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"THE PURSUIT OF PERFECTION:

A DEBATE ON THE ETHICS OF GENETIC ENGINEERING"

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Opening Remarks
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Moderator:
E.J. Dionne, Jr.
Co-chair, Pew Forum on Religion and Public Life; Senior Fellow, Governance Studies Brookings; Syndicated Columnist, Washington Post Writers Group

Presentation:
Michael J. Sandel
Anne T. and Robert M. Bass Professor of Government, Harvard University, Member, President's Council on Bioethics

Discussant:
Lee M. Silver
Professor of Molecular Biology and Public Affairs, Princeton University; Author, "Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family"

THIS IS AN UNCORRECTED TRANSCRIPT.

P R O C E E D I N G S

MR. LUGO: Good afternoon, and thank you all for coming. You are braver than those who were deterred by just a little bit of sprinkling out there. We were hoping that the wine at the end would embolden people to come out, despite the inclement weather, but evidently, that was not the case. We are delighted, though, that you are here.

My name is Luis Lugo, and I am the director of the Pew Forum on Religion and Public Life. The forum is a nonpartisan organization, and we do not take positions on policy debates, including the one you are about to hear today.

It is my pleasure to welcome you this afternoon to "The Pursuit of Perfection: A Conversation on the Ethics of Genetic Engineering." We are very leased to be co-sponsoring this event with our friends here at the Brookings Institution, and I want to, in particular, thank the communications staff here who has been so helpful in working with us in putting this event together and bringing it to you.

We are here today to talk about, dare I say it, a brave new world. As a growing number of performance-enhancing technologies become a practical reality, we confront a new world in which human beings wield increasing power over their own destinies, but to what end? What are the assumptions that guide this quest for perfection, and at the end of the day, will the benefits outweigh the cause?

We are very fortunate to have with us today two of the leading experts in this field to offer us a window into the possible futures, futures which may be scary, may be hopeful, but which are, in any case, much nearer than most of us realize.

Before I turn things over to the moderator, I do want to acknowledge another Pew-funded project which is very much involved in this area of work, the Genetics and Public Policy Center, which is taking the lead in understanding the technologies involved in genetic engineering, assessing public and stakeholder sentiment towards them, and evaluating the current legal and political landscape in order to craft policy options that will help guide the development and use of genetic technologies.

We are pleased that Joan Scott, the deputy director of the Center, could join us today. Joan, if you could please stand, so everyone takes a look at you.

Thank you so much. It is a pleasure to have you.

I will now hand things over to my good colleague, E.J. Dionne, who is a Senior Fellow here at the Brookings Institution, a columnist for The Washington Post, professor at Georgetown, and co-chair of the Pew Forum on Religion and Public Life. He will be introducing our speakers and moderating the discussion today.

E.J.

MR. DIONNE: Thank you very much, Luis.

"When science moves faster than moral understanding as it does today, men and women struggle to articulate their unease." That is what Mike Sandel writes in the first paragraph of this excellent piece in the Atlantic, "The Case Against Perfection," and I want to thank the Atlantic for publishing Mike and helping make this event possible and also all their help with it.

I must say for me, this is a particularly exciting moment. I have been a Mike Sandel fan for a very long time, and it is like a Red Sox fan getting to introduce

Nomar Garciaparra. So I am just really glad, and if there are any Yankees' fans in the audience, I don't apologize for that.

[Laughter.]

MR. DIONNE: These are purely my own views and do not represent the views of the Pew Forum, which probably does not want to connect itself in any way to my baseball team.

[Laughter.]

MR. DIONNE: Many of you in this room have worked with Mike and know his work. I was just looking the other day or actually this morning at some of the reviews of "Democracy's Discontent," and every adjective you would want has been applied to that book. "A profound contribution to our understanding of the present discontent," said The Wall Street Journal. "One of the most powerful works of political philosophy in recent years," said Fuad Ajami [ph] in U.S. News & World Report. Moving from right to left, George Will called the book "wonderful." John Judist [ph] called it "an important book that inspires," and that is what Mike Sandel does.

And he does this without pandering or trimming. Indeed, there was a politician who once ran under the slogan, "He never sucks the tough ones," and the politicians used that slogan because our notion somehow is politicians like to duck the tough ones. As you will hear today, Mike Sandel seeks out the tough ones and tries to help us understand.

We are also so grateful that Lee Silver, a professor or Molecular Biology and Public Affairs at The Woodrow Wilson School at Princeton, has joined us today. I couldn't imagine a better combination to discuss this subject today.

We also have, incidentally, many distinguished bioethicists in the audience. I would like to welcome Janet Rowley [ph] who is a member of the President's Council on Bioethics who is with us today and also Clancy Dean and Levin Uvall [ph], executive director and deputy chief of staff of the Council.

Let me introduce Mike. He is the Anne T. and Robert M. Bass Professor of Government at Harvard University where he teaches both graduate and undergraduate courses in contemporary philosophy, including Ethics and Biotechnology, Markets, Morals and Law, and Globalization and Its Discontent. His courses are so popular that Harvard actually thought of moving them to Fenway Park.

He also serves on the President's Council on Bioethics. He has received fellowships from the Carnegie Corporation, the Ford Foundation, the American Council of Learned Societies, and the National Endowment for the Humanities.

His publications include: "Liberalism and the Limits of Justice," "Democracy's Discontent," "American in Search of a Public Philosophy," and "Liberalism and His Critics."

Lee Silver is a professor of Molecular Biology and Public Affairs at the Woodrow Wilson School of Public and International Affairs at Princeton University. He has been elected to the governing boards of the Genetic Society of America and--help me pronounce this word. Is it the International Mammalian Genome Society?

He is a Fellow of the American Association for the Advancement of Science, was a member of the New Jersey Bioethics Commission Task Force formed to recommend reproductive policy positions for the State legislature in New Jersey. He

has testified frequently before Congress, before State legislatures. He is the recipient of National Institutes of Health grants on evolution and genetics.

He is the author of--this is a wonderful title as well--"Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family," and "Mouse Genetics, Concepts, and Practice," which was not published by the Disney Corporation.

[Laughter.]

MR. DIONNE: It is so great to have you both here. Michael, welcome to Brookings.

[Applause.]

DR. SANDEL: Well, thank you, E.J., very much. I want to begin by thanking E.J. who is a friend of longstanding and someone whose work in journalism and academia and public life, shaping our public arguments, I very much admire, and he is a good friend.

I also want to thank Luis Lugo very much for the role of the Pew Forum in convening us here, and Professor Silver for being willing to come and join in this discussion.

E.J. mentioned that I am a member of the President's Council on Bioethics. So I want to hasten to add that I am speaking here only for myself and not on behalf of the President's Council.

I suppose following his introduction, I should say, too, I am a Red Sox fan, and I don't speak for the Red Sox, for that matter.

[Laughter.]

DR. SANDEL: The topic of genetic engineering and enhancement as public policy forums go is admittedly an arcane, even rarified, subject.

It is interesting. I have only just begun to learn about genetic engineering, partly--largely, really, through my being confronted with some of these questions, as we all have been on the President's Council, but what drew me to the subject beyond the intrinsic interest of the question of remaking, reengineering ourselves and our nature is that it forces us to think about some big questions, questions even bigger than genetics and genetic enhancement, questions that really go to the terms of political discourse, questions that go to the way we conceive our public philosophy or our public ethic.

While I will try to lay out an argument here about genetic engineering, I want to do it in a way that at least invites us to have a discussion about those bigger questions of our reigning public ethic.

Just to start from people's gut-level reactions to news of genetic enhancement, most people find at least some forms of genetic engineering disquieting, but it is not easy to articulate the source of our unease. It is not easy to explain exactly what it is that we find troubling about it, and that fact has something to do, it seems to me, with the terms in which we think about morality, ethics, and politics.

In order to grapple with the ethics of enhancement, we have to confront big questions, but old questions, questions largely lost from view these days, questions about the moral status of nature, and about the proper stance of human beings toward the given world.

So this is the way in which trying to figure out what it is that troubles us about this or that instance of genetic enhancement makes us confront these bigger, older questions.

Ultimately, it leads us to challenge, or at least this is what I am going to try to propose, to see what people think. It challenges us to reexamine a dominant impulse of our public philosophy, which has very much to do across the political spectrum with a vision of freedom bound up with mastery, dominion, and control. That is an abstract idea. So I would like to work up to it gradually, first, by considering four very concrete examples of enhancement that are either available now and practices or on the horizon.

First, muscles. Researchers have developed a synthetic gene that when injected into the muscle cells of mice makes muscles grow and prevents them from deteriorating with age. So the question arises should this become possible in human beings. What are the proper uses of genetic alteration of muscles? Should it just be to cure muscular dystrophy and the atrophy of muscles that comes with age, or should athletes be able to use it, to bulk up without steroids?

Now, usually when we think about steroids in sports or other forms of enhancement, the first objections that spring to mind have to do with two things, really. One is safety--steroids are unsafe; they carry long-term health risk--and also fairness, is it a kind of cheating.

But suppose for the sake of argument that muscle enhancement was safe. What about the fairness argument?

Well, come people might say a genetically altered athlete would have an unfair competitive advantage, but the fairness argument isn't decisive. It is not decisive because, it has always been the case that some athletes are better endowed genetically than others. We don't consider the natural inequality of genetic endowments to undermine the fairness of sports. So what would be the difference if genetically altered athletes were to compete?

If genetic enhancement in sports is morally objectionable, in other words, it must be for some reason other than safety and other than fairness because, if it were safe, in principle, it could be made available to anyone who wanted to use it and the fairness objection would fall away.

Second example, memory. Researchers are now able to produce smart mice by inserting extra copies of a memory-related gene into mouse embryos. Now, human memory is much more complex, but there are biotech companies now in hot pursuit of memory-enhancing drugs or cognition enhancers. What they are aiming at is not only the market of those who lose memory due to Alzheimer's, say, but also the many millions of baby-boomers who are beginning to experience age-related memory loss. If they could come up with a cognition enhancer of the kind they are seeking, it would be a bonanza for the pharmaceutical industry, a Viagra for the brain.

What about that? Would that be objectionable? Let's assume for the sake of argument, it could be done safely.

What about fairness? Some might worry, "Well, this will be expensive. Won't it? And won't that mean that it will exacerbate the gap between rich and poor?"

If you are wealthy, you will be able to afford cognition enhancement, and if you are not, you won't.

There is a point to that worry, but it is not the fundamental worry. Think about it. Why would that scenario be objectionable? Would it be objectionable because the unenhanced poor would be denied the benefits of bioengineering their memories or because the enhanced affluent are somehow dehumanized by going in for this?

So the first question, the fairness objection is a real objection, but it is not the most fundamental question about these technologies. The fundamental question is not how to assure equal access to the thing, but whether we should aspire to it in the first place.

We can see this by considering a third example that is already available, height enhancement through the use of human growth hormone. Since the '80s, this hormone has been approved by the FDA for abnormally short children who suffer from hormone deficiencies or other illnesses, but parents of short, but otherwise healthy, kids come along and say, "Why not for our kids, too? They suffer taunting on the playground. Why can't they be taller?" It is true, they are not ill. They just have short parents.

The FDA wrestled with this, and this summer, the Eli Lily pharmaceutical company persuaded the FDA to approve its human growth hormone for healthy children whose projected adult height would be in the bottom 1 percentile.

That immediately raises the broader ethical question. Why not other short children? Why only very, very short ones? And for that matter, why shouldn't it

be available to all children? There might be those who are average or above average in height who want to be even taller. Maybe they want to make the basketball team.

Is there anything wrong in principle with height enhancement through the use of growth hormone, cosmetic height enhancement, that is to say, not connected with any underlying medical illness or ailment?

Some might say there is something we are not quite comfortable with about that prospect, but what is it? Maybe it is fairness, some would say, fairness or a related thing.

Height enhancement, if you imagine this going on, motoring along on large scale, would ultimately be collectively self-defeating. As some people become taller, other people become shorter, relative to the norm. So, as the unenhanced begin to feel shorter, what would they do? Well, if they care about it, they might begin to seek treatment, and then there would be a kind of hormonal arms race. That would leave everyone worse off, especially those--this is the fairness worry--who can't afford to buy their way up from shortness.

Here, too, the fairness objection doesn't really get at what is worrying about this. If we were bothered only by the injustice of adding shortness to the problems of the poor, we could remedy that unfairness by providing publicly subsidized height enhancements.

So the real question is not fairness, it is not access. Those are serious questions. The prior question is whether we want to live in a society where parents feel compelled to spend a fortune--and this is not cheap, this height enhancement--to make perfectly healthy kids a few inches taller.

One last example before delving into an objection that lies and projects us beyond safety and beyond fairness, sex selection. It is now possible to go to a clinic in Fairfax, Virginia, and select in advance the sex of your child. There are ways of doing it through embryo screening and preimplantation genetic diagnosis, but this company in Fairfax, Virginia, can do it by sperm sorting.

They have a machine that sorts sperm and separates male X-bearing from Y-bearing, the X-bearing sperm that would produce girls from the Y-bearing sperm that would produce boys. It is a flocytometer, this machine, and it is pretty successful, 81-percent success rate for girls, 76 for boys.

The technology is called, quaintly, Microsort. They licensed it from the U.S. Department of Agriculture which developed it for breeding cattle, and now you can use it to select the sex of your child.

Well, what about this? Is that fine? You like that idea. Maybe everybody does, but insofar as people are uneasy about this, what would be the objection?

One obvious objection is people might worry about sex discrimination, and if you look at some societies around the world, India and China, for example, there has been in the last 15 years a huge skewing of sex ratios where the ratio of boys to girls is 120; in northern India, 140 to 100.

For the sake of this exploration, put aside the issue of sex discrimination as this Microsort company does. They have a rule to fend off that objection. You can only go there and use that sperm-sorting technique if you already have kids and you

want to use it for family balancing. They won't let you use it to stock up on boys or on girls, and you can't even use it for your first child.

They found a very clever way to put the sex discrimination argument, the sex skewing argument to rest. So that, in a way, poses the question very clearly. Insofar as there is something troubling about this, beyond safety, beyond fairness, what is it?

Well, it seems to me something morally troubling does persist in each of these cases, and what is it? Think back to the case of genetically enhanced athletes. Some people say what is wrong there, it is a moral wrong beyond fairness. It is the genetically enhanced athletes running 3-minute miles or hitting 700-foot home runs routinely.

There is something about enhancement that undermines effort, the nobility of effort, the sober hard-forged virtues that attend really working and striving and training, so that your accomplishments, be they athletic or otherwise, are really your doing.

It is one thing to hit 70 home runs as the result of discipline, training, and effort, this argument goes, and something else, something less to hit them with the help of steroids or genetically enhanced muscles.

There is something in this idea, but I would argue the problem with enhancement is not that it erodes effort and undermines human agency. In fact, it is something closer to the opposite. The deeper danger is that genetic enhancement and bioengineering represent a kind of hyperagency, a kind of promethean aspiration to remake nature, including human nature, to serve our purposes and to satisfy our desires.

The problem is not the drift to mechanism where we imagine even robotic athletes. The problem is the drive to mastery, and what the drive to mastery misses and may even destroy is an appreciation of the gifted character of human powers and achievements.

To acknowledge the giftedness of life is to recognize that our talents and powers are not wholly our own doing, despite the efforts we expend to develop and to exercise. An appreciation of the giftedness of life constrains the promethean project ascribed to mastery. It conduces to a certain humility.

It is, in part, the sense of giftedness, a religious sensibility, but its resonance reaches beyond religion, and there are ways of understanding this idea, this ethic, that don't depend on religious notions.

To go back to the athletic example, consider two types of athletic achievement. There are players like Pete Rose who aren't blessed with great natural gifts, but who manage somehow through effort and grit and determination and striving to excel in their sport, but we also admire players like Joe Dimaggio whose excellence consists in the grace and effortlessness with which they display their natural gifts.

Do a thought experience. Suppose we learned that both players took performance-enhancing drugs. Whose turn to drugs would we find more deeply disillusioning? Which aspect of the athletic ideal, effort or gift, would be more deeply offended?

Some might say effort. The problem with the drug is that it is a shortcut. It is a way to win without the effort and without the striving, but effort and striving are

not the point of sports. Excellence is, and excellence consists at least partly in the display of natural talents and gifts, there are no doing of the athlete who possesses them.

This is an uncomfortable fact for democratic societies because we want to believe that in life and in sports, success is something we earned, not something we inherit. So natural gifts and the admiration they inspire embarrass the meritacratic [ph] faith. They cast doubt on the conviction that praise and rewards flow from effort alone.

So, in the face of this embarrassment, we inflate the moral significance of effort and striving, and we depreciate giftedness.

We can see this, for example, in the television coverage of the Olympics where they focus less on the feats the athletes perform than on those heart-rendering stories of the hardships they have overcome, the obstacles they have surmounted, the struggles they have waged to triumph over an injury or political turmoil in their native land. That is all about the valorization of effort over giftedness, and it reflects our uneasiness in a democratic society with that ethic.

But effort isn't everything. No one believes that a mediocre basketball player who works very hard, even harder than Michael Jordan, deserves greater acclaim or a bigger contract. So the real problem with genetically altered athletes is that they corrupt athletic competition as a human activity that honors the cultivation and display of natural talents. From this standpoint, enhancement can be seen as the ultimate expression of the ethic of effort and wilfulness, a kind of high-tech striving.

If this is what is at stake, crowding out the ethic of giftedness in favor of a kind of overbearing strenuous striving, it isn't only genetic enhancement that raises these objections.

In the National Football League over the past 30 years, there has been a dramatic increase in the average size of players, especially linebackers. In 1972 in the Super Bowl, the average weight of an offensive lineman was--does anyone care to hazard a guess? 248 pounds, already pretty big. That was in 1972. Today, the average Super Bowl lineman weighs 304 pounds, and a year ago, the Dallas Cowboys boasted the NFL's first 400-pound player.

This isn't all accounted for by steroid use because the NFL banned steroids in the 1990's. What produced these gargantuan athletes was a very low-tech thing: huge amounts of food.

A reporter from the New York Times looked into this and said as the pressure increases to add pounds, the science of size comes down to a cocktail of unregulated supplements and a bag of cheeseburgers.

So the phenomenon I am describing is not solely a question of high tech. There is nothing high tech about a mountain of Big Macs, and yet, encouraging athletes to use mega-calorie diets to turn themselves into 400-pound human shields and battering rams is as ethically questionable, is questionable in the same way as encouraging them to bulk up through the use of steroids or human growth hormone or genetic alterations. Whatever the means to push for super-sized players is degrading to the game and to the dignity of those who transform their bodies to meet its demands.

We have the ethic of giftedness which is under siege in sports. It persists, though it is also under siege, in the practice of parenting. To appreciate children as gifts is to accept them as they come, not as objects of design or products of our will or instruments of our ambition, and this goes to the issue of sex selection, but

not only sex selection, also in principle, down the road, the use of genetic technologies to select other traits of children, whether height, eye color, hair color, or ultimately, though not any time soon, intelligence, athletic prowess, musical ability, and the like. So here, too, is a pressure on the ethic of giftedness.

We choose our friends and spouses at least partly on the basis of qualities that we find attractive, but we do not choose our children. Their qualities are unpredictable, and even the most conscientious parents can't be held wholly responsible for the kind of child they have. That is why parenthood, more than other human relationships, teaches what my friend, the theologian and bioethicist, William May calls "an openness to the unbidden."

This helps us see that the deepest moral objection to enhancement or to the pursuit of designer children, the deepest objection lies not in the perfection that it seeks, but in the human disposition it expresses and promotes.

The problem is not that parents usurp the autonomy of the child whose sex they choose or whose traits they design because the child wouldn't otherwise choose her genetic traits for herself. Autonomy is not what is at issue.

The problem lies in the design, in the hubris of the designing parents, in their drive to master the mystery of birth. Even if this disposition doesn't make parents tyrants to their children, still it disfigures the relation of parent and child and deprives the parent of the humility and of the enlarged human sympathies that an openness to the unbidden can cultivate.

It is tricky, this ethic of giftedness, because it doesn't mean that it is not our place to try to mold or cultivate or to improve our children. We admire parents who

seek the best for their children, who spare no effort to help them achieve happiness and success.

Some parents do this by sending their kids to expensive schools, hiring private tutors, packing them off to tennis camp, giving them piano lessons, ballet lessons, swimming lessons, SAT prep courses and so on. We all know about that, don't we?

So here is the question. If it is permissible for parents to help their children in these ways, why isn't it equally permissible and admirable to use whatever genetic technologies are around, provided they are safe, to enhance their child's intelligence or musical ability insofar as that became possible?

The defenders of enhancement point out that analogy, and they are right to this extent. Improving children through genetic engineering is similar in spirit to the heavily managed, high-pressured child-rearing practices that have become common these days, but this similarity doesn't vindicated genetic enhancement. To the contrary, it highlights a problem with the trend toward hyper-parenting, and we are familiar with this trend, even apart from the high-tech expressions of it.

Consider sports-crazed parents bent on making champions of their children. Never mind the sidelines of the weekend soccer games that so many of us populate and the crazed parents alongside us. Not us, but they are the crazed ones.

[Laughter.]

DR. SANDEL: Richard Williams, the father of Venus and Serina Williams, the great tennis champions, he reportedly planned the tennis careers of his daughters before they were born. Earl Woods, the father of Tiger Woods, handed a golf

club to a young Tiger while he was still in the playpen. But it is not only parents bent on making champions of their children in sports. More pervasive still, it is the frenzied drive-by parents to mold and manage their children's academic careers.

When I was in high school, I didn't know anyone who went and took a SAT prep course. Now just about everybody seems to do that. It is a $2.5-billion industry now. SAT prep courses aren't the only way the anxious affluent polish and package their collage-bound progeny. After all, hyper-parenting is strenuous and time-consuming. So some parents subcontract the job to private counselors and consultants.

There is a firm in Manhattan--it would have to be in Manhattan--called Ivywise. They offer a 2-year platinum package of college admissions help for--how much do you suppose? $32,995.

Over 10 percent of today's college freshmen have used paid counselors of one kind or an other, up from 1 percent in 1990, and it is not only to get kids into college. Ivywise has a service for kids that caters to parents eager to win spots for their children in the coveted private elementary schools in New York.

We heard a year or two ago about this guy, Jack Grubbman, the Wall Street stock analyst, who upgraded his rating, allegedly, of AT&T stock to curry favor of his boss who was helping get his twin 2-year-olds admitted to a prestigious nursery school.

Well, we have strayed from the issue of high tech and even genetic enhancement, but the ethic at stake, the drive for designer children to mold and manage is the same, and it is objectionable. It is animated by the same kind of ethic and impulse of mastery and control, and it is objectionable, it seems to me, on the same grounds.

Mr. Grubbman's willingness to move heaven and earth and even the market to get his 2-year-olds into a fancy nursery school is a sign of the times. It tells of mounting pressures in American life that are changing the expectations parents have for their children and increasing the demands placed on children to perform.

So it is no wonder that as the pressure for performance increases, so does the need to help destractable children concentrate on the task at hand. Enter Ritalin. Ritalin prescriptions for children and adolescents have tripled over the past decade, but not all users suffer from ADHD. It is also possible to use Ritalin to enhance one's performance on the SAT or on college exams.

So those who argue that bioengineering is similar in spirit to other ways that ambitious parents shape and mold their children have a point, but this doesn't give us a reason to embrace the genetic manipulation of children. Instead, it gives us reason to question the low-tech, high-pressured child-rearing practices that we increasingly accept.

The hyper-parenting, familiar in our time, represents an anxious excess of mastery and dominion that misses the sense of life as gift, and this draws it disturbingly close to eugenics, which is what gets at the fundamental moral stakes.

The shadow of eugenics hangs over today's debates about genetic engineering and enhancement. Critics say what we are witnessing with enhancement is nothing more than privatized or free-market eugenics. Defenders of enhancement say, "No, no, it is not eugenic, providing there is no state imposition, provided there is no coercion."

Historic eugenics involved for sterilization coerced by the state, and ultimately with the Nazis genocide. The Nazis gave eugenics a bad name, but the question remains now, what was wrong with eugenics. Was it just the coercion and the state imposition, or is something wrong with eugenics even if there is no state imposition, even if there is no coercion? That is another way of framing the question about genetic enhancement.

James Watson who with Francis Crick [ph] discovered the structure of DNA has argued that there is nothing wrong with genetic engineering and enhancement provided they are freely chosen, not state imposed. He told a couple of years ago an interview--he stirred up a controversy by saying that if a gene for homosexuality were discovered, a pregnant woman who didn't want a homosexual child should be free to abort a fetus that carried it.

When his remark provoked an uproar, Watson replied he wasn't singling out gays, but asserting a principle, namely that women should be free to abort fetuses for any reasons of genetic preference, whether the child would be born dyslexic or lacking musical talent or too short to play basketball.

The furor over Watson's remark poses starkly this question about free-market eugenics. Even for those who don't subscribe to the pro-life position, Watson's scenario raises a hard question. If it is morally troubling to contemplate abortion to avoid a gay child or a dyslexic one, doesn't this suggest that there is something wrong with acting on eugenic preferences even where no state imposed coercion is involved?

To take a tamer example, there are ads that run in campus newspapers, including those on my campus, looking for donors for eggs, for egg donors.

A few years ago, a fertility clinic ran an ad in some Ivy League college newspaper seeking an egg from a woman who met certain qualifications, at least 5-foot-10-inches tall, athletic, without major medical problems, and with a combined SAT of 1400 or above, and in exchange for an egg from this donor, they were willing to pay, the ad offered--do you remember how much?--$50,000 for that designer egg.

Well, what about that? How does that strike you? If it bothers you somehow, doesn't it suggest, as with Watson's scenario, here there is on coercion, there is no state imposition, but isn't it the eugenic character of the ad, of the practice that is troubling?

The problem, then, with eugenics and eugenic engineering, this is what I would suggest, is that both represent a one-sided triumph of wilfulness over giftedness, of dominion and mastery over reverence and restraint.

Why should we worry if the ethic of mastery and dominion and control crowds out the ethic of giftedness? We should worry because if the genetic revolution erodes our appreciation for the gifted character of human powers and achievements, it would transform at least two key features of our moral landscape. And they are connected. One is humility, and one is solidarity.

In a social world that prizes mastery and control like ours, parenthood is a school for humility. That we care deeply about our children and yet can't choose the kind we want teaches parents to be open to the unbidden. Such openness is a disposition worth affirming not only within families, but in the wider world as well because it invites us to abide the unexpected, to live with dissonance, to reign in the impulse to control.

A world in which parents became accustomed to selecting the genetic traits of their children would be a world inhospitable to the unbidden. It would be a gated community at large, but this is connected. This aspect of humility is connected to the moral basis of social solidarity.

Why, after all, do the successful owe anything to the least-advantaged members of society? The best answer to that question leans heavily on the notion of giftedness. It goes like this. The natural talents that enable some of us to flourish and get ahead, make a lot of money, those talents aren't wholly our undoing but rather, in large part, our good fortune.

If our genetic endowments are gifts rather than achievements for which we can claim credit, then it is a mistake and a conceit to assume that we are entitled to the full measure of the bounty our talents reap in a market society. Therefore, we have an obligation to share our bounty with those who, through no fault of their own, lack comparable gifts. So here is the connection between solidarity and giftedness.

Those who retain a lively sense of the contingency of their gifts, those who realize that we aren't wholly responsible for our success are more likely to take a more generous stance toward those who lack the talents the market happens to prize. Giftedness, in other words, saves a meridacratic [ph] society from sliding into the smug assumption that the rich are rich because they are more deserving than the poor.

But what happens when genetic engineering enables us to override the results of the natural lottery, to replace chance with choice? The gifted character of human power and achievements would recede and with it perhaps our capacity to see ourselves as sharing a common fate. The successful thinking themselves wholly self-

made men and women would become even more likely than now to view themselves as self-sufficient and, hence, wholly responsible for their success. Those at the bottom of society would no longer be viewed as disadvantaged and so worthy of a measure of compensation, but simply as unfit and so worthy of eugenic repair. The meritrocy [ph] less chastened by chance would become harder, less forgiving.

So here is how solidarity is connected to, draws upon, requires a certain ethic of giftedness and a certain sense of the chance and appreciation of the chanced nature of our lot, but against it is a raid of powerful project of mastery, control, and self-making.

There is something appealing, even intoxicating, about a vision of human freedom unfettered by the given. It may even be the case that the allure of that vision played a part in summoning the genomic age into being.

It is often assumed that the powers of enhancement that we now possess arose an inadvertent byproduct of biomedical progress. The genetic revolution came, so to speak, to cure disease and then stayed to tempt us with the prospect of enhancing our performance, designing our children, and perfecting our nature.

But that may have the story backwards. It is more plausible to view genetic engineering as the ultimate expression of the ethic I have been describing, of the resolve to see ourselves stride the world, the masters of our nature.

What I have tried to suggest is that that promise of mastery is flawed. It threatens to banish our appreciation of life as a gift and to leave us with nothing outside our own will, our own resources, our own effort to affirm or behold.

Thanks very much.

[Applause.]

MR. DIONNE: Thank you very much.

While Dr. Silver sets up, when you talked about the search for that egg base, the SAT scores, I thought you had stumbled across a joint venture between Ivywise and Microsort.

[Laughter.]

MR. DIONNE: Sir, welcome. Thank you so much for being with us.

DR. SILVER: I want to thank the organizers of this conference for giving me the opportunity to respond to Professor Sandel's analysis of the rights and wrongs of parents choosing which genes their children receive and the modification of nature in general.

I have to confess, I have no background in bioethics. I was trained as a physicist, and I did molecular biology most of my life, and I don't pretend to have any answers to the hard questions. I see my role as a provocateur, to raise the questions, even though I can't answer them. I do this because I enjoy it, but also because most scientists try their hardest not to provoke.

Jim Watson and Francis Crick are notable exceptions because they became historical figures in their own time, and they didn't have to worry about anything. Jim Watson discovered the double helix at the age of 25.

I don't like where all of this competition leads. I have a daughter in eleventh grade, and I was forced to put her into a $1,000 SAT prep course because most other parents were advantaging their children in the same way.

I don't like the fact that 50 percent of Princeton University undergraduates seek psychological counseling at some point during their 4 years on campus, but I don't think it is just the parents who are to blame.

It is also our modern American society where success is based ever more on achievement and even less on who your father is, although our President is just a glaring exception to that rule. So we end up with what biologists call the Red Queen Effect, which biologists have known about for a long time. It is based on the Louis Carroll character who has to keep running to stay in place.

In evolutionary biology, it is impossible to escape the Red Queen. Darwin was the one who said that every species is going to go extinct because some individuals within that species would out-compete other individuals in that species with new genes, and so, if we look just back in our recent evolutionary past, homo-rectus [ph] went extinct. Homo-neanderthal went extinct. Homo-[inaudible] went extinct. All those species were in our past. They didn't survive. They all went extinct. I think human homosapiens is different, but we will get to that later on.

So I agree with Professor Sandel that this is a very worrisome trend. I don't like it, but it is not clear to me how we can stop it in a democratic society.

I also agree with him that to understand the ethics of enhancements of any kind, we must ask questions about the moral status of nature and about the proper stance of human beings toward the given world.

I think that secular academics often engage this debate with one hand tied behind their back because they ignore an area which is very important to most people, which Professor Sandel has not ignored actually. As he explains, the political

leanings of a person do not necessarily provide insight into that person's answers to moral questions about the modification of nature.

Some, both the right and the left of the political spectrum, are opposed to human tampering with genes, and Professor Sandel presents some carefully reasoned and sincere liberal argument against gene control, but even further to the left are people who are more vociferous in their opposition to all forms of plan, animal, and human biotechnology.

In contrast, some thoughtful people, both conservatives and liberals, fail to see a problem with genetic enhancement as long as it doesn't restrict a child's autonomy. Indeed, the well-known left-wing Harvard scientist authors, Richard Lawant [ph] and Steve J. Gould couldn't even figure out why there was such a big fuss about reproductive cloning. They didn't see it raising any new ethical issues, and that is contrary to what almost everybody else in the country believes.

I am not going to talk about cloning, but I think it shows that there is a fundamental distinction between the way that people view life. It is not politics. In my opinion, the answer is based fundamentally on different conceptualizations of spirituality.

I had a religious upbringing, and I didn't question it when I was being brought up. Then I became an adult and a molecular biologist, and people didn't talk about religion anymore in molecular biology or actually anywhere else I talked to secular academics.

I remember bringing this up in discussion with my molecular biology colleagues at Princeton, talking about spiritual beliefs at a faculty lunch. Leon

Rosenberg who is an esteemed colleague of mine said, "No educated person believes in souls."

I went that evening home. I remember having dinner. My father-in-law, who is a very educated person, said, "No educated person denies the existence of souls."

So here was clearly a contradiction what was the truth. Well, spiritual beliefs, whether admitted or not, are nearly universal, but the details of such beliefs can vary tremendously from culture to culture, from person to person, even within the same religious tradition.

I traveled across Asia and North Africa and Europe, and I asked people what they thought about the soul. Especially western people don't like to use that word, and so they use euphemism for "soul."

Most non-westerners think the soul is a wispy, spatially, localized material substance that leaves the body and goes somewhere else after death. It is not just non-westerners. In 1907, the New York Times headlined an article, "Soul Has Weight, Physician Thinks." Forget about the use of the English language there. It was based on an experiment published in a journal called American Medicine, which doesn't exist anymore today. He weighed people. He put people on a giant balance while they were dying of tuberculosis and weighed them and claimed in his results that they lost 21 grams at the moment of death. That is not an urban legend. That is a real experiment that was published in a medical journal.

Now, De Carte [ph], who lived before then, understood the scientific implausibility of a material substance that had a mind of its own that could leave the body. So De Carte said the soul is not a material substance. It is a different kind of a

substance, a spiritual substance without location or mass. But the material soul and cartesian souls were both immortal. They survived the death of the body.

The third category of soul, which originated with Aristotle, is not immortal. In modern language, this type of soul is an emergent property of the human body or just the human mind. It can't possibly exist in isolation from the body. So, when the body dies, it does.

The fourth category of soul is what Francis Crick made famous when he said you are nothing but a pack of morons"in his book as soul as--[audio break].

[Side B of Tape No. 1 of 2 begins.]

DR. SILVER: [In progress]--metaphor for whatever you want it to be. So these are very, very different views of the soul.

At the invitation of the Council of Catholic Bishops Committee on Science and Human Values last fall, I had the opportunity to speak with a group of American bishops at an informal lunch, and I asked them to explain the Catholic notion of soul to me. I was surprised when they disagreed with each other.

Some thought the human soul survived as a material spirit, and some thought it didn't, that it would only come back when the body was resurrected. This is the leaders of a religious culture who disagreed on this fundamental issue, suggesting to me they didn't talk about it with each other very much.

In a poll I conducted at Princeton University, 66 percent of Princeton University students said they believed in a human soul of some kind. Fifty-three percent believe specifically in immaterial soul. Twenty-seven percent had no idea what

they thought, and many of the students were very disturbed that I actually forced them to consider the answer to this question.

I think this is a product of our scientific culture. Scientific people are not confused. When I was in Bali watching a cremation ceremony where the soul is supposed to go up in the smoke to heaven, people were happy. They didn't fear death. They weren't upset. They were all very happy that this woman's soul was going up to heaven.

In the Mayan culture in Central America that I visited, the people bury the dead, and the soul seeps out into the ground. It has to fight off the underworld before it gets into heaven.

Science causes anxiety and confusion in moral beliefs. Science starting from the enlightenment period, that suggested that God is not needed to explain the revolution of planets around the sun, and in the 20th century, biochemists have not needed God to explain the workings of living cells.

Professor Sandel worries about what he calls the "deeper danger of promethean aspiration to remake nature, including human nature, and satisfy our desires," but every human civilization came into existence only when people acquired a primitive understanding of heredity which allowed them to remake nature.

The Myans in Central America took a weed and turned it into corn. The Asians took wild oxen and turned them into docile milk factories we call cows. Most people think that cows and corn were here at the origin as a gift, but, in fact, they are human inventions.

Today, 36 percent of the land mass of the earth is dedicated to agricultural, and the UN thinks it will be 50 percent by the year 2050. In most populated areas of the world, there is nothing left of the nature that existed before humankinds invaded. So I am not happy about that either, but the alternative, again, if you look at the alternative, we have 6 billion people on earth. If we didn't use a significant amount of land mass, there would be massive starvation. So that is the alternative.

It is fascinating to me that in America, if you look at American spiritual beliefs, European spiritual beliefs, they give you some insight into what kinds of biotechnology are disliked. In America, there is a very strong traditional Judeo-Christian ethic: Only human beings get souls, not animals and plants. That has a very strong impact on our political system, I believe. So we don't worry too much about genetically modified crops because crops were given to us to benefit human kind.

In Europe, many left-leaning European intellectuals have a different version of spirituality which encompasses all of mother nature. So, in that sense, in that kind of spirituality, they categorically reject genetically modified foods.

Liberal society has functioned and tired very, very hard to make the claim that genes really don't matter, and my children were taught in public schools, they could accomplish anything in their heart's desire. Brilliant leaders of The Human Genome Project like Eric Lander and Craig Venter [ph] argue that genetic analysis shows that we are all 99.9-percent identical to each other, which is true, which means there are 3 million genetic differences between individuals. So it is a question of how you look at that.

As Professor Sandel knows and we all know today, we can't hide the fact that there are differences in genetic distribution. The human species is not monolithic. Each child is born with different degrees of genetic advantage and disadvantage at starting points along thousands and thousands of curves. As the child grows up, they can push up and down from the starting points, I believe, but the genetic mythology has always been in a liberal society anybody can do anything they want. That is simply not true.

In fact, most people, especially today, have no chance of being a professional athlete or an Olympic contender or a violinist in the Boston Symphony Orchestra. You have to be born. Today, you can't compensate with just strong work. You have to be born way, way, way out along the curve on your profession.

I suspect even Pete Rose was not average. I would say he was probably in the 95th percentile, perhaps, and then his effort allowed him--he probably wouldn't be able to succeed today because you probably have to be in the 99.9 percentile.

I just want to show you a picture in the middle of Professor Sandel's article. It is very ironic. This is a picture. It is an advertisement using Lance Armstrong who, as you all know, is the winner of the Tour de France four times in a row.

Lance Armstrong is not a normal human being. When I looked up on the web "super human" next to Lance Armstrong, I got 570 hits. Everybody thinks he is super human. Clearly, he has massive lungs, and his heart is 30-percent larger than average. He is in the 99.9 percentile. That is one of the reasons he has always tested

clean on drug tests. So the reason that he is winning these races, besides the fact that he has a lot of hard effort, is the fact that he is genetically gifted.

Most people in western societies like people like Lance Armstrong, but they are troubled when you talk about parents being able to give their children exactly the same kind of gene that some other children get naturally. So I am not talking about running the mile in 2 minutes. I am talking about parents who are saying to themselves, "Well, my neighbors' kids have genes which allow their children to compete athletically or in some other way. Why can't I just give my children the same genes? What is wrong with that?" If they are given naturally to him, why can't I give them to myself?

Well, in the United States, we have this notion, which was demonstrated in Harper's magazine index. There was a question people were asked: Who should decide what genes a child gets? The four possible answers were: the parents, doctor, no one, or God. "God" came in first place with 70 percent. "No one" came in second place with 16 percent, and the "parents" came in third place with 11 percent.

Then, in the very same survey, same poll, same population, they asked people. They said, "If you could give your child enhanced genes that would increase his resistance to disease, would you do it?," and then 75 percent said yes. So, in the abstract, they don't want to think about playing with genes, but then you give them a specific example of how they can advantage their own child and they hadn't thought about that, and they would like to be able to take advantage of that.

The problem is the vision if nature, and the notion that nature is spiritual I think underlies the feeling that we shouldn't tamper with it; that nature gives us "gifts" is the word Professor Sandel uses.

Molecular biologists and other biologists in related fields don't see nature in the same way, and I think that is the division between the way people think categorically about what the opponents call genetic tampering.

Anybody who has ever had an evolutionary biology course knows that nature, if yo want to be metaphorical, is mean and nasty, that everything is trying to kill everything else, that a turtle lays a thousand eggs, a thousand little turtles hatch, 999 of them are going to die before they make it back into the water.

In the book he wrote just before he died, Steven J. Gould said--and he was no friends of the right wing--he wrote, "I would advance the strong claim that Darwin's theory of natural selection is, in essence, Adam Smith's economics transferred to nature." He only was able to write this right before he died because it went against his political beliefs.

So the point I think I would like to make is that we ignore something that is an inherent part of most people's personalities, which is some kind of spiritual belief, and spiritual beliefs are not monolithic. They can be all over the place, but scientists especially--scientists are the least spiritual. Molecular biologists are the least spiritual of all groups of people I have ever encountered. They want to ignore the spirituality. They want to not provoke people. They want to try to explain in secular terms.

The problem--and this is my last sentence--the problem I have is that I don't see a secular reason for why genetic enhancement, when a parent is giving a child a gene that other parents give their children naturally--I don't see the secular reason to stop that in a society where we know that the playing field is not fair to begin with. If a playing field was fair, I think it would be different, and I think that is why the

mythology of everybody starts at the same place, the playing field is level, that liberal mythology is put upon us to try to convince people that anybody can get anywhere they want. It is not true, we now know, and that causes a severe problem for which I have no answer.

Thank you very much.

[Applause.]

MR. DIONNE: Mike wants to reply later in the course of answering questions.

I want to ask one myself, but I would like to invite William [inaudible] to be thinking, if you would like to join in at some point in this discussion. If you wouldn't mind leading off after I ask a question.

By the way, there is an explanation for that poll finding, which is 90 percent of the parents thought they were God, which is perfectly logical with the data.

Which actually gets to the point. I find myself very sympathetic, as you know, Michael, with your argument. "I mean there, but for the grace of God, go I" is to me one of the most politically and socially constructed moral sentiments there is. So I am sympathetic when you say "and what the drive to mastery misses and may even destroy is an appreciation of the gifted character of human power and achievements," and you go on, "Appreciating the gifted character of life constrains the promethean project and conduces a certain humility."

Here is the problem or the question I have, which is how does this objection to this particular technology--why is it any different than objections to earlier forms of technology? Did not the fact that some of us live longer than others also

produce a sense of a gifted character of life? Would that not be used at any point against interventions by medical science? Christian scientists, for example, believe profoundly in the very sense of humility, which you extol and which I also admire. They would carry it farther down the line to saying that many of the heroic interventions that we engage in are promethean and arrogant.

How do you draw that line? Where does a hard line need to be drawn?

DR. SANDEL: A good and difficult question, and it enables me to say that what I don't want to do is enshrine as a general principle that human beings must not tamper with nation. I think that would be folly, and it would be at odds with a great many wondrous and beneficial interventions in nature and informations of nature that human beings have undertaken throughout human history. It would give rise to the very question you put.

Well, what about surgery? Does that mean we can't have surgery or anesthesia or any of the obvious cases, to say nothing of domestic cattle or hybrid corn and so on?

So my brief is not for [inaudible] nature as inviolable and not open to human intervention or manipulation. So that, in a way, makes my task more difficult.

Then, how is it possible to work out an ethic of giftedness that carries with it certain restraints, but that doesn't just say whatever is given by nature is to be inviolable. The kind of first step I would tyr to offer to answer that question is in addition to the idea of nature as a given, we have to add in any of these cases that we are deliberating or wrestling with some account, a persuasive account of the human goods that are at stake in this or that practice.

So there isn't account of the human good that I think has to govern any ethic of giftedness, mastery, restraint, intervention, not just the fact that something is given by nature.

So, to take the case of designer children, the argument would have to be not just that it is wrong to tamper with your kids, you should just let them come as they sprang from in nature. That, I wouldn't say, because, then, can you give your kid a vaccination? No, not on that account, or a surgery or any kind of medical intervention. No.

By arguing from a certain account of the human goods at stake, in the case of designer children, you would have to be able to show--I would have to be able to show that getting in the habit of specifying the genetic traits, let's say the hair color, eye color, as they did in that movie, "Gattica"--did you see "Gattica"? It is a great illustration of this. It is a science fiction movie where they get in the habit of specifying not just to prevent genetic diseases, but also to choose, as consumers would choose, height, hair color, and various physical talents and attributes.

My argument would have to be that a society like that, where that kind of designer child-rearing became routine, would transform the relation between parents and children in a way that would undermine important goods that attach to the future of child-rearing now that depends importantly on not commodifying or objectifying kids, not viewing them as instruments of our ambition, and when we run afoul of that even in low-tech ways, we feel guilty about it or can be recalled from it or are aware that we are going too far.

So you are absolutely right. It is not just the idea of nature or the given. This ethic of giftedness has to make its case, practice by practice, in relation to a certain account of the human goods that are present in a practice, that would be undermined by this kind of intervention.

MR. DIONNE: Let me just follow up, if I could. If I read you right, you would not be opposed to, as it were, fixing genes that might cause cancer.

DR. SANDEL: Right.

MR. DIONNE: Now, let's say that we know that obesity can cause premature death. So is there a problem with fixing genes for obesity?

Let us say that is significant scientific evidence that, in fact, shows we could go either way, but let's say tall people actually have significantly longer lives and are less given to disease than shorter people. I am trying to keep it to the issue of fixing for health.

DR. SANDEL: Right.

MR. DIONNE: As you go along that continuum, where do you stop? How do you know when to stop?

DR. SANDEL: Well, those are getting into some of the close cases, obesity and height, and there, it would depend on what the meaning of the practice were of enhancing the height, which was why we would need to know are parents really starting now to enhance height because there is this health reason. It is like obesity. If you are too short, it is as if you are at risk, which probably isn't true. I don't know.

So obesity, yes, then it is getting close, but if it really is for a genuine health reason, but height for just the reason that Professor Silver just--well, it is also to

be taller is more prestigious, carries certain social advantages, gives you a higher income. Then it is shading into non-medical reasons, and insofar as those reasons come to predominate the practice of height enhancement, to that extent I would say no.

MR. DIONNE: I just want to press you one last time on this.

DR. SANDEL: Yes.

MR. DIONNE: Let us say that the scientific data on the relationship between obesity and health problems is quite substantial. Let us say that there is not as overwhelming convincing evidence, but a rather substantial set of correlations between height and health. Let us say that my secret desire is to have my kid be a basketball player, but I would give the public reason based on some significant data that I would present you. You would be the judge and say, "Look, this is about health and not about playing basketball."

In other words, it strikes me that, even though I am very sympathetic to the distinction you want to make, I am wondering how we as a society could get to the point of successfully making that distinction.

DR. SANDEL: Well, there is on easy way of making that distinction, but I would just point out that that difficulty isn't distinctive to this issue of genetic enhancement. It is the same kind of difficulty we confront all the time when, for example, we are trying to decide whether a certain kind of proposed law or policy that might have some benefit for religious practice is motivated by the desire to strengthen some religious practices over others or whether it is really justified because there are correlations that show that when these various religious institutions are supported, there are other good effects on society.

All the time, we have to try to sort out the actual reasons that are given publicly from the real motivations that are operating socially and wrestle with that. So I agree that is a difficulty, but I don't think it is one that is distinctive to this case. I think it is familiar in all kinds of discriminations that we make where questions of moral judgment or ethical principles arising in politics.

Take tax cuts. Is someone really offering a tax cut just to cater to the very selfish preferences of the people to whom he is promising it, or does he really believe and is there evidence to support that it will increase economic growth? We have this debate all the time. How do we know the answer to that?

Well, it is difficult. We sort of know how to probe that kind of question. I would say the example you have given is a very good one, but not different fundamentally from what we do all the time.

MR. DIONNE: I will come back to that if I have a chance, but there are too many good people in the audience not to call upon.

MR. : I think Michael has offered an answer to this form of one-sided this where openness to the unbidden means open to the cancer, this and that, and do nothing about it. Obviously, he is not suggesting a quiet response to the human condition.

You raised the question whether there is a secular way of acknowledging what I would call the two sides to human existence, and I think E.B. White once put it in quoted line, "Every morning when I wake up, I am torn between the twin desire to reform the world and enjoy the world, and it makes it hard to plan the day." I mean, there are two sides to our life. There are two sides to science, beholding nature, the

inquiry for the truth, but also molding nature. There are two sides to parenting. Molding the child, that is surely our responsibility, surely to fight disease and so forth, but there is a tendency in our society not simply as a [inaudible] culture, but an immigrant culture, to overlook simply the savoring.

Auden [ph] once said, "There is a terrific pressure in American life because so many came over in order to justify a better future for their kids, to expect their kids to outstrip them and to resort to any and all means to ensure this outstripping of the parents' more constricted life in Europe." There are all sorts of pressures towards one of the two sides, and I think that is what Michael's paper is about.

It doesn't mean we can redo the American character, but one needs to learn how to lean against the weaknesses in our character, our drives and our dispositions. There is a powerful drive to control what one has to deal with.

I heard a psychiatrist once say the most difficult thing to expose for people who are very controlling is that, in their controlling, they are out of control, and one has to curb against that kind of one-sidedness. It seems to me the two sides to human existence is what Michael wanted to preserve, and admittedly, once you admit there are two sides to the life we live, it is always difficult to make that operational. That is why no matter how much elucidation to the complexity of being human there is, every new generation has to face afresh these difficulties of how you make operational a life that is admittedly, as E.B. White said, "very complex from the get-go when you wake up in the morning."

MR. DIONNE: Thank you.

Did you have a response?

MR. : Yes. I would like to respond to that.

I see nature through a biological lens, since that is what my training was in, and there are a lot of instincts, I believe, that we have, normal human beings have. We want to see connections to our children, which is actually what I think will avoid the radical abuses of the technology that you are talking about. I wouldn't feel connected to a basketball son, for example.

People generally want their children to be pretty much like them, just a little bit prettier and a little bit smarter. They don't want their children to look--I mean, I wouldn't want a child to look totally different from me. I treasure the fact that my children have something from me, and so I don't think that we are going to have this kind of thing where parents are going to run off and there is some ideal beauty, which of course is different all over the world, and we are going to latch onto that.

I think that is normal human nature. I think the word "control" may not be the right word because, again, there is an instinct among all mammals to provide for the survival and the success of their children, not just human beings, but other mammals as well. So I think parents can be overcontrolling, but I think the basic instinct is because they want their children to succeed because that is the way we are wired.

MR. DIONNE: Dr. Riley?

DR. RILEY: I am going to take the refuge of scientist which is to be more concrete, and I certainly appreciated the opening remarks of Dr. Silver because I feel also that bioethics, though I have been educated by my colleagues on the Council now for more than 2 years, I still feel quite uneasy in discussing many of those principles from the standpoint, say, of ethics or philosophy.

I am going to make two comments. One is that I think that if you look at the reality of the situation, we are a very, very long way from being able to put genes into embryos or into young children and actually be able to control how those genes function to change complex traits. Simple traits and single genetic diseases, that certainly may come, some sooner rather than later, but to really think about this as a prospect in that sense I think is not realistic.

Many of the cultural problems that we have been talking about are just that. They are, as you say, low tech, eating too much, ways of gaining something rather than from very sophisticated science.

The other remark I want to make--and I will preface this by saying I have the absolute utmost admiration for Michael Sandel, but I do want to take exception to the end of his talk, which is also similar to the end of the article in the Atlantic Monthly, which is that it is the unplanned vision of what we are doing with genomic, and he suggested, in fact, the story is backwards and we can view genetic engineering as the ultimate expression of our resolve to see ourselves astride the world.

Now, that assumes that science is monolithic. That assumes that there is really a plan that back in the '30s and '40s, somebody knew what understanding DNA and manipulating DNA--what it was going to lead to. Nothing, at least in my own view, could be further from the truth.

Science is chaotic. Science is haphazard, and discoveries are haphazard, and then people put them together. The discovery that DNA carried our genetic information was made in the '40s; that Watson and Quick and the double helix was in the middle '50s, that bacteria contain substances, enzymes that cut DNA, and that using

these enzymes from bacteria, you actually could take DNA and cut it into hundreds of millions of pieces and then identify the gene or the DNA that you want and select it out of these hundreds of millions of pieces, and then finally that you could move these little pieces of DNA, put them in carriers, put them in other cells and change those other cells.

This was strictly haphazard, and there was no sense that there was a resolve to see ourselves astride the world.

MR. DIONNE: Thank you.

Mike?

DR. SANDEL: Well, I wouldn't dispute for a moment Dr. Riley's account of the haphazard unfolding the genetic revolution.

I think it is a more difficult question about how to read the culture to know just how the newfound genetic knowledge fit with and reinforced currents in the public culture and in the moral culture that aspired to a certain kind of project of mastery.

So I would not suggest that there was some conspiracy on the part of scientists to come up with this thing for the sake of mastery. No. Scientists were haphazardly making discoveries that then had applications for medicine and cures. Yes, that I wouldn't question.

I am intrigued to notice and at least reflect on the strains in the culture that give a kind of momentum to this taken as a kind of cultural motif, and here is where I was struck. The linking of the two, I found in this Robert Sinshimer [ph] article, which was written in the late 1960's. He was a molecular biologist at CalTech, and this

was 35 years ago. He sort of glimpsed the way this might unfold, and he emphasized both the science and the human self-understandings that were at stake here.

That interested me a lot, and that is really what I was referring to by this suggestion that there might be an interplay here between the science and this kind of heady human self-image.

First, Sinshimer described the benefits to human kind, medical and otherwise, but then he talked very much in terms of the human self-image. He said, "As we enlarge man's freedom, we diminish his constraints and that which he must accept as given." So now he is talking in almost cosmological terms, and he talks about Copernicus and Darwin who demoted man from his right glory at the focal point of the universe, but the new biology would restore human beings to their place at the center. So he is going all the way back, looking at the history of science in relation to its impact on human self-understandings.

Then he concludes, "We can be the agent of transition to a whole new pitch of evolution. This is a cosmic effect." That is Sinshimer. So it was really reacting to that [inaudible], in a way, and also evocative account of the link between science and human meanings, and even for a certain picture of the cosmos that led me to offer that speculation.

DR. SILVER: One point I wanted to make is that all of medicine, in a sense, is enhancement. All of medicine is attacking the problems in nature. Medicine has been very good for people who live in wealthy countries like ours over the last 100 years. The life span has gone ahead.

We talked about this earlier. It is very difficult to draw the line between curing disease and enhancement. Would it be enhancement to have a better-than-average protection against disease? It depends on how you define "enhancement."

I wanted to respond also to what Dr. Riley said. Different scientists think in different ways. In 1970, Jacques Minot [ph] wrote a book called "Chance and Necessity." It is a brilliant little book. In the book, he predicted that genetic engineering would always be impossible because DNA was too small to manipulate.

Three years later, of course, genetic engineering was accomplished with bacteria, and in 1980, genetic engineering was accomplished with mice. Now the tools in the laboratory that we can use with mice, we can switch one base at a time in the mouse genome.

So, technically, I would disagree. I don't think that it is technically--if you put a huge amount of money into it, you could figure out how to do genetic engineering with human embryos. I don't think it is going to happen any time soon because I don't think there is enough there to engineer that we know about at this point in time.

I think you are right. We know some things about disease traits, but certainly nothing about the other kinds of things that people might be interested in, intelligence and things like that.

The last comment I just wanted to make is that it is useful to talk about these things because, just like with Jacques Minot being fooled into thinking something wasn't possible, scientists often overestimate what they can do in the short term and they underestimate what they can do in the long term, and I think that is true.

MR. DIONNE: That is very interesting.

I have the gift today of being in a room with not just one, but two of my favorite philosophers, and I would like to call on Bill Galston to join the discussion.

MR. GALSTON: In addition to reading Michael's recent article with great attention, I have also read the report of the President's Council of which Professor Sandel is a member. As I read that report, it articulates, without quite putting it this way, except once, three kinds of reservations against the thesis that you are advancing, and I would just like to put them on the table very quickly to give you an opportunity to respond.

The first reservation, which is really up front in the report, is--and this just piggybacks on what Dr. Silver said--that the distinction between therapy and enhancement on which a portion of your article conceptually pivots, I believe, is very hard to maintain once you look at it carefully.

The second objection is that many of our judgments about when certain sorts of enhancements are and are not acceptable are relative to the social context within which the proposed enhancement will or will not occur, and the President's Council gives the example of enhancing the ability of soldiers through the kinds of means we have been talking about this afternoon, so that they can fight more effectively and suggest that we think much better of that possibility than we do of enhancing the ability of athletes. So the social context matters.

The third objection, I think goes to the heart of the argument you are making. It is a critique of the notion of giftedness and an ethic of giftedness as an adequate guide to our conduct, and the President's Council points out that nature throws

up for our inspection all sorts of things, some of which appear quite desirable and some of which much less so. So, beyond the givenness of the natural is a set of judgments about whether what is put forward is good or not good, humanly speaking, and it is those judgments rather than an ethic of giftedness as such that ultimately determine what we should do.

I guess this brings me full circle to a question that Dr. Silver put on the table, which I will put this way. Can something be a gift if there is no giver?

DR. SILVER: That is exactly the question I was asking. In my mind, a gift is given by something or someone, and when we talk about gifts, it is usually in the language of God or some other kind of spiritual entity that is giving us the gifts.

I have never heard molecular biologists use that language. I am stereotyping molecular biologists, but they really have a different perspective of the world than people in the social sciences and humanities. So, to my mind, a gift has to have a giver.

Professor Sandel said we must feel indebted for this gift. Who are we feeling indebted towards? So I am not denying the importance of religious beliefs in the public arena. I am just suggesting that that is a kind of religious or spiritual belief; that you can't derive that from secular precepts.

MR. DIONNE: Michael?

DR. SANDEL: Well, a lot of interesting questions there. I want to come to this in a minute, but to take Bill's first three questions and then to the big question dropped upon us here like a bombshell, it is difficult to distinguish between therapy and enhancement, what is medical, what is non-medical. Creating a genetic predisposition

to be immune from certain diseases, is that medical or non-medical, therapy or enhancement? A generic form of a vaccination, would that be therapeutic, or would that be enhancement?

Well, I agree that it is borderline, but I would be inclined to say that it is for the sake of health. So I wouldn't find it subject to the same kinds of objections that worry me.

To say that it is for the sake of health is to say that we do need to investigate the purpose for the good to be advanced by the intervention, and the distinction standing by itself between therapy and enhancement can't give us that. So, yes, I agree entirely. We have to inquire to the purpose, the point, the end, the good. That is being advanced.

As between the soldiers and the athletes, I don't think it is obvious. The soldiers are performing a great good. The athletes are good, but arguably a lesser one. Still, if the--

MR. DIONNE: Say that to a Quaker baseball family.

[Laughter.]

DR. SANDEL: If the genetic alteration for the soldiers is not for the sake of health, their health, then I think it would be subject to the same kinds of worries that I would have even if my favorite Red Sox player were--I mean, the cause can be great there, too, if it were the last day of the playoff against the Yankees, and if only Pedro Martinez had a little more endurance, or if lacking the ability to increase his endurance genetically, there were a way of providing a cognition enhancer for Grady Little, I would have been tempted.

MR. DIONNE: Be honest. If you could have spliced a new gene into Bill Buckner, wouldn't you have?

[Laughter.]

DR. SANDEL: Right.

But I think the general point is that in all of these cases, what matters is not the distinction between therapy and enhancement itself, but an inquiry into the purposes to the goods, to the ends, for the sake of which the intervention is justified. The argument does have to hang on that.

Having said that, I don't see that as conceding that the ethic of giftedness is not doing moral work here because part of the account of the good that I would bring to bear, part of the account of the human good is one that sees as impoverished, a mode of life that is bent on a certain kind of freedom as mastery or dominion, which is why I try to show how that self-image was implicated in the project of enhancement. I see that as connected.

Giftedness is a way of beginning to work out at some general level an account of the human good, at least insofar as our stance toward nature and our own nature is concerned. I agree that general account by itself won't be enough to decide each of these cases.

Finally, doesn't a gift presuppose a giver? I am not sure. I think that is an open question, at least I wanted to pose that and to leave that as an open question.

It seems to me in trying to work out an ethic of giftedness as an ethic of restraint on the kinds of human hubris that lead us to hyper-parenting or genetic

engineering, I think it is possible to give multiple accounts of the source of that ethic and the source of those restraints.

The three leading sources are God, nature, and chance, and I agree that trying to pursue each of those three might lead us to different accounts of what it is to try to honor an ethic of giftedness and to generate some restraints on the project of mastery.

I wouldn't want too quickly to decide the question. I don't think it is an easily decidable question whether an ethic of giftedness that gives rise to a certain restraint on human dominion over nature and our own nature does or doesn't require religion.

I do take this project as a whole as a way of trying to bring back into public discourse as a live issue, that question. There is a resistance to bring that into public discourse because we get very uneasy when theological or metaphysical kinds of issues come into public discourse.

So I definitely want to lean against that resistance in our culture, but I don't want to do it in a way that just presupposes an answer to the question you pose, in part, because I am not sure of the answer.

I want to open that up at least for public argument and debate.

MR. : Doesn't Bill's question, does there have to be a giver, help explain why those who are religious, who do believe in God, in some way, are far more likely to resist mastery, to endorse humility, and that for people who do not believe in God, that is a much more difficult argument to make to them, the one you are making?

DR. SANDEL: Well, it is a good question, and I am not sure because there are some religious traditions. The Puritan tradition in the founding of American character could be an example. It laid a very great emphasis on human initiative and the human vocation to transform the world, and that is a powerful part of the American character in the American idea of freedom and mastery. Then, there are other very powerful religious sources that emphasize humility, restraint, not wanting to play God. So I think there are religious sources for both ethics.

I also think--maybe this is less clear--that there are ways of tapping into secular modes of reflection on both sides, or at least I am trying to invite even those who don't think of themselves as religious or coming to a notion of giftedness through a faith tradition trying to invite secular people who have certain intuitions, that a way of making sense of those intuitions is this idea of giftedness.

Put aside genetic engineering. Think of debates on environmental politics, about the status of nature and whether the reason for environmentalism is to keep the air clean for our children and to avoid suffocating and so on, greenhouse gasses, terrible welfare effects, or is there also something about a certain way of expressing our stance towards nature. That is important in its own right.

So I want to point to features of our moral intuitions and even public debate that already implicate even secular people in something like this idea. That is why I don't want to decide too quickly or in too hard-and-fast way, how much of this is religious and how much of this is secular. I want to open that question, not decide it.

MR. DIONNE: If I read the clock right, we have hit 5 o'clock. I think we started late. I would like to add 5 minutes to the program.

I just want a show of hands to see how many people would like to join the discussion. Could we just take the four people here? Could each of you make very quick comments? Then I will have--

DR. SILVER: Could I have just one little response? I think "religion" is too narrow a term because there are people who claim to be atheists, but have a belief in mother nature that is a spiritual belief, and that drives their attitudes towards things like genetically modified crops, for example. So religion is just one part of a larger sphere of spiritual beliefs.

MR. DIONNE: Indeed, a kind of mother nature view, if you will, a certain style of environmentalist as very much opposed to mastery on the grounds that it distorts nature in the same way.

Sir.

MR. : Hi. MY name is John Keck [ph]. I am actually a physicist, but I have studied a lot of philosophy on my own.

I just wanted to observe there is one thing you need to know that--I mean, without knowing it, it makes this whole debate just screaming into a hurricane, and it also makes the entire health care of the 20th century, its incredible loss of blood, completely incomprehensible.

That fact is that in the scientific evolution, one of the babies they threw out in the bath water is teleology, which is the basis of ethics. Of course, the whole scientific conception of nature is it is just matter in motion. It has no purpose, no meaning, no value beyond itself. So it doesn't matter if I put a bullet in your head. You are just a random conglomeration of molecules. This is why this discussion is so

important because science for the past 300 years, 200 years, 100 years, had been just completely unguided by any kind of ethical principles.

There is a story about an [inaudible] flight, and the pilot gets on the intercom and he says, "Comrades, I have good news and I have bad news. The good news, we made excellent time. The bad news, we don't know where we are going."

MR. DIONNE: Could I ask you to just get to your point? I am sorry to do that. I want to bring the other folks in.

MR. : I just want to say that Darwinism, in general, it is not something you want to argue for because it eliminates all ethical principles, period.

There is also a conception of evolution that doesn't take into account the more cooperative, like Fidel Copra [ph] as a concept of evolution.

Also, if you look at the giftedness not only of who we are, but of our political beliefs, a great man wrote a couple hundred years ago, "We hold the truth to be self-evident that all men are created equal, I would submit to you that you can't derive liberal democracy from secular premises.

MR. DIONNE: Thank you very much.

The lady right in front there, did you want to come in, ma'am? Please. If everybody could stay short because I just want them to respond.

MS. COHEN: I am Cynthia Cohen from the Kennedy Institute of Ethics at Georgetown.

I was just wondering how, Professor Sandel, you translated your ethic of giftedness into social regulations, laws, rules. Professor Silver was saying we live

basically in a society in which there is not a level playing field. So that to expect people to voluntarily forego enhancing their children may be asking a bit too much from them.

Would you regular a prenatal diagnosis, so that parents could not select the sex of their children?

Would you regulate the use of hormones, so parents could not make their kids taller if they were basically healthy, but only of average size?

What should we be doing in terms of social controls about this?

MR. DIONNE: Thank you for that excellent question. I really appreciate that.

Please.

MS. SCOTT: Joan Scott with the Genetics and Public Policy Center. This was an excellent, excellent discussion, and I thank you very much for it.

We just completed in this last year focus groups around the United States in six locations, 21 focus groups, having similar conversations with general Americans. You don't need to be ethicists or scientists to be able to hear these very nuanced kinds of conversations like we were hearing today being discussed by a lot of different people. There was this general feeling about overwhelming support for genetic technologies, but this unease that we have been hearing about today when it comes to using these for technologies for things that are considered more frivolous and you hear the word "vanity" being used a lot, "shadiness" even.

We asked the question, "If you think there should be limits set around, who do you trust to set those limits?," and people were very troubled about who they felt should have that kind of control around the use of these technologies.

So it was a very, very interesting discussing and occurring from a lot of different people at a lot of different levels.

MR. DIONNE: Thank you.

Lastly?

MR. MITCHELL: Gary Mitchell from the Mitchell Report.

There is one of these in every session, and I guess I am it, but let me do it quickly. It comes from a nonscientist.

I was thinking when I took a college biology course in which I was introduced to the notion of ontogeny recapitulates phylogeny, and it was the only thing I remembered. I tried forever to sort of turn everything into that as the metaphor.

So I am fascinated by metaphors and in particular the metaphor of the notion of promethean intervention, and I want to take it far afield and say as I think about that metaphor and the context in which you are discussing it here today, whether it has application in a far afield notion, I was thinking of Iraq as a promethean intervention and wondering whether it will lead to, if you will, the introduction of the gene for a sustainable democracy in that part of the world.

I don't really mean that in a partisan way, but I really wonder whether there isn't some learning we can do about promethean interventions in that sense from the level in which you are thinking about it here.

MR. DIONNE: While we are at it, can we have a gene to create new political parties? You could imagine the new line of work for political consultants, sort of fix the election way in advance.

Can you be real fast? We are going over. Thank you.

MR. : I wanted to bring in an aspect that hasn't really been discussed, the fact of competition between countries.

We have talked a lot about what the U.S. might try to do, the policy, the laws, American opinion. You said six places in America, but what about the fact that some scientists have left the United States to work on stemlines outside the U.S.? What about Johns Hopkins expanding their campus in Singapore tremendously, their medical campus? What about the fact that countries might attempt to use this as a competitive advantage for whatever the purpose is?

So that is something that needs to be included in the debate of how one should pursue this technology. The U.S. chose to open the nuclear Pandora's Box when faced with the danger of the Nazis. There is plenty. WE do have a future to contend with outside the United States. It is not just our decision.

MR. DIONNE: Thank you. For all of these very good and profound questions, you have a few minutes to reply.

DR. SANDEL: A lot of questions.

Overturning theology at the scientific revolution, that is true, but there may be a way to bring--theology is just a big name for purpose or end, and what I am suggesting here--and this goes back to my attempt to respond to Bill Galston's question--I am trying to suggest a mode of political discourse that not only makes room for spiritual and theologically latent questions, but also with that is a discussion of human purposes and ends. So that kind of discourse would also be hospitable for debate about and reflection on the proper purpose ends, proper [inaudible] of human beings and human flourishing.

In response to Professor Cohen's question about what actual public policies or regulations would flow from the kinds of concerns that I mentioned, well, here I would try carefully, partly because I don't have a worked-out list of regulations to propose for you, but the issue of the human growth hormone for height enhancement was raised.

Here is a case where the FDA already regulates the use of human growth hormone, and as I mentioned just extended the use to go beyond the medical use, but still to a very narrow set of permissible uses. I point to that example only to suggest that this is not a new question. That we already do regulate not only the practices, but also the reasons for practices, in this case, height enhancement. I think it is sensible that we consider the reasons as well as the practices themselves.

In the case of sex selection, I would draw a distinction between those who want to select the sex of their child through preimplantation genetic diagnosis to avoid a sex-linked genetic disease--I would have no objection to that. If it became a common practice simply for consumer-based sex selection, then I think that would be worrisome. What would be my public policy remedy? I don't know, but I would probably favor discouraging it in some way or another. I don't know what the right way to do it would be.

Consider the ads and the donor catalogs for sperm banks and for eggs, the designer egg I mentioned. I think it might not be unreasonable. If eugenic practices like that became widespread and came to pose more of a threat than they do today, then one thing one might do, short of banning those practices because it is hard to delve into the reasons and the motives, would be to say you can't advertise.

You can have a sperm bank. You can have a commercial sperm bank, but you can't advertise the eugenic features of the sperm yourself. That might be a reasonable regulation, short of banning, but a way of registering our unease with eugenics, the catering--[audio break].

[Side B of Tape 2 of 2 begins.]

DR. SANDEL: [In progress] -- consumerism. Cosmetic surgery is an example we have. Now that it exists, I don't admire people going for purely elective cosmetic surgery. I don't think it is admirable. I don't think it should be legally banned because I don't think it is of grave enough harm, and I would certainly distinguish it from reconstructive surgery, but here is one idea.

I don't even know if I am for it, but it is the kind of thing one could discuss. What about dealing with cosmetic surgery, which is a vice? It is a small vice. It is not grave vice. It is a small vice. Deal with it the way you deal with other vices with a syntax.

So, if you are going for purely elective cosmetic surgery, we will tax you, and with the proceeds from that tax, we will subsidize reconstructive otherwise afford it or other worthy things.

These are some straight thoughts on how this ethic might embody itself in our public life.

MR. DIONNE: Dr. Silver?

DR. SILVER: I would like to make two points and then respond to the question of where morality might be able to come from, if not from spirituality. If you go back and read Mary Shelley's "Frankenstein" written 200 years ago when she was

just 17 years old, there is this whole debate about whether it is moral to cheat death, and Victor Frankenstein was trying to cheat death. In fact, that is what we do every day when we apply medicine. We cheat death, and people have overcome this initial instinct to think that that was cheating death, meaning cheating what God intended for you.

The second point I would like to just tell you about, because it was a shock to me last year when I discovered it, I am an asthmatic which means that I carry around this little medicine with me wherever I go. I discovered last year when I was teaching my course that a woman who was in my course who was on the women's crew team at Princeton told me that 60 percent of the crew team was asthmatic.

I don't believe that is true. I think that what is going on, when I had talked to my asthma doctor about this, is this will increase lung capacity for everyone. This is an enhancement. So these kids are pretending that they are asthmatic, and it is a continuum. It is very difficult.

Of course, you can draw lines, but every line is arbitrary. It is very difficult to draw lines.

The last point I wanted to make is where morality can come from other than from religion, and the other answer is biology. There was a book by Robert Wright called "The Moral Animal," which suggests that morality is encoded in our genes because it provided for a benefit, community benefits, and then the community benefits and individual benefits, which is the whole basis for the world democracy.

MR. DIONNE: Thank you very much.

We are having a reception next door. I want to close with three things.

First, the Economist magazine actually once criticized me for writing such long acknowledgements that they ran it under the headline "Gratitude that Grates." That is true. I have always been proud of that attack.

[Laughter.]

MR. DIONNE: But I must thank Luis and also the Forum, Strobe Talbot and Carol Graham of Brookings, for being very excited as soon as this idea was promoted. Thanks so much to Kayla Drogosz who worked so hard on this, Katherine Moore, Sandy Stencil [ph], and all the folks at the Pew Forum.

This will be available online at www.pewforum.org and at www.brookings.edu, and I urge all religious microbiologists to write a letter to Dr. Silver.

The last thing I want to say, one of my favorite lines in the world is the end if Michael Sandel's book, "Liberalism and the Limits of Justice," where he makes the case for politics by saying, "In politics, we can know a good in common that we cannot know alone," and I think they have shown today, our speakers and our audience, that we can arrive at a greater wisdom in common than we ever can alone.

I thank you all so much.

[Applause.]

[End of Brookings/Pew Forum briefing.]

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