.S. 124, 157 (2007) (quoting *Washington v. Glucksberg*, 521 U.S. 702, 731 (1997)) (internal quotation marks omitted).



*Glucksberg*,<sup>265</sup> Washington state invoked its interest in protecting the medical profession's integrity to prohibit physician-assisted suicide.<sup>266</sup> In *Gonzales v. Carhart*,<sup>267</sup> the Supreme Court applied this interest to the abortion context by using it to uphold the Partial Birth Abortion Ban Act of 2003,<sup>268</sup> which prohibits abortion methods that involve partial delivery of a living fetus.<sup>269</sup> To avail of this interest, states would have to argue that performing a prenatal genetic blood test that may inform a selective abortion differs so significantly from performing any other traditionally performed test during pregnancy that could inform an abortion that it "implicates additional ethical and moral concerns that justify a special prohibition."<sup>270</sup> While the state's interest in protecting the medical profession's integrity and ethics as laid out in *Carhart* has been criticized as "vague and unbounded," using the interest to ban access to NIPD appears to be outside of even its furthest potential boundary.<sup>271</sup>

While prenatal tests that would inform selective abortions may raise ethical objections from the medical community,<sup>272</sup> they do not appear to trigger the same kinds of ethical concerns as those raised by physician-assisted suicide in *Glucksberg* and by partial-birth abortion in *Carhart*. In both cases, the Court permitted the state to draw "boundaries to prevent certain practices that extinguish life and are close to actions that are condemned."<sup>273</sup> In *Glucksberg*, the Court acknowledged the state's fear that legalizing physician-assisted suicide would be a first step toward permitting voluntary and perhaps involuntary euthanasia.<sup>274</sup> In *Carhart*, the Court acknowledged the congressional finding that abortion methods involving partial delivery of a live fetus "had a 'disturbing similarity to the killing of a newborn infant,' and thus it was concerned with 'draw[ing] a bright line that clearly distin-

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265. 521 U.S. 702.

266. *Id.* at 705–06.

267. 550 U.S. 124.

268. 18 U.S.C. § 1531 (2006).

269. *Carhart*, 550 U.S. at 168.

270. *Id.* at 158.

271. Suter, *supra* note 85, at 1568, 1585–86 (referring to this interest as the "repugnance approach" to reproductive rights and ultimately rejecting it).

272. For example, consider the opinion of Mark Hughes, a pioneer of preimplantation genetic diagnosis (a procedure that enables couples who have gone through in vitro fertilization to test their in vitro embryos for genetic conditions prior to implantation) and director of Genesis Genetics Institute (a prominent fertility lab in Detroit), that while creating designer babies is "technically feasible and it can be done . . . no legitimate lab would get into it, and if they did, they'd be ostracized." See Gautam Naik, *A Baby, Please. Blond, Freckles—Hold the Colic*, WALL ST. J., Feb. 12, 2009, <http://online.wsj.com/article/SB123439771603075099.html>.

273. *Carhart*, 550 U.S. at 158.

274. *Washington v. Glucksberg*, 521 U.S. 702, 732–35 (1997).

guishes abortion and infanticide.”<sup>275</sup> The actions involved in performing NIPD, however, are no different than performing any other blood test, which limits a state’s ability to claim that its interest in protecting the medical profession’s integrity should have much sway in the balance of a woman’s ability to have NIPD.

#### v. Protecting Societal Integrity

The integration of NIPD into prenatal medical practice raises additional concerns at the societal level that have not yet manifested in the abortion context. This Subpart argues that these societal concerns warrant the recognition of a new state interest in protecting societal integrity. Merriam-Webster’s Dictionary defines integrity as follows: “1: firm adherence to a code of especially moral or artistic values, 2: an unimpaired condition, 3: the quality of being complete or undivided.”<sup>276</sup> Each definition encapsulates some portion of the state interest I intend to describe, but the third—the quality or state of being complete or undivided—is the most salient. Unregulated NIPD accompanied by selective abortion has the capacity to cause significant changes in the makeup of our society and create a self-perpetuating cycle of discrimination, which can greatly harm society overall.

The role of government is often to protect the anonymous masses from the collective acts of self-interested individuals.<sup>277</sup> Advertising regulations,<sup>278</sup> pharmaceutical regulations,<sup>279</sup> and mandatory vaccination laws<sup>280</sup> all provide examples of areas in which the state can limit a constitutionally protected right or interest of an individual to protect the interests of society as a whole. In the case of NIPD, the interest in protecting societal integrity would permit the state to regulate access to NIPD for a particular condition when significant evidence demonstrates that individual parents have been selecting for or against a particular genetic condition in numbers that could harm society if left unregulated. The strength of the evi-

275. *Carhart*, 550 U.S. at 158 (citing Congressional Findings ¶ (14)(L), (G), *in notes following* 18 U.S.C. § 1531 (2000 & Supp. IV 2004)).

276. *Integrity*, MERRIAM-WEBSTER, <http://www.merriam-webster.com/dictionary/integrity> (last visited Aug. 22, 2012).

277. EZRA TAFT BENSON, *THE PROPER ROLE OF GOVERNMENT* (1968), *available at* [http://www.zionsbest.com/proper\\_role.html](http://www.zionsbest.com/proper_role.html) (“[I]t is generally agreed that the most important single function of government is to secure the rights and freedoms of individual citizens.”).

278. *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm’n*, 447 U.S. 557 (1980) (restricting false or misleading statements in advertisements for commercial products).

279. *Abigail Alliance for Better Access to Developmental Drugs v. von Eschenbach*, 469 F.3d 129, 138 (D.C. Cir. 2006) (restricting access to potentially life-saving cancer treatments that had not yet received FDA approval).

280. *Jacobson v. Massachusetts*, 197 U.S. 11, 38 (1905) (requiring an individual to receive an involuntary vaccination against smallpox to provide protection to the larger community).

dence supporting the existence of a harmful trend will determine the relative weight of this interest under the exceedingly persuasive justification standard. Given sufficient evidence demonstrating an increasingly harmful trend in individual reproductive choices, the state interest in protecting societal integrity should be sufficient to outweigh a woman's interest in a particular genetic test and permit the state to pass an RBTP.

Restrictions on individual autonomy have often been justified using John Stuart Mill's harm principle.<sup>281</sup> Mill argued that "[a]s soon as any part of a person's conduct affects prejudicially the interests of others, society has jurisdiction over it, and the question of whether the general welfare will or will not be promoted by interfering with it becomes open to discussion."<sup>282</sup> Prenatal genetic testing and selective abortion have been considered private actions that affect a limited range of individuals—the pregnant woman, her family and loved ones, the provider, and the fetus's father and his family. Under Mill's harm principle, state interests in restricting prenatal genetic testing and selective abortion have been equally narrow because the affect of any particular decision on society as a whole was minimal. As a result, a woman's personal interest in being able to exercise her reproductive autonomy has consistently outweighed the state's interest in protecting the previability fetus or the interests of other parties in the child's birth.<sup>283</sup> By recognizing a state interest in protecting the medical profession's integrity and ethics as a whole, however, the *Carhart* decision opened the door to the possibility that state interests in protecting groups of people beyond the immediately affected parties could gain traction in abortion jurisprudence.<sup>284</sup>

With respect to prenatal genetic testing and selection, the absence of a strong claim of societal harm has led scholars, most notably John Robertson, to focus

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281. See, e.g., Jaime S. King, *Predicting Probability: Regulating the Future of Preimplantation Genetic Screening*, 8 YALE J. HEALTH POL'Y L. & ETHICS 283, 301–02 (2008); Robertson, *Era of Genomics*, *supra* note 97, at 445.

282. JOHN STUART MILL, ON LIBERTY 73 (Elizabeth Rapaport ed., Hackett Publ'g Co. 1978) (1859).

283. See *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 877 (1992); *Bellotti v. Baird*, 443 U.S. 622 (1979); *Planned Parenthood of Cent. Mo. v. Danforth*, 428 U.S. 52 (1976).

284. See *Gonzales v. Carhart*, 550 U.S. 124, 157 (2007); see also Suter, *supra* note 85, at 1595–97 (arguing that *Carhart's* focus on the impact to outside parties should not be permitted to subsume the rights of the pregnant woman and her provider). *Carhart's* creation of a new state interest in protecting the medical profession's integrity and ethics has met with significant criticism for grounding its basis in intuition and personal morality rather than reasoned principles with transparent standards. This does not necessarily mean, however, that any new standard based on protecting societal interests must suffer from similar flaws. See also George J. Annas, *The Supreme Court and Abortion Rights*, 356 NEW ENG. J. MED. 2201, 2201–03, 2206 (2007) (describing the *Carhart* Court's move away from deferring to medical judgment with respect to abortions and other medical decisions made in the course of treatment).

their analysis of the relative interests almost entirely on which factors would affect the reproductive decision of the woman.<sup>285</sup> Robertson has argued that “[t]he strongest case for the parents is if they would not reproduce unless they could select that trait.”<sup>286</sup> Because of the limited immediate harm to other parties, Robertson’s approach would allow a woman’s willingness not to reproduce without selecting a trait to justify striking down nearly any reasons-based testing prohibition.<sup>287</sup> Robertson also argued, however, that if reproductive use of genetic information posed a substantial risk to others or to society as a whole, it might justly be limited.<sup>288</sup> NIPD’s potential to dramatically increase the range of prenatal genetic tests available and the population of pregnant women receiving diagnostic genetic information brings these issues to the forefront.<sup>289</sup>

The collective results of individual reproductive decisions can produce radical changes in the makeup of society that are self-perpetuating and reinforcing. Nonmedical sex selection provides a pertinent example because it reveals both the impact of a low-cost, minimal-risk testing method and the self-reinforcing nature of prejudice. Improvements in technology, mainly the availability of cheap, easily transportable ultrasound machines, have made nonmedical sex selective abortion possible everywhere from rural towns and villages to major metropolitan areas.<sup>290</sup> This has resulted in an overwhelming upsurge in the birth of boys in numerous countries worldwide, which in Asia alone has resulted in the loss of over 160 million potential women.<sup>291</sup> While sex selection practices in China and India have long been known, demographic data demonstrating significant gender imbalances due to sex selection have also been reported in Armenia, Azerbaijan, Georgia, Pakistan, Singapore, South Korea, Taiwan, and Vietnam.<sup>292</sup> Defying a single stereotype, sex selection practices occur “among Hindus, Muslims and Christians; among ethnic and political rivals; in economic powerhouses and in countries just

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285. Robertson, *Era of Genomics*, *supra* note 97, at 448. Robertson largely discusses reproductive selection in the context of selecting embryos created through in vitro fertilization based on information provided through preimplantation genetic diagnosis rather than on prenatal genetic diagnosis and selective abortion. *Id.*

286. *Id.* at 465.

287. *Id.* at 461–68 (extending the argument used to justify reproductive selection based on genetic susceptibility to diseases and disorders to homosexuality and perfect pitch).

288. *Id.* at 448–49.

289. King, *supra* note 22, at 3.

290. HVISTENDAHL, *supra* note 82, at 5 (“The link to technology was alarming, for it meant that India’s skewed sex ratio at birth was an outgrowth of economic progress, not backwards traditions.”).

291. *Id.* at 5–6. For perspective, 160 million women is more than the entire female population of the United States. *Id.* at 6.

292. *Id.* at 10.

on the cusp of development.”<sup>293</sup> These changes have skewed the worldwide male-to-female ratio to a biologically impossible level.<sup>294</sup> The impact of these individual choices on society largely remains to be seen. Predictions include a wide range of repercussions from “visible threats to women, including sex trafficking, bride buying, and forced marriages”<sup>295</sup> to changes in marriage and fertility patterns and “unrest among young adult males who are unable to find partners.”<sup>296</sup>

While the United States maintains a historically normal male-to-female ratio of 105 to one hundred,<sup>297</sup> research demonstrates that Americans have an interest in nonmedical sex selection as well. In a survey of prospective American parents, 25 to 35 percent state that they would use sex selection techniques if they were readily available.<sup>298</sup> For instance, when he began offering “no questions asked” nonmedical sex selection through preimplantation genetic diagnosis (PGD)<sup>299</sup> at his fertility clinic in Los Angeles, Fertility Institutes, Jeffery Steinberg noted that “[t]he patient response was crazy. We had twenty [phone] lines light up.”<sup>300</sup> Nonmedical sex selection now represents about 70 percent of Fertility Institutes’s practice.<sup>301</sup> The United States is also not devoid of parents who would go to great lengths to select their future offspring based on other nonmedical characteristics. A recent study performed at the New York University Human Genetic Program found that nearly 10 percent of patients would test for genes associated with traits such as longevity, superior intelligence, superior athletic ability, or height if they were available.<sup>302</sup> Likewise, when Fertility Institutes advertised it would soon provide PGD for hair color, eye color, and skin pigmentation, it reported that within a week it had half a dozen couples on the waiting

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293. *Id.*

294. *Id.* at 6; see also *The World Factbook—Field Listing: Sex Ratio*, CIA.GOV, <https://www.cia.gov/library/publications/the-world-factbook/fields/2018.html> (last visited Aug. 22, 2012). The shift in birth ratios in certain communities went from 105 boys for every one hundred girls, which is generally thought to be the naturally occurring ratio, to as high as 176 boys for every one hundred girls. *Id.*

295. HVISTENDAHL, *supra* note 82, at 15.

296. *The World Factbook—Field Listing: Sex Ratio*, *supra* note 294.

297. *Id.*

298. HVISTENDAHL, *supra* note 82, at 255 (citing DEBORA L. SPAR, *THE BABY BUSINESS: HOW MONEY, SCIENCE, AND POLITICS DRIVE THE COMMERCE OF CONCEPTION* 100 (2006)).

299. PGD is the process of removing a cell from an embryo created through in vitro fertilization and performing a genetic test on it to determine whether to transfer that embryo to the uterus for implantation.

300. HVISTENDAHL, *supra* note 82, at 251 (latter alteration in original) (quoting her conversation with Dr. Steinberg).

301. *Id.* at 250.

302. See *Consumers Desire More Genetic Testing, But Not Designer Babies*, SCI. DAILY (Jan. 26, 2009), <http://www.sciencedaily.com/releases/2009/01/090126100642.htm>.

list for a service that is much more invasive than NIPD and costs between \$15,000 and \$20,000.<sup>303</sup>

NIPD has the capacity to put this kind of knowledge into nearly every pregnant woman's hands at a time in the pregnancy when abortions are easiest to access and can be done discreetly. As each pregnant woman makes her decision independently, society will not know the full effect of those decisions for many years, if not decades. The state arguably has a legitimate interest in preventing large-scale societal harms that can result from individual reproductive decisions, if and when discriminatory trends begin to develop.

However, defining an interest in protecting societal integrity will be challenging. Societal-level harms are often difficult to quantify, especially if the state seeks to assert the interest to prevent a future harm to society. Shifts in perception, discriminatory feelings, and preferences can be difficult to detect and measure reliably. Further, determining the true reasons why a woman sought an abortion and the factors that most influenced her decision will prove even more challenging. States could easily overestimate the potential harm or use the interest to attempt to justify a wide range of potentially unnecessary restrictions. However, waiting for a significant societal harm to manifest itself fully, as sex selection has done in China and India, will take decades to recover from and should be avoided. As a result, courts should evaluate the strength of the state interest in protecting societal integrity based upon the strength of evidence that a problematic trend is beginning to develop. Only if a state can provide empirical data that demonstrates a growing trend of discriminatory testing and selective abortion at the population level that creates an exceedingly persuasive justification for restricting access to reproductive genetic testing should the RBTP be upheld. Producing this evidence will require maintaining anonymized records on both prenatal testing trends and certain genetic characteristics of newborns. In states like California, where both prenatal and newborn screening are already carefully monitored, gaining access to this data will not be extremely cumbersome.<sup>304</sup> Nearly all newborns in the country are subjected to newborn genetic-screening blood tests, which could be anonymized and analyzed for trends in selective abortion on a national or state

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303. Naik, *supra* note 272; *see also* MYRTLE FLIGHT & MICHAEL R. MEACHMAN, LAW, LIABILITY, AND ETHICS FOR MEDICAL OFFICE PROFESSIONALS 238–39 (5th ed. 2011). Fertility Institutes ended up not offering the service for the time being. Naik, *supra* note 272.

304. The California Prenatal Screening program is the largest in the country and currently screens approximately 70 percent of all pregnant women in the state. For more information, see *Prenatal Screening Program*, *supra* note 32. *See also Genetic Disease Screening Program*, CAL. DEP'T PUB. HEALTH, <http://www.cdph.ca.gov/programs/centerforfamilyhealth/Pages/GDSPFactSheet.aspx> (last modified Mar. 7, 2011).

level.<sup>305</sup> As more evidence of an imbalance or social discrimination appears, RBTPs designed to protect the interest in societal integrity have a greater chance of surviving a constitutional challenge.

The major benefit of permitting a state to regulate access to prenatal genetic tests based on an interest in societal integrity lies in the fact that it does not require the state to delineate genetic conditions that are appropriate for selective abortion. A state interest sufficient to uphold an RBTP would exist only when population-based data demonstrated trends of discrimination via selective abortion that could harm society as a whole if left unchecked. Requiring a state to demonstrate trends in NIPD and selective abortion practices removes much of the opportunity for state arbitrariness in determining which tests to restrict and the inevitable erosion of a woman's ability to access NIPD that would result from recognizing the interest in protecting potential life.

Further, unlike the interest in protecting potential life and the impositions-based maternal interest, the state interest in societal integrity would serve to reduce selective abortion for conditions that became more of a burden because of increased discrimination and reduced social support. As the availability of social support services decreases and as discrimination increases for a particular condition, the imposition of having a child with that condition increases significantly. Under an impositions-based approach, increased discrimination and decreased support services would therefore warrant permitting abortion for that condition, while an interest in societal integrity would work to counteract those pressures. For example, in the absence of a societal integrity interest, if discrimination against women became more severe, such that it became a greater burden for parents to support daughters, as it is in many areas of the world, the increased burden would strengthen women's interests in being able to abort based on sex. As the burden of having a daughter increases, the state's interest in protecting potential life remains the same, which would likely serve to tip the balance in favor of permitting sex selection in this scenario. If the state has an interest in preserving societal integrity, however, that interest would counterbalance the woman's interest in selecting based on sex to avoid additional burdens of having a female child, and it would permit the state to enact RBTPs to reduce and counteract further discrimina-

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305. While no genetic test is truly anonymous, the state should make significant efforts to ensure the privacy of the information and strictly limit use of and access to the material. Under no circumstances should the state be able to sell or transfer this genetic information for other forms of research without the express consent of the parents.

tion.<sup>306</sup> In this instance, RBTPs would serve both an expressive function of informing pregnant women that the government does not approve of NIPD use for nonmedical sex selection and a regulatory function of stifling the practice.

Overall, widespread use of NIPD will strengthen some state interests in regulation while weakening others. The state interests in maintaining medical standards and protecting societal integrity offer the strongest support for regulation. Regulations aimed at serving the state interest in maintaining medical standards are likely to appear as NIPD enters clinical practice, while regulations intended to protect societal integrity should not appear for quite some time, as significant data gathering and analysis at the population level would be required to support an RBTP. State interests in protecting women's health and the medical profession's integrity and ethics are unlikely to receive much traction as means to justify RBTPs, as NIPD's blood test presents little physical risk to the mother and has a low "repugnance" factor for physicians. Finally, NIPD does not alter the state's interest in protecting potential life. Courts considering the constitutionality of RBTPs should weigh these factors together against the strength of the pregnant woman's interests in accessing NIPD for a particular condition.

#### b. The Woman's Interests

How courts define a woman's interests will determine her ability to assert a right to access NIPD for various conditions. A woman's interests in accessing NIPD should account for both equality and liberty interests. From a sex equality perspective, the strength of a woman's interest in NIPD for a particular genetic condition will depend on the relative burden placed on her by having a child with the relevant condition as compared to a child without the condition and on the value of knowing that information at the earliest possible point in the pregnancy. The Constitution has historically protected three areas of liberty related to NIPD: procreative, personal, and parental.<sup>307</sup> Each of these interests must be separately accounted for, along with a woman's interest in sex equality. Any attempt to evaluate her interest in NIPD must account for all of the protected decisions that the information would inform, not just the abortion decision. The following Subparts describe equality and liberty interests and analyze their relevance to RBTPs.

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306. In addition, the state could improve state support and programs to reduce the burden of having a daughter.

307. See Rao, *supra* note 92, at 1489.



### i. Sex Equality Interests

At the core of women's sex equality interest in NIPD is an acknowledgment of the burdens often disproportionately placed on women in rearing all children and especially in rearing children with special or additional needs.<sup>308</sup> Preventing pregnant women from obtaining information about the genetic characteristics of their fetuses would, in many cases, significantly compromise their ability to make decisions regarding their role in society and their life path. The impact on a woman of having a child with a specific genetic characteristic should be weighed as one factor in her overall interest in accessing NIPD for that condition.

The Court should also consider the benefit to women of discovering a condition early in the first trimester, as opposed to the middle of the second trimester, when ultrasound, invasive genetic testing, and other forms of identifying disorders are available. Early knowledge would permit a woman to make a decision regarding termination long before the pregnancy showed or she needed to reveal her condition to her employer. She would also not spend as much time suffering from morning sickness, exhaustion, and other debilitating physical and emotional symptoms of pregnancy. NIPD's early timing gives women who decide to selectively abort the ability to do so at a time that avoids some of the negative physical side effects of pregnancy in the first trimester and the complications of having an abortion after a visible pregnancy. Both features greatly promote equality for women.

A woman's sex equality interest in testing for a particular condition, however, could also be quite low if she wanted to test for genetic conditions that would not require substantially more care than a normal child would or for conditions that would not influence her decision to abort. The strength of a woman's sex equality interests in NIPD will depend significantly on the genetic condition or characteristic tested for.

### ii. Liberty Interests

In addition to her equality interests, a woman also has a wider range of liberty interests in accessing NIPD testing than she does in selective abortion. As noted

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308. See Priscilla J. Smith, *Give Justice Ginsburg What She Wants: Using Sex Equality Arguments to Demand Examination of the Legitimacy of State Interests in Abortion Regulation*, 34 HARV. J.L. & GENDER 377, 411–12 (2011).

above, she has interests in procreative, personal, and parental liberty.<sup>309</sup> While the vast majority of cases that address abortion regulation have focused on procreative liberty, examining this interest in isolation no longer makes sense in the context of new reproductive technologies and reproductive genetic testing.<sup>310</sup> The further a regulation drifts from directly regulating abortion or contraception, the more likely it is also to infringe upon an individual's personal and parental liberties. Depending on the genetic condition tested for, NIPD results can be used to inform decisions in each of these areas.

Procreative liberty encompasses a woman's right to be free from undue government interference in deciding whether to have an abortion,<sup>311</sup> to use birth control,<sup>312</sup> to procreate with a particular partner,<sup>313</sup> or to refuse permanent sterilization.<sup>314</sup> The Supreme Court has a long history of protecting an individual's right to decide to avoid procreation.<sup>315</sup> The strength of a woman's procreative liberty interest in being able to access NIPD should depend entirely on the relevance of the information to her decision to have an abortion.

Personal liberty encompasses the notion of bodily integrity, which, generally stated, is the idea that an individual should be free from unwarranted intrusions into his or her body.<sup>316</sup> In *Cruzan v. Director, Missouri Department of Health*,<sup>317</sup> the Supreme Court held that the sanctity of the human body is fundamental, such that "[e]very violation of a person's bodily integrity is an invasion of his or her liberty."<sup>318</sup> The notion of personal liberty also extends beyond the medical setting to protect an individual's ability to make autonomous decisions regarding intimate

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309. See Rao, *supra* note 92, at 1488–89. A woman may also have First Amendment interests in access to NIPD. See Schaibley, *supra* note 204; Suter, *supra* note 85, at 1517–20. These interests are outside the scope of this Article, but I plan to take up this issue in the future.

310. Rao, *supra* note 92, at 1488–89.

311. *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833, 874 (1992).

312. *Eisenstadt v. Baird*, 405 U.S. 438, 453–55 (1972).

313. *Loving v. Virginia*, 388 U.S. 1, 11–12 (1967).

314. *Skinner v. Oklahoma*, 316 U.S. 535, 542–43 (1942) (striking down an Oklahoma statute that authorized the forced sterilization of thrice-convicted chicken thieves).

315. *Casey*, 505 U.S. at 846 (reaffirming and redefining the right to have an abortion established in *Roe v. Wade*); *Roe v. Wade*, 410 U.S. 113, 154 (1973) (establishing the right to privacy in selecting to have an abortion); *Eisenstadt*, 405 U.S. at 453 (extending the right to use contraception to all individuals); *Griswold v. Connecticut*, 381 U.S. 479, 485–86 (1965) (establishing the right of married couples to use contraception). See generally Cohen, *supra* note 173 (discussing whether the federal Constitution protects a right not to procreate).

316. See, e.g., *Lawrence v. Texas*, 539 U.S. 558 (2003); *Casey*, 505 U.S. at 857; *Cruzan v. Dir., Mo. Dep't of Health*, 497 U.S. 261, 278 (1990); *Jacobson v. Massachusetts*, 197 U.S. 11, 38 (1905).

317. 497 U.S. 261.

318. *Id.* at 342 (citing *Washington v. Harper*, 494 U.S. 210, 237 (1990) (Stevens, J., concurring in part and dissenting in part)).

actions taken with their own body. In *Lawrence v. Texas*,<sup>319</sup> the Court expanded substantive due process protections to include an individual's decision to engage in consensual sex without fear of criminal sanction.<sup>320</sup> In the context of NIPD, a woman's personal liberty interests would depend on the relevance of the NIPD test results to her decisions about what activities to engage in for the remainder of the pregnancy. NIPD could inform decisions to engage in further invasive genetic testing, abortion procedures, prenatal therapies, or other activities including exercise, acupuncture, massage, and sex.

Finally, parental liberty includes the ability to make decisions about how to raise and educate children.<sup>321</sup> In *Troxel v. Granville*,<sup>322</sup> the Supreme Court held that existing precedent supports the idea "that the Due Process Clause of the Fourteenth Amendment protects the fundamental right of parents to make decisions concerning the care, custody and control of their children."<sup>323</sup> In many instances, NIPD results could help inform prospective parents' decisionmaking regarding how best to care for their children both while they are in the womb and after they are born. Having advanced knowledge regarding a child's medical or behavioral conditions can enable a parent to prepare for a child's medical, nutritional, educational, and social needs as early as possible. For many conditions, like phenylketonuria, which requires a specific diet to avoid significant brain damage, early intervention is key to a positive outcome.<sup>324</sup>

For some genetic conditions, women will find NIPD information important for a range of intimate decisions. For instance, using NIPD to test for congenital adrenal hyperplasia (CAH) touches all three protected liberty interests. CAH, which causes genital ambiguity, would enable parents to decide between aborting the fetus, prenatal hormone therapy taken by the woman during pregnancy, or postnatal hormone therapy and corrective surgery.<sup>325</sup> Other parents may want to have the CAH diagnosis, even if they would never abort, to prepare themselves for the birth of a child with the genetic disorder and to have time to learn more about the condition and the available resources. NIPD for other conditions will reveal information relevant to personal preferences but that is not as germane to

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319. 539 U.S. 558.

320. *Id.* at 578.

321. *Pierce v. Soc'y of Sisters*, 268 U.S. 510, 534–35 (1925); *Meyer v. Nebraska*, 262 U.S. 390, 400 (1923).

322. 530 U.S. 57 (2000).

323. *Id.* at 66.

324. See generally *Phenylketonuria*, PUBMED HEALTH, <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002150> (last reviewed June 17, 2011).

325. See Robbert J.P. Rijnders et al., *Clinical Applications of Cell-Free Fetal DNA From Maternal Plasma*, 103 *OBSTETRICS & GYNECOLOGY* 157, 161–63 (2004).

fundamental decisions about how to treat, how to raise, and whether to have a child. Such conditions may include sex, physical characteristics such as hair, eye, and skin color, and predispositions to minor medical conditions such as eczema, acne, and ear infections. The value of a woman's interest in prenatal genetic information will span a wide spectrum from highly important to relatively unimportant with respect to her intimate personal, procreative, and parental decisionmaking.

Time and again, the Court has protected individuals' right to make decisions regarding their own person, procreation, and parenting with minimal government interference.<sup>326</sup> As a result, existing doctrine provides an excellent framework for determining the strength of a woman's interest in receiving prenatal information about a particular genetic characteristic. The importance of genetic information to a pregnant woman should be highest when it is directly relevant to multiple constitutionally protected decisions regarding reproduction and family. The more the information provided by a prenatal genetic test informs her constitutionally protected decisions, the more weight the woman's interests in being able to have the test ought to receive.

## 2. Balancing the Interests: Applications to Exemplar Genetic Conditions

Once a woman's interests in accessing a particular genetic test have been established, the court should weigh her interests against those of the state in prohibiting it. To demonstrate how the suggested framework might play out with respect to certain types of NIPD testing, this Subpart evaluates the relative state and individual interests in testing fetuses for three genetic conditions using the exceedingly persuasive justification test.

### a. Tay-Sachs Disease

Consider a woman who wants to use NIPD to test for Tay-Sachs disease, a very severe recessive disorder that generally results in death by the age of five.<sup>327</sup> If she lives in a state that has passed legislation banning all prenatal genetic tests prior to viability, how strong would her challenge to the law be under the exceed-

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326. See, e.g., *Lawrence*, 539 U.S. 558; *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833 (1992); *Santosky v. Kramer*, 455 U.S. 745 (1982); *Parham v. J.R.*, 442 U.S. 584 (1979); *Quilloin v. Walcott*, 434 U.S. 246 (1978); *Smith v. Org. of Foster Families for Equal. & Reform*, 431 U.S. 816 (1977); *Roe v. Wade*, 410 U.S. 113 (1973); *Wisconsin v. Yoder*, 406 U.S. 205 (1972); *Stanley v. Georgia*, 394 U.S. 557 (1969); *Griswold v. Connecticut*, 381 U.S. 479 (1965); *Prince v. Massachusetts*, 321 U.S. 158 (1944); *Skinner v. Oklahoma*, 316 U.S. 535 (1942); *Meyer*, 262 U.S. 390.

327. See *Tay Sachs Disease*, *supra* note 186.

ingly persuasive justification test? In many ways, this disease represents one of the most compelling reasons for permitting prenatal testing.<sup>328</sup> This woman's procreative liberty interest is very high in that the results of the test are likely to influence her decision to have an abortion. Likewise, having a child with such a disease is likely to place significant restrictions on her career as well as her social and political interests, making her sex equality interest also very high. While no prenatal therapies for Tay-Sachs exist, the woman's personal liberty interest also remains high because she may have a strong interest in avoiding the hardships of pregnancy and childbirth to have a child that will suffer significantly for its short life. Finally, she may have a more moderate parental liberty interest in being able to access NIPD for Tay-Sachs as there is currently no cure for Tay-Sachs, nor is there any means to slow its progression.<sup>329</sup> However, knowing the child is affected prior to its birth would grant the parents time to contact specialists and learn about ways to mitigate the disease's symptoms.

A state's interests in restricting access to NIPD for Tay-Sachs are comparatively quite low. As noted above, NIPD poses little to no risk to the pregnant woman or the morality of the clinician performing the test. As a single gene, Mendelian recessive disorder, Tay-Sachs is relatively simple to diagnose and lacks much of the testing-accuracy challenges associated with more complex genetic diseases. The state's interest in maintaining proper standards of medical care would entitle it to ensure the test was accurate and reliable, but otherwise this interest would not be sufficient to warrant restrictions on access. On the other hand, states will maintain a strong interest in protecting unborn fetal life, which, as I argue above, should be the same for all fetuses regardless of their genetic characteristics. Further, the state interest in preserving societal integrity will also be elevated in this instance, as many women will test for this condition and most that receive a positive result for Tay-Sachs will abort. Women could face strong pressures to use NIPD to test for Tay-Sachs and to abort if a positive result is found. Further, families that do not abort could be subjected to increased discrimination during their child's life. This discrimination could come from physicians, insurance companies who refuse to pay for treatments if the condition was discovered

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328. In fact, it is highly unlikely that any state would pass legislation banning access to genetic tests for severe diseases with a short life expectancy and no cure (like Tay-Sachs), although the Missouri legislature introduced the Abortion Ban for Sex Selection and Genetic Abnormalities Act of 2012 restricting abortion for any genetic abnormality. H.B. 1933, 96th Gen. Assemb., 2d Reg. Sess. (Mo. 2012).

329. See Arthur Schoenstadt, *Treatment for Tay-Sachs: An Overview*, EMEDTV, <http://nervous-system.emedtv.com/tay-sachs-disease/treatment-for-tay-sachs.html> (last updated Aug. 24, 2010).

during pregnancy,<sup>330</sup> and other parents. However, these interests pale in comparison to those of the woman.

Overall, the woman's procreative liberty and sex equality interests would be high enough in this case to outweigh the state interests in protecting the life of the unborn and societal integrity. In addition, a woman's interests in personal and parental liberty should serve to bolster her case for access to the test. The state interest in protecting societal integrity should not rise to the level of an exceedingly persuasive justification. In cases like *Tay-Sachs*, where women's liberty and equality interests are strong, their right to make decisions about their bodies, reproduction, and parenting should remain highly protected as a fundamental right. In instances where their interests are lower, the exceedingly persuasive justification test would permit a state regulation of access to NIPD to stand.

#### b. Bipolar Disorder

Bipolar Disorder (BPD) is associated with unusually intense emotional states that occur for distinct periods.<sup>331</sup> A person with BPD has both manic episodes in which she is overly joyful or excited and depressive episodes when she is extremely sad or hopeless.<sup>332</sup> BPD is especially dangerous as patients may be at risk for suicide during depressive episodes and for high-risk behaviors during manic ones.<sup>333</sup> BPD cannot be cured, but it can be effectively managed via continuous long-term treatment.<sup>334</sup> Families affected by BPD have long had an interest in knowing whether they are likely to pass the disease on to their children. Family and twin studies have consistently found that BPD is familial and heritable, but determining the exact method of inheritance has proved elusive because of its complex gene-environment interaction and varied phenotype.<sup>335</sup>

Pregnant women with a family history of BPD are likely to have more varied levels of interest in using NIPD to test for the disease than women with a

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330. The Affordable Care Act would prohibit this form of discrimination, but if the act is repealed, no such protection will exist. Patient Protection and Affordable Care Act, Pub. L. No. 111-148, § 1201, 124 Stat. 119, 154-55 (2010) (codified at 42 U.S.C. § 300gg (Supp. V 2011)) ("Prohibition of Preexisting Condition Exclusions or Other Discrimination Based on Health Status"); 26 C.F.R. § 54.9815-2704T (2012); 29 C.F.R. § 2590.715-2704 (2012); 45 C.F.R. § 147.108 (2012).

331. See NAT'L INST. OF MENTAL HEALTH, BIPOLAR DISORDER 1-4 (2009), available at <http://www.nimh.nih.gov/health/publications/bipolar-disorder/nimh-bipolar-adults.pdf>.

332. See *id.*

333. See *id.* at 2.

334. See *id.* at 19.

335. Jordan W. Smoller & Erica Gardner-Schuster, *Genetics of Bipolar Disorder*, 9 CURRENT PSYCHIATRY REP. 504, 504 (2007).

family history of Tay-Sachs. The complex etiology of BPD makes it more difficult to know which genetic and environmental factors will lead to an individual developing the disease, making reproductive decisionmaking significantly more challenging. A woman's procreative liberty interest in having NIPD to test for BPD will depend on the clinical validity of the test. Given the potentially devastating nature of the disease and the fact that some women with BPD elect not to reproduce to avoid passing it on to their children,<sup>336</sup> women would have a strong procreative liberty interest in a highly accurate test. But as the clinical validity of the test decreased, so would their procreative liberty interests. As with Tay-Sachs, a woman's personal liberty interest can be equated with the likelihood that if the test came back at elevated risk, she would decide to abort.

The strength of a woman's parental liberty interest and her sex equality interest will depend in part on the age of onset of the particular subgroup of BPD that her fetus carries. Epidemiological data suggest that there are four subgroups of BPD that can be differentiated by age of onset: childhood BPD, which presents between the ages of six and thirteen; early BPD, which presents at age seventeen or eighteen; intermediate onset, which presents in the mid-twenties or early thirties; and late onset, which presents in the mid-forties.<sup>337</sup> Of these, childhood BPD has historically been considered quite rare, but the diagnosis is becoming more common.<sup>338</sup> A woman's parental liberty and sex equality interests will be the highest with a diagnosis of childhood BPD and lowest for late-onset BPD because the burdens and decisionmaking responsibility will fall more directly on her as a parent if symptoms present while the child is a minor. As more information is discovered about the environmental factors that contribute to the development of BPD, the woman's interest in having an NIPD test for late-onset BPD is likely to rise, as she might make significant decisions about how to raise her child based

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336. For an illuminating example of this inclination, see, for example, Natasha Tracy, *Would You Have a Child if You Knew They Would Have Bipolar?*, BREAKING BIPOLAR BLOG (Aug. 24, 2012), <http://www.healthypace.com/blogs/breakingbipolar/2012/08/would-you-have-child-if-knew-they-would-bipolar>, and the accompanying reader comments.

337. Frank Bellivier et al., *Age at Onset in Bipolar I Affective Disorder: Further Evidence for Three Subgroups*, 160 AM. J. PSYCHIATRY 999, 1000 (2003) (finding that the age at onset of bipolar affective disorder in siblings was likely to be the same, suggesting a familial and potentially genetic relationship driving the subgroups); Janet Wozniak et al., *Mania-Like Symptoms Suggestive of Childhood-Onset Bipolar Disorder in Clinically Referred Children*, 34 J. AM. ACAD. CHILD. ADOLESCENT PSYCHIATRY 867, 867-68 (1995) (arguing that the incidence of childhood bipolar disorder is not as rare as originally thought).

338. *Child and Adolescent Bipolar Disorder*, NAT'L ALLIANCE ON MENTAL ILLNESS, [http://www.nami.org/Template.cfm?Section=By\\_Illness&template=/ContentManagement/ContentDisplay.cfm&ContentID=13107](http://www.nami.org/Template.cfm?Section=By_Illness&template=/ContentManagement/ContentDisplay.cfm&ContentID=13107) (last reviewed July 2010).

on the information provided in the test. Overall, a woman's interest in NIPD to test for BPD is relatively high, but it will depend on the clinical validity of the test, the specific subgroup of BPD that runs in the family, and the ability to reduce the onset of disease through controlling environmental stimuli.

The state interests will also vary more with BPD than with Tay-Sachs. For all genetic conditions, the state's interest in protecting the mother's health, unborn human life, and the medical profession's ethics should all remain relatively constant. However, the state interest in maintaining medical standards will vary significantly with the clinical validity of the NIPD test for BPD. A test with low clinical validity might cause a pregnant woman to undergo significant stress in making a termination decision, give birth to an affected child that she would have aborted, or abort a healthy fetus. This interest should carry significant weight sufficient to prevent a test that did not meet minimum standards for analytical and clinical validity from entering the prenatal commercial market.

The state interest in societal integrity should also play a significant role in determining whether a state can regulate access to NIPD for BPD. The availability of NIPD for BPD is likely to increase significantly the stigma facing individuals and families affected by BPD. The idea that mental illnesses, like BPD, have genetic causes and occur across all races, genders, and socioeconomic groups has served to reduce the overall stigma of mental illness, which historically has been extremely high.<sup>339</sup> The existence of a noninvasive prenatal test has the potential to create a sense of control, and therefore permitting blame, over whether one has a child with the disease. Further, such social stigma and judgment have the capacity to place coercive pressure on women who receive a positive diagnosis to abort the fetus. To the extent that the individuals with a personal or family history of BPD that use NIPD and selective abortion tend to be wealthier or better educated, BPD could also become more heavily associated with individuals with lower incomes and less education, which could further increase the stigma associated with the disorder. This trend could create a downward spiral of discrimination against both the mentally ill and the lower class, which could further encourage

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339. For review of some of the history of mental illness stigma, see *ON THE STIGMA OF MENTAL ILLNESS: PRACTICAL STRATEGIES FOR RESEARCH AND SOCIAL CHANGE* (Patrick W. Corrigan ed., 2005); see also U.S. DEPT OF HEALTH & HUMAN SERVS., *MENTAL HEALTH: A REPORT OF THE SURGEON GENERAL 9* (1999), available at <http://profiles.nlm.nih.gov/ps/access/NNBBHS.pdf> (“[I]ncreasingly effective treatments for mental disorders promises to be an effective antidote [to stigma]. When people understand that mental disorders are not the result of moral failings or limited will power, but are legitimate illnesses that are responsive to specific treatments, much of the negative stereotyping may dissipate.”).



individuals to test and selectively abort.<sup>340</sup> A government seeking to regulate access to NIPD for BPD based on its interest in societal integrity would have to closely monitor newborn blood tests, public sentiment toward those with mental illness, and the trajectory of future resources available to care for such individuals.

Overall, the ability of the state to regulate access to NIPD for BPD will depend entirely on the circumstances. The state should be able to prevent a test with low clinical validity from entering the market. If a test with high clinical validity entered the market for all subgroups of BPD, the pregnant woman's interests should outweigh those of the state, unless stigma against the disease had become so rampant that a drastic imposition on a woman's Fourteenth Amendment rights proved exceedingly justifiable, which seems unlikely given the strength of her interests. In the case of a test with moderate clinical validity, the challenge should turn on the strength of the state's evidence of harm to society and the subgroup of BPD tested for.

### c. Predisposition to Homosexuality

The final genetic test is the most challenging but probably the most important to consider. For decades, scientists have been searching for a biological basis of homosexuality.<sup>341</sup> In fact, 23andMe began the first genome-wide association study in April 2012 to study the biology of sexual orientation.<sup>342</sup> Recent studies suggest that while a single genetic mutation does not determine an individual's sexuality, sexual preference does have both genetic and environmental components.<sup>343</sup> Given the potential for a genetic predisposition to homosexuality, a number of prospective parents may wish to screen their fetuses for any alleles known to be associated with sexual preference.

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340. A similar argument could apply to the stigma associated with a number of genetic diseases and disorders, not only those related to mental illness.

341. See *US Researchers Find Evidence That Homosexuality Linked to Genetics*, GUARDIAN, Dec. 1, 2008, <http://www.guardian.co.uk/world/2008/dec/01/homosexuality-genetics-usa>; see also Ryan D. Johnson, *Homosexuality: Nature or Nurture*, ALLPSYCH J. (Apr. 30, 2003), <http://allpsych.com/journal/homosexuality.html>.

342. See Scott H., *Do Ask, Do Tell*, SPITTOON (Mar. 30, 2012, 7:00 AM), <http://spittoon.23andme.com/23andme-and-you/do-ask-do-tell>.

343. See *Homosexual Behavior Due to Genetic and Environmental Factors*, E! SCI. NEWS (June 28, 2008, 5:21 PM), <http://esciencenews.com/articles/2008/06/28/homosexual.behavior.due.genetics.and.environmental.factors> (citing a study from Sweden published in the Archives of Sexual Behavior); Johnson, *supra* note 341; see also J. Michael Bailey et al., *Genetic and Environmental Influences on Sexual Orientation and Its Correlates in an Austrian Twin Sample*, 78 J. PERSONALITY & SOC. PSYCHOL. 524 (2000).

A woman's procreative liberty interest in obtaining a test for genes associated with homosexuality will vary significantly depending on social attitudes regarding homosexuality and the clinical validity of the test. Given the widely varied opinions regarding homosexuality in the United States,<sup>344</sup> I am willing to venture that for some percentage of the population, a predisposition toward homosexuality would be determinative of a termination decision. However, because those who believe that homosexuality is a sin are also likely to believe that abortion is wrong for any reason, the group willing to abort for a predisposition to homosexuality may be quite small. Enlarging this group, at least minimally, may be women, who are not homophobic, but are concerned about the ability of a homosexual child to thrive in areas where homosexuality is not well tolerated and want to abort on that basis.<sup>345</sup> As with the above examples, the strength of a woman's personal liberty interest depends entirely on whether the information from NIPD would influence her abortion decision.<sup>346</sup>

As with nonmedical sex selection, access to NIPD to test for a predisposition to homosexuality disentangles procreative liberty arguments from sex equality arguments. While women who oppose homosexuality may have a strong claim that denying them access to NIPD to test for a predisposition infringes upon their procreative liberty, they cannot make a similar claim that denying access to information about whether their fetus has a predisposition to homosexuality reduces their ability to stand as equal citizens with men. As a result, their sex equality interest in accessing NIPD to detect a predisposition to homosexuality is nonexistent.

Women do, however, have a somewhat stronger parental liberty interest. For the many parents that would welcome a child with a predisposition to homosexuality, knowledge in advance of a child's birth may assist them with understanding their child better and tailoring their parenting decisions accordingly. Since sexuality does not fully develop until a child is older, however, a parent's interest in this information prior to birth should not be weighted too heavily.

States may have strong interests in maintaining medical standards and protecting societal integrity in regulating NIPD for a predisposition to homosexu-

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344. Frank Newport, *For First Time, Majority of Americans Favor Legal Gay Marriage: Republicans and Older Americans Remain Opposed*, GALLUP POL. (May 20, 2011), <http://www.gallup.com/poll/147662/First-Time-Majority-Americans-Favor-Legal-Gay-Marriage.aspx> (illustrating the divide between those in support of and those opposed to gay marriage).

345. I am indebted to Madeline Morrison of the *UCLA Law Review* for this point.

346. See John A. Robertson, *Reproductive Rights and Reproductive Technology in 2030*, in CONSTITUTION 3.0: FREEDOM & TECHNOLOGICAL CHANGE 155 (Jeffrey Rosen & Benjamin Wittes eds., 2011), available at [http://www.brookings.edu/~media/research/files/papers/2011/1/21%20reproductive%20technology%20robertson/0121\\_reproductive\\_technology\\_robertson.pdf](http://www.brookings.edu/~media/research/files/papers/2011/1/21%20reproductive%20technology%20robertson/0121_reproductive_technology_robertson.pdf).

ality. Once again, states have a strong interest in restricting the availability of commercial NIPD for a predisposition to homosexuality until the test has established a minimum threshold level of clinical validity. Because of the complex etiology of sexual preference, genetic tests may never reach this minimum threshold. One additional problem is that homosexuality is not considered a medical or psychiatric condition and therefore may be considered outside the authority of the FDA and other regulatory bodies.<sup>347</sup> Regulations governing genetic tests should be drafted to ensure that genetic tests for all characteristics are required to meet the same standards of quality and validity.

Finally, the state interest in protecting societal integrity may prove especially relevant when considering NIPD for a predisposition to homosexuality because of the testing's potential to lead to increased discrimination. Currently, America is extremely divided on the fundamental rights of homosexual individuals.<sup>348</sup> Debates have raged around the country regarding whether homosexuals can serve openly in the military and whether they have the right to marry, engage in assisted reproduction, and adopt children. The existence of genetic testing for a predisposition to homosexuality could cut both ways in this debate. In order to have a genetic test, scientists must understand the biological etiology of homosexuality. The more evidence there is that homosexuality is biological, the more likely it is to receive Fourteenth Amendment protections. However, the existence of a prenatal genetic test could also simultaneously increase discrimination, prejudice, and selective abortion of fetuses that screen positive. If such a test is ever created and offered commercially, states should monitor public sentiment and newborn genetic tests carefully to determine whether the test is increasing or decreasing discriminatory sentiment and eugenic practices. Given the limited interests of women in testing for a predisposition to homosexuality, if trends of increased discrimination arise, the state may very well be able to demonstrate an exceedingly persuasive justification to restrict access to NIPD for this purpose.

## CONCLUSION

The technological advances of NIPD and whole genome sequencing have the potential to offer pregnant women enormous amounts of genetic information

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347. The FDA regulates genetic tests as medical devices. *Is the Product a Medical Device?*, U.S. FOOD & DRUG ADMIN., <http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/Overview/ClassifyYourDevice/ucm051512.htm> (last updated Mar. 1, 2010).

348. See David Lauter, *Poll: Support for Gay Marriage Continues to Rise*, L.A. TIMES, Nov. 3, 2011, <http://articles.latimes.com/2011/nov/03/news/la-pn-pew-same-sex-marriage-20111103>.

about their fetuses early in the first trimester without a risk of miscarriage. These developments could dramatically change reproductive practice and consequently our reproductive rights. As states that oppose abortion become savvier about ways to restrict access, their legislative attentions have turned to restricting access to abortion based on the reason the procedure was sought. As NIPD expands the information offered to pregnant women, it also expands the potential reasons a woman could choose to have an abortion, as well as the number of potential regulations states could enact. Because reasons-based abortion prohibitions suffer from significant constitutional and practical challenges, states will most likely try to restrict access to NIPD for certain conditions to prevent abortions for certain characteristics. Because of the potential for a strong connection between prenatal genetic information and a woman's decision to terminate her pregnancy, constitutional challenges to these reasons-based testing prohibitions are likely to result. Evaluating such a challenge under the undue burden standard set out in *Casey*, however, does not permit adequate weighing of the full range of state and individual interests. As a result, I have proposed the use of intermediate scrutiny review, which requires a state to have an exceedingly persuasive justification for restricting access to NIPD. Such a review would weigh the state's interests against those of the woman in accessing the test for a specific genetic condition and determine if, under the circumstances, the state justification was exceedingly persuasive. The relevant state's interests include protecting and maintaining medical standards, protecting potential human life, protecting the health of the pregnant woman, preserving the ethical and moral integrity of the medical profession, and a proposed new interest: protecting societal integrity. The state interest in protecting societal integrity is intended to permit the state to regulate access to genetic tests in cases where the collective result of individual reproductive decisions has the potential to create significant discrimination and societal harm. The woman's interests include not just her interest in procreative liberty but also her interests in personal liberty, parental liberty, and equality with men. Overall, the exceedingly persuasive justification test favors the ability of pregnant women to access NIPD for all conditions unless the state can demonstrate through empirical data the test's lack of clinical validity or developing trends with the potential for societal harm. As I have shown throughout the Article, the strength of each of the interests balanced by the exceedingly persuasive justification test will vary significantly depending on the genetic condition in question. With NIPD currently available for Down syndrome, sex determination, and RhD status, and many biotechnology companies making significant investments into the development of new tests, now is the time to consider how this information will change our thoughts on reproductive autonomy.

To understand better the impact NIPD will have on reproductive medicine and reproductive rights, further research and analysis is needed in a wide variety of areas. First, studies should examine pregnant women's opinions of NIPD and the value of NIPD testing results for various conditions to pregnant women in their procreative, personal, and parental decisionmaking. Second, better demographic information is needed to understand the impact of NIPD on birthrates of children with genetic conditions tested for by NIPD. Third, sociologists and anthropologists should explore the integration of NIPD into prenatal care and examine its influence on social stigma associated with certain diseases and conditions. Finally, as genetic testing technology moves away from specific genetic tests to whole genome sequencing, the question of whether a woman has a right to access the prenatal genetic information of her fetus becomes more than just a Fourteenth Amendment question. The First Amendment may protect a woman's right to have any portion of her fetus's genome revealed to her because any restriction on a whole genome sequence would necessarily have to restrict the communication of the results, rather than the provision of the test. Additional exploration of the First Amendment right to access genetic information in the context of whole genome sequencing is necessary to define further the ever-evolving scope of reproductive rights, as well as the future of genetic testing.