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Intelligence Squared U.S. Parenting Is Overrated

Guests:

For the Motion: Robert Plomin, Nancy Segal
Against the Motion: Paige Harden, Ann Pleshette Murphy
Moderator: John Donovan

AUDIENCE RESULTS

Before the debate:	After the debate:
27% FOR	32% FOR
52% AGAINST	59% AGAINST
21% UNDECIDED	9% UNDECIDED

Start Time: (00:00:00)

The way that we were raised -- we are all the product of that, one way or the other. But to what extent? Parents are driven these days to produce the child who is the happiest, or the best, or the smartest -- or fill in whatever your superlative is. And then, there's the whole question of free range, or helicopter, or tiger, or what zip code do you choose to live in -- or can you live in -- and what about education, what about the food you give your child? It is so much to think about and worry about. But what if science is telling mothers and fathers, "Don't sweat it. It's out of your control more than you think, because DNA is making most of the big decisions for you." This, since ancient time, has been a persisting quandary, usually called Nature Versus Nurture. But because of new evidence based on DNA research, and on twin studies, and on sibling studies, we are reviving the controversy that has revived itself, because we think it has the makings of a fresh debate. So, let's have it. Yes or no to this statement: Parenting is Overrated.

00:01:04

I'm John Donovan. I stand between two teams of two, who are truly experts in this topic. They will be arguing for and against this resolution. As always, our debate will go in three rounds, and then our live audience here at the Kaye Playhouse at Hunter College in New York City will vote to choose the winner. And as always, if all goes well, civil

discourse will also win. Our resolution again: Parenting is Overrated. Let's meet the debaters, starting with the team arguing for the resolution. Please welcome Robert Plomin.

[applause]

Robert, you are a professor of behavioral genetics at King's College in London. You're a leading scholar in this field, truly a leading scholar. You are the author of a recent book: "Blueprint: How DNA Makes Us Who We Are." Robert, it's so great to have you with us here tonight.

Robert Plomin:

Thank you very much, John.

John Donovan:

And ladies and gentlemen -- your debating partner, let's welcome Nancy Segal.

[applause]

Hi, Nancy. Welcome to Intelligence Squared. You are a professor of psychology and a director of the Twin Study Center at California State University in Fullerton.

00:02:03

You are the author of six books on twins. You're working on yet another book. Thanks so much for being with us tonight.

Nancy Segal:

My pleasure to be here, John.

John Donovan:

Thanks so much, Nancy.

[applause]

And we have two debaters arguing against the resolution -- Parenting is Overrated. Please, first, welcome Paige Harden.

[applause]

Hi, Paige. You're a professor of psychology at the University of Texas. There in Texas you head the developmental behavior genetics lab. You co-direct the Texas Twin Project. Welcome to Intelligence Squared.

Paige Harden:

Thanks for having me.

[applause]

John Donovan:

And your teammate, Ann Pleshette Murphy. And you're a therapist. You're a parenting counselor. You're an author. You were a parenting corresponding for ABC'S Good Morning America. We've both once worked there. Nice to see you again. You've served as editor and chief of Parents Magazine for over a decade. It is great to have you here.

Ann Pleshette Murphy:

Thanks so much.

[applause]

John Donovan:

Thank you, Paige and Ann, our team arguing against the resolution, Parenting is Overrated. Our four debaters.

00:03:01

[applause]

And so, onto the debate itself. Round 1 -- Round 1 is comprised of opening statements by each debater in turn. They will be six minutes each. And here to argue, first, in support of the resolution -- Parenting is Overrated -- is professor of behavioral genetics at King's College, London Robert Plomin.

[applause]

Robert Plomin:

Thank you, John.

John Donovan:

I don't think parenting is overrated if what we're talking about is the great joy that people get from raising children. It's a lifelong sort of relationship, and it -- many people derive meaning from that. I know I get a great pleasure out of my five children, the youngest of whom is now 40, as well as my six grandchildren. And no one thinks that parenting is overrated if we're talking about the fact that the human infant is helpless and can't survive without caregivers. So, parents matter, but that's not what the motion is about. The motion is about the relative impact of nature and nurture.

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Children are very different. Why are they different? Is it due to their inherited DNA differences -- nature -- or is it due to difference in parenting -- nurture? So, I'll talk about

these issues generally, and my colleague, Professor Segal, will talk -- will drill down a bit on it and talk especially about her work on twins who reared apart.

My book, *Blueprint*, is based on my 45 years of research, trying to understand the genetic and environmental causes of differences between children, using twins, adoptees, and now DNA. That research and other research over 40 years has convinced most scientists that inherited DNA differences account for about 50 percent of the differences between children on all psychological traits: their personalities, their mental health and illness, and their cognitive abilities and disabilities. What amazes me is that if you look at all the parenting books that are out there, and there are very popular books, not one mentions genetics, and that discrepancy is enough to say parenting is overrated because it discounts the importance of genetics.

00:05:16

And that's also why my next book is on genetics and parenting. The other 50 percent of the differences between children are due to the environment, but it's not the environment as we know it. Genetic research has shown us that the environment works very differently from the way environmentalists thought it worked, from Freud onwards. It's not due to systematic effects of parents or very early environment. The differences -- the systematic effects of parenting are mostly genetic effects in disguise. Parents are responding to genetic differences in their children rather than creating those differences. The important environmental factors operate in a rather mysterious way; they make two children in the same family with the same parents different from one another.

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For example, Professor Segal will talk about her work on twins who reared apart. Identical twins reared together are no more similar than identical twins reared apart, suggesting that being reared together doesn't make you similar. After 30 years of research trying to identify these environmental factors that make children and families different from one another, I've come to conclude that they're essentially unsystematic, idiosyncratic, random; in a way, chance. In other words, I'm saying that parenting differences within the normal range -- that is, excluding the extremes of, say, abuse -- don't make much of a difference in the long run, and the important message from this is that parents don't have as much control as they think they have. Parenting books make parents anxious by telling them they're responsible for the way their children turn out, but there isn't much evidence for this once you control for the fact of genetic similarity between parents and their offspring.

00:07:08

It's important to recognize that when children have problems like -- children develop severe problems like autism or depression or schizophrenia, it's especially important for parents to realize they don't have all the control or much control at all. The key question

is, why do parents -- why do some children develop these problems despite having good parents and good parenting? And our parenting theories have trouble explaining that, but genetics predicts it. Children are 50 percent similar to their parent genetically, but that means they're also 50 percent different genetically. So, the importance of genetics doesn't mean parents should throw up their hands and say there's nothing they can do about it. For example, parents can -- and I think, should -- control their children's problem behavior. But they're not changing their children's personality.

00:08:01

In addition, although systematic effects of parenting don't have much of an effect on average in the population, a particular parent can, with enough effort and time, make a big difference. They can mold their child to be the way they want them to be. But isn't it better that we, as parents, give children opportunities to find out what they like to do -- appetites -- and what they do well -- aptitudes? And I think -- for me, what we're trying to do is to help people shake off this nurture assumption and consider the importance of genetics. And this should be a liberating message for parents. It should free them to relax and enjoy the relationship with their children. It is a relationship. And like our relationship with our friends and our spouse, we don't do nice things for them to change them; we do nice things for them because we love them, and we want life to be nice for them.

So, you might as -- I think it is important to recognize that part of the joy of parenting is to watch our children become who they are genetically.

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And I think you might as well enjoy it, because you don't make much of a difference in the long run. This is why, for your own sanity, as a parent, I urge you to vote in favor of thinking about the idea that parenting is overrated. Thank you very much.

John Donovan:

Thank you, Robert Plomin.

[applause]

And that is our resolution: Parenting is Overrated. And here to make her opening statement against the resolution, psychology professor at University of Texas, Paige Harden.

[applause]

Paige Harden:

All right. So, in the late 1990s, long before she became famous for jade eggs and conscious uncoupling, Gwyneth Paltrow starred in this movie called "Sliding Doors." And in an early scene, you see her racing to catch a train that she gets just in the

nick of time. And then, in another early scene, you see her same character racing to catch the same train, except this time she misses it.

00:10:05

And the whole movie pings back and forth between these two alternate realities of the same woman's life. I love this movie, for lots of reasons. But one of them is because I think it gets at a question that a lot of us ask ourselves, which is the question of "What if?" What if something different had happened to me? Could my life had been different? And I think, once we became parents, those what ifs just multiply. What if I had stayed home instead of going out to work? What if I had breastfed instead of formula feeding?

We are fascinated by the question of whether or not our child's lives could have been different, and whether or not -- is there something that we could do that could have made them different? So, as you'll hear from our opponents this evening, twin studies provide a really fascinating glimpse into this question of "What if?" I also study twins, and it's because I think that they're awesome. They give us a really compelling grip on -- does DNA shape our lives?

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But as you listen to them, and you hear the stories of twins reared apart, reared together, I want you to be thinking about what they're not telling you. What are the "what ifs" that are being missed? So, the first big what if that twin study people often acknowledge is that they're talking about what they call normal range variation of parenting. They're not talking about the extremes of poverty, or abuse, or violence. And to hear people talk, you might imagine that these experiences are so rare that maybe we can get away without thinking about them too much in the course of ordinary science.

But I think that that is obviously not true. So, the University of Michigan's National Poverty Center, it estimates that 2.8 million children in the U.S. live in families that are making it on less than \$2 per day per person -- what the World Bank calls "deep poverty." If we're thinking about violence and victimization, we can see that 1 in 16 children will be sexually victimized this year.

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Protecting children from violence, providing food, providing shelter, providing basic material resources, this is part of parenting. And it's a part of parenting that many people find very challenging in our increasingly unequal society. Of course, poverty doesn't happen at random. It's racialized in the U.S. And that's another thing that you probably won't hear my opponent talk too much about, because the vast majority of genetic research -- not all of it, but most of it -- has been conducted with white people.

And also, with what the colleges call WEIRD people; so, people from Western, industrialized, educated, rich, and democratic societies. Just like a fish can't recognize the water that it swims in, a scientist that spends his entire career studying the differences

within WEIRD white people can become blind to the systematic effects not of DNA, but the systematic effects of culture, and parents transmit culture.

00:13:08

A large part of what parents do is teach the cultural rules about, how do we eat, how do we talk, who do we live with, how do we love, how we arrange our family relationships. So, let's go back to this question of, what if? What if you had the same genes, but you were raised in a different family? But instead of doing it within another family in the Upper East Side of Manhattan where we are tonight, let's say that your child was raised by a Hadza family in Tanzania.

So, now his parents don't send him to school, but they do teach him to hunt and forage so that he can collect over 90 percent of his food by the time he's 5. If we're considering the global diversity in parenting and what parents teach that they do for their children, I think it becomes impossible to say that parents don't make a difference for who children become. The last thing that you might not hear them talk too much about is social class in adulthood, and that's because the very same twin studies that we'll talk about a lot tonight show substantial effects of the family environment on how far people go in school; their educational attainment.

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What if you had not been to college? What if you dropped out before you got out of high school? How would your life be different? And by your "life," I don't just mean what you do for work or how much money you make, but also who you married, who your friends are, what your social networks are, what your hobbies are, where you live, how you spend your time.

If parenting makes a difference for educational attainment, parenting makes a difference for who we are as people. To say that parenting doesn't make a difference requires us to say that who we are as adults is radically decontextualized. Can who you are be considered separate from your culture, from your race, from your social class, from your religion? The reason why these political conflicts that divide us along these lines, that divide, for instance, the college-educated from the non-college-educated, or the religious from the secular -- the reason why these divides are called identity politics is because these things -- these social identities are part of the making of the self, and we get these social identities not entirely but in large part from our parents.

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They're transmitted from parent to child. So, in summary, if you think that the practices of WEIRD white people are not globally universal, if you think that the effect of poverty, especially deep poverty, on children can't be safely ignored by scientists for the sake of making generalizations. If you think that you would be different if you had been

deprived of the chance of an education, then I urge you to vote no against this motion, because parenting does make a difference for who we are. Thank you.

[applause]

John Donovan:

Thank you, Paige Harden. And a reminder of where we are, we are halfway through the opening round of this Intelligence Squared U.S. debate.

00:16:02

I'm John Donovan. We have four debaters arguing it out over this resolution, Parenting is Overrated. You've heard from the first two opening statements, and now on to the third. To debate for the resolution, here is profession of psychology and director of the Twin Study Center at California State University-Fullerton, Nancy Segal. Ladies and gentlemen, Nancy Segal.

[applause]

Nancy Segal:

Good evening. So, when I told a colleague that I was participating in this debate, he said to me, "You can't win, because parents believe that what they do makes an incredible difference in the lives of their children." But as my colleague Dr. Plomin pointed out, DNA is the key driving force between -- for how -- behind how children turn out to be as individuals. Children are not blank slates; they come into the world with steady pre-dispositions that parents respond to and do not create. People know this concept, but it's often lost when it comes to parenting.

00:17:02

Parental influences do not work in the way that most people think they do. There are a number of misconceptions. For example, if I read to my child, I'll make him smarter, or if I take my child to a museum, I'll turn her into an art lover. There are correlations between parent characteristics and child characteristics, but what drives that correlation? That's the point to consider, and these environments cannot be disentangled if you use intact biological families because parents pass on both genes and environments to the children, what we call passive gene environment correlation. Bright parents tend to have bright children, but they also tend to read to their children. But think about this: bright children also elicit opportunities for reading from their parents. Genes and environments can only be untangled if you use twins and adoptees.

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And my colleagues and I have produced a number of compelling findings showing that virtually all behavioral traits have some degree of genetic influence. Some of the

findings are surprising. Some of them are counter-intuitive, but we need to take them seriously if we have children's best interests at heart.

The logic of the twin method is very simple and very elegant. You simply compare the similarities of identical twins to the similarities of fraternal twins. And if the identical twins are more alike -- which they invariably are -- this is consistent with genetic influence on that particular behavior. And you know, twins are wonderful, because they tell us so much about human behavior, just by acting naturally. Now, one of the most provocative findings to emerge in the last 30 years is that twins raised apart are as alike as twins raised together. This seems illogical. We first reported this in 1988, when I was at the University of Minnesota.

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How can people reared apart be as alike as people reared together? But what this tells us is that it's the shared genes that compute the similarity in family members living together. But genes only explain 50 percent of the variation. The other half is explained by the random, non-shared effects that people experience on their own. It's the shared environment that makes such a small difference.

Think about this. Think about religiosity and sports participation -- very interesting behaviors. If you study young children living at home, you will not see a genetic effect. Identical twins are about as similar as fraternal twins, because they're under the guidance of parents. But once they begin to hit adolescence and adulthood, they acquire greater control over their environment, and new genetic effects kick in. And that's where you see the genetic effect. Now, in contrast with twin studies, we have adopted siblings, and these are siblings who grow up together -- share no genes in common but do share their families and their communities.

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Scores of studies have shown little resemblance between them in most behaviors. I study a very unique subset of adopted siblings called -- that I call virtual twins. And virtual twins are same-age, unrelated children raised together at the same time. So, they replicate twinship, but without the genetic link. I find that when they're 5 or 6, they show modest degree of similarity and intelligence, but less so than identical and fraternal twins. But as these children hit age 11, the similarity starts to drop off. And several studies have shown that, as adopted siblings hit the ages of adolescence and adulthood, the correlation is zero. These children are embarking more on their truer, genetically-based selves.

00:21:00

We need to care about these findings deeply. You know, I think of parents of one child as environmentalists, and parents of two children as geneticists. And I say that because parents of two children quickly realize what works for one child may not work for another. We all know that reading and singing are good things for children, but not all

children will respond the same way. What will delight one child may bore another, or even overwhelm another.

Parents need to stay sensitive to the individual differences in their children and remember that their treatment does not necessarily mean the same treatment. I trust in the audience tonight. We have parents of twins, parents of single kids, parents of adoptees. And I think that knowing that genetics influences child characteristics, and in turn, influence parental practices in no way diminishes the important role that parents play. In fact, I think it helps parenting, because it helps you set realistic expectations of what you can and do accomplish.

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So, in closing, I will say that we're so fortunate to have twins and adoptions out there, and they tell us a lot about human behavior. And that is why I hope you will vote in favor of the motion this evening. Thank you very much.

John Donovan:
Thank you. Nancy Segal.

[applause]

And that resolution, again, Parenting is Overrated. And here to make her closing statement against this resolution, author and parenting expert, Ann Pleshette Murphy.

Ann Pleshette Murphy:
Thank you.

[applause]

Thank you. So, Robert and Nancy believe that genes provide the blueprint of who our children become. We believe that the house is built on love. No matter our children's genetic makeup, they grow up in an environment of relationships, and they are shaped by the people who are likely to love them the most: their parents. So, even if a particular trait is, let's say, 50 percent due to genetic factors -- aggressiveness or shyness or sexual orientation -- how a parent responds to their highly assertive or socially inhibited or gay child is going to have an enormous impact on how that child feels about himself or herself, on their relationship, on their lives.

00:23:25

There's the story that I love to tell parents who come to me for parenting advice, and it comes from twin studies of identical twins separated at birth and raised in different families. In this case, it was toddler girls and their respective mothers, and they were asked a host of developmental questions about the girls, and one of the mothers complained bitterly about her eating habits. She said, "Oh, my God, it drives me crazy.

She won't eat anything. I give her everything children love; she won't eat it unless I put cinnamon all over it." And the other mother, when she was interviewed, had no complaints. She said, "She eats everything. You know, she eats everything we eat. Oh, I have to put cinnamon on everything."

00:24:02

[laughter]

So, same genetic predisposition. In one family, you know, that's a conflict and stress; in the other, no big deal. Now, I have no idea if one of these children developed an eating disorder and the other one founded Cinnabon, but --

[laughter]

-- I will tell you that this genetic predisposition in one family that had conflict and stress over a period of 10 years versus adaptation or acceptance is going to make a difference in how these girls turned out.

Now, our opponents argue, "Then why are children, even environmental siblings" -- that is, adopted children compared to their biological siblings -- "so different if they have the same parents?" Well, having the same parents is not the same as having the same parenting. If any of you have more than one child, I'm sure you remember that when the first baby's pacifier fell on the sidewalk, you sterilized it before you put it back in its mouth. By the third child, she was lucky if you licked it off and stuck it back in her mouth.

[laughter]

So, parental relationships are not static; they do evolve.

00:25:04

They are complicated and idiosyncratic and unpredictable. But just because the effects of parenting are difficult to measure doesn't mean that we should dismiss a child's environment as random, as Robert said earlier. In fact, there's an impressive and long history, you know, by psychologists, sociologists, anthropologists, educators, and other than geneticists, everybody I've ever heard of who said that there are myriad effects on children's development from their parents. So, how many of you are parents? Okay, so I just want to use one example --

John Donovan:

Can I just, for the sake of our listeners, say it's well more than half the audience?

Ann Pleshette Murphy:
Okay, thank you.

John Donovan:
You get that time back.

Ann Pleshette Murphy:
Okay, thank you. So, I just want to use an example from neuroscience, having listed all of the other experts who've weighed in, because this gets back to my saying that the house is built on love. I want you to imagine that you're in a face-to-face interaction with your baby.

00:26:02

Maybe you're feeding her, or you're bathing, or just playing. And your baby looks up, and your eyes meet, and your baby gurgles or coos and smile, and you naturally would say, "Wow, you're happy today. What are you trying to tell me?" And your baby answers with cooing or smiling or screeching or drizzling, you know, peach juice down her chin. This is something we call a serve-and-return interaction; it's like a tennis game.

And because neuroscientists now have the technology to measure the electrical activity in the child's brain while this is happening, we know that this kind of responsive parenting has a huge impact on building the brain. Literally, neurons that fire together wire together. And we also know what happens to babies who are raised in environments that are characterized by stress or deprivation or neglect: they show far less electrical activity in their brains and a lot of structural damage.

00:27:00

And the -- you know, the fact that these children are characterized as outliers is just not true. Adverse childhood experiences, or ACEs, include things like divorce, which, statistically speaking, means half of the audience has contributed -- I mean, has had this kind of experience. You know, living with an alcoholic parent or a depressed parent -- these are not uncommon experiences, and if a child experiences multiple ACEs over the course of their life, it triggers a stress response.

It's like revving a car engine for days or weeks at a time, and that toxic stress gets under the skin and leads to physical disabilities. It has major impact on their cognitive abilities and on their relationships. And what is the single-most important buffer against stress? It is the presence of a responsive, caring parent. So, when a child is stressed, one of the most important things is to have the presence of someone that you know and that knows you.

00:28:06

It's really about someone being there on a regular basis, someone who is just crazy about you. That helps a child form friendships, form relationships, learn in school, have -- be a great citizen. It basically helps them overcome or maximize their genetic hand. So, I don't think we can rate that highly enough, and I urge you to oppose this motion.

[applause]

John Donovan:

Thank you, Ann Pleshette Murphy.

[applause]

And that includes Round 1 of this Intelligence Squared U.S. debate, where our resolution is Parenting is Overrated. Now, we move on to Round 2, and Round 2 is where the debaters address one another directly. They also take questions from me, and from you, members of our live audience here at the Kaye Playhouse in New York City. The resolution is Parenting is Overrated. We have two debaters arguing for this resolution: Nancy Segal and Robert Plomin. They are arguing that parenting is a very nice thing to experience.

00:29:03

They're also saying that it is necessary to life; they are not saying that it doesn't play a role at all. They are saying, however, that it is far less significant than most people tend to assume. Just some statistics I'll throw in. There are, right now, over 50 parenting podcasts. Forbes estimated the market for millennial mothers stands at \$46 billion today. Only yesterday, when we checked, half of the Amazon's 50 bestselling books are either books for kids or books for parents.

And none of these -- very few of these, actually, have any sort of focus on DNA. So, what we're talking about is overrated in the framework of general assumptions that parenting is quite influential -- or, as Robert Plomin said, genetics is underrated. He points out that his research suggests that 50 percent of the influence on who your children turn out to be comes from parenting and that the other 50 percent is basically random -- what parents are doing is not something that is consistent and particularly not something that can be measured.

00:30:10

They are ruling out, of course, the impact of extreme situations -- extreme poverty, extreme abuse -- as not having any sort of significant impact on the child through environmental cause, but they say, that by and large, that the DNA factor has been underrated, that it's a 50 percent plus.

And they also talk extensively about twin studies, pointing out the elegance and the logic of twin studies, and the appeal they have for the very simple and beautifully clear story that they tend to tell about genetic influence. The team on the other side, Paige Harden

and Ann Pleshette Murphy, they are not arguing that DNA has no influence. And I think, again, we want to make clear that both sides are conceding that this is an interaction between two things. Nobody is taking an absolute stand for one side or the other, and that's important. But they do point out that relationships are extremely important in determining who people are.

00:31:05

People -- they're not arguing that people come into the world as a blank slate, but that what happens in the home afterwards -- or in the environment in which a child is raised -- happens afterwards; that it's very, very -- what they see their opponents doing that they question is they feel that their opponents are cherry-picking around -- their data around certain factors, which would confound their results, such as social class.

They also argue that the assertion of the other side -- that extreme cases are rare in number -- is not actually true; that the -- they're counting out too many people to get to the results that they do. So, there's a lot to unpack here. I want to get just a little bit specific. This isn't really a question for debate; it's just a question to understand. To the side that's arguing for the resolution, we've been talking in general terms about aspects of the child, of an individual, that are determined by DNA -- that folks might not have thought so.

00:32:00

Again, putting it in that framework. I just want to ask you some of the things you're saying are predictive by DNA. And if "predictive" is the wrong word, correct me on that -- but at least influence. Are you saying that IQ is something that would be predicted through DNA? I'm going to go through a short list. And so, rather -- I'm just looking for yes or no on this. Sorry to sound like this is a Congressional hearing, but I just --

[laughter]

-- I just want to get it out on the record, so I understand. I want to go through IQ, income, educational attainment, religious preference, for example. Are these things that you're saying are determined by DNA, what -- that most people might think have to do with the environment?

Nancy Segal:

John, I don't like the word "determined."

John Donovan:

Okay.

Nancy Segal:

Genes work in probabilistic fashion.

John Donovan:

So, [unintelligible] --

Nancy Segal:

They make some things more likely, and some things less likely, but they predisposed you. They are not deterministic. It takes an environment to have genes be expressed --

John Donovan:

Okay.

Nancy Segal:

And that's why IQ and genes are not deterministic.

John Donovan:

So, you -- I'm glad that you corrected me on that, but can we go back to the list and on -- are you talking about probabilistic influence on these kinds of factors?

00:33:00

We're just looking for what it is we're talking about.

Robert Plomin:

Yeah. Well, when I was in graduate school in the early '70s it was dangerous to even bring up genetics. Things have changed so much now that the challenge is to find anything that doesn't show significant genetic influence --

John Donovan:

So --

Robert Plomin:

-- including the things you mentioned.

John Donovan:

So, IQ, educational attainment, income, being religious or not, being aggressive or not, being depressed or not?

Robert Plomin:

Yeah.

John Donovan:

Okay, so those are the kinds of things that I wanted to make clear.

Nancy Segal:

Can I make one point quickly? When we talk about religious preference, we're talking about religiosity: one's investment; one's involvement in religion; one's daily activities that have a religious bent. We're not talking about religious affiliation.

John Donovan:
Why not?

Nancy Segal:
Because we're not.

[laughter]

John Donovan:
Well --

Nancy Segal:
[unintelligible]

John Donovan:
-- let me take it to the other side.

Paige Harden:
I mean, I think she's not, because if you look at twin studies, fraternal twins, identical twins, adopted siblings -- they share the same religious affiliation. This is one of these cultural social activities that I'm talking about that are transmitted from parent to child. So, you see a great deal of heritability for, as Nancy was saying, how often you go to church, how often you go to synagogue, how often you pray, how often you don't do those things.

00:34:10

So, when we're looking at whether or not you're Protestant, Catholic, Jewish, or Muslim, that doesn't seem to show genetic influence. That's a cultural identity that's transmitted from parent to child.

Nancy Segal:
And I would agree with that completely.

John Donovan:
You agree with what?

Nancy Segal:
With the idea that one's religious affiliation comes from the cultural climate from the family.

John Donovan:
So, you --

Nancy Segal:

And that's a huge factor in making us who we are and how we basically, you know, describe our relationship to both family, our communities. It's a huge part of our identities. It does to me make a huge difference.

John Donovan:

Do you have a response to that? Because, again, your opponents are saying you're sort of cherry-picking the things that -- where your evidence shows that parenting is not influential, and the choice of whether you're Jewish or Muslim would seem to depend on your parents.

00:35:03

And you're saying that -- so, you're conceding that that would depend on your --

Nancy Segal:

Yes, correct.

John Donovan:

So, that is a measurable environmental impact?

Nancy Segal:

Yes.

John Donovan:

Okay, so there are -- that's not random then. Okay.

Robert Plomin:

We're talking about the things that psychologists usually study, these traits, individual differences like differences in personality, mental health and illness, cognitive abilities and disabilities. All of those traits show significant and substantial genetic influence.

John Donovan:

Okay, let me take this to your opponents then. So, they've made a case using these twin studies, which indeed are exceedingly elegant, very, very compelling, very, very easy to understand. And certain of these traits, I would say, for example -- and you can challenge this, but I would say common sense sort of sense -- autism would not seem to be socially determined at a certain level. A certain degree of severity of autism is not going to be a social thing. It's going to be biologically determined. So, take on the fact that the kinds of traits that Robert just talked about he's saying stand apart from social -- from the sort of social cherry-picking criticisms that you're talking about.

00:36:10

These are things that are innate, that are measurable, have been measurable for a long time. So, one of the two of you would like to take that on.

Paige Harden:
Yeah, so I --

John Donovan:
Paige Harden.

Paige Harden:
-- have two responses to that. And so, the first thing is to think about -- when we're thinking about the life of a child with autism, are we talking about the symptoms that they develop at the age of two, or are we thinking about their level of functioning in the world -- what school they can go to; what social relationships they acquire -- which is something that is a function of both the level -- severity of their disorder, but also their availability of treatment and how -- what resources they have available to them in order to address the symptoms of their disorder.

And so, I would say autism is a very highly heritable condition, and when we're talking about some of the initial level of functioning at the time that they're diagnosed, I think that parents probably do have a relatively limited impact on that.

00:37:03

Where they do have a much greater impact, and I think Annie would agree with me on this, is, how do they -- how do parents respond to that initial genetic condition, and do they have the resources to give their child the therapy, the play therapy, the access to groups, the support system that they need in order to function at their maximal level of functioning?

Ann Pleshette Murphy:
I mean, I think one of the most -- actually, I think one of the most interesting parts of your book, Robert, is this idea of the nature of nurture, which is something that Nancy also alluded to, which -- that children elicit from their environment certain kinds of behaviors. So, Robert makes a very impressive, persuasive point that children who have parents who love to read -- you know, that they'll have children who love to read. And you know, you assume it's because the parents are reading to the children, but the children are born into the world with a desire to be read to. But I would argue that if they were living in a family where they can't afford a book, that it doesn't matter if they're trying to elicit this behavior.

00:38:04

I think that's sort of what you're saying, Paige, is this idea that access to resources and access to all sorts of things that a lot of children don't have is not something you can just ignore.

Nancy Segal:

There are families who obviously don't have certain kinds of resources. But again, I think we have to tailor our comments and our thinking to the normal range here -- because there's an example I'm going to talk about a little bit later, of a family where educational resources were not so widely available in the home, but in the community, they were.

So, this is a great example of a child crafting her own environment, creating a world for herself that was meaningful out of what was there, which did not necessarily have anything to do with the home.

Ann Pleshette Murphy:

Yeah.

Nancy Segal:

And we see this all the time with twins raised apart. I mean, Paige, you raised the comment of these "what ifs." And that's such an interesting question. But we have answers to "what if" questions if we look at twins raised apart.

00:39:02

They are the only people in the world who can see what their life might have been like if they had different parents, different communities -- even different countries sometimes.

John Donovan:

So, take on, again, the twin studies. I know that you challenged the sense that they're cherry-picking around. But just -- the sheer fact that, you know, there have been movies made about this, you can see for yourself two twins raised apart in different families. They get together, and they smoke the same cigarettes, and they do this the same way, at the same time. They cross their legs. They wear the same clothes. They go out with the same kind of -- you know, they date the same kind of people -- that there's such a compelling case that -- right in front of you, made by nature, to make that point. And it's so very persuasive.

Paige Harden:

Yes, it is. And to be clear, I'm not arguing that genetics are unimportant. We've mentioned one type of twin studies -- twins reared apart, which is both twins were given up by their biological parents, and both were raised in an adoptive family.

00:40:03

But there's a different type of study that we could be talking about, which is one sibling is adopted away and one stays in his or her biological family, which is a different sort of what if -- not if you'd both been adopted by the sorts of people who are allowed to adopt children, which is not -- in many ways, the lower range of environmental adversity -- but what if you had stayed behind in your biological family versus an adopted away? There was just a large-scale study that was done using that design in

Sweden, using the entire population. And they find that, even for things that we know are very inheritable -- like IQ -- there's still this effect of being raised in a different environment. So, that study estimated that increase of between 4 and 8 IQ points if you were adopted away into a different family, compared to the sibling that was staying in their biological family.

John Donovan:

So, do -- can I take it to the other side? Are you aware of that study, and what's the response?

Robert Plomin:

Yeah, what we're talking about there is a mean difference, not individual differences.

00:41:01

John Donovan:

So, explain that. Take --

Robert Plomin:

So --

John Donovan:

-- educate us for 30 seconds on that.

Robert Plomin:

You know, as -- the good point you're making, that if children are raised in extreme poverty, that will have an effect. But it's a mean effect. What we're asking here is about the similarity between children. So, like, if you take weight, you might be surprised, you know, weight is 70 percent heritable.

That means that the differences we observe in this population, in this room, about 70 percent of the differences are due to genetics. Adopted siblings -- that is, unrelated kids reared in the same family -- correlate zero. Adopted apart siblings who share genes, but not environment, they correlate just the same as siblings who share genes and environment. So, that's what we're talking about here. It could be that -- you know, it -- the basic issues -- we're talking about "What is?" not "What could be?" and Paige made some very good points. We can only describe the samples we've studied, and these are WEIRD samples, as you say. But they're representative of the population. But they're not talking about what could be, the what ifs that Paige was talking about.

00:42:02

John Donovan:

Well --

Robert Plomin:

I don't think we're in disagreement about that.

John Donovan:

We had a question raised before the debate actually began, about whether -- you know, just how random is a group of individuals, for example, who are the natural parents of adopted -- of children ultimately adopted. Is that --

Robert Plomin:

[affirmative]

John Donovan:

Is that a random group?

Robert Plomin:

Well, I've done adoption study -- Colorado adoption study -- for 40 years now. And we've had adoptive parents, and matched non-adoptive parents. And again, they're -- this was Colorado -- and that's not representative of the world.

It's primarily Caucasian samples. But we did have matched non-adoptive families and adoptive families, and they give you the corresponding results that you would expect.

John Donovan:

[affirmative].

Ann Pleshette Murphy:

I think we can say -- and this is -- there's evidence -- is that adoptive parents are somewhat atypical in that they're somewhat better educated; they have good finances, because they're carefully screened by agencies. So, given that difference, then you have to ask yourself, is that trait relevant? I mean, the difference may be there, but is it relevant to the trait that you're studying, and if it's not, then the difference doesn't matter.

00:43:02

John Donovan:

Well, you're talking about the parents who adopt. I'm talking about the parents who give up their children for adoption, whether there's a genetic component at all there, any indication of that. Do you know? Is it random?

Robert Plomin:

Yes, well, in our study that was one of the big things, but we studied the end of the swinging '60s, so these were children born to what they called then illegitimate mothers in the early 1970s before abortion and contraception were available.

So, that was mostly religious-oriented. They went to these religious homes to have their child, and then they went back, so they really were quite representative. But there were

other adoption studies where that's not the case. So, we're only describing the samples that we studied; we do the best to make them representative, but they don't represent the world. They describe what is, not what could be in another culture, in another time, on another planet.

John Donovan:

Ann Pleshette Murphy, in one of your opponents' opening statements, he made the point that there's so much pressure on parents that the news that DNA has enormous influence that cannot really be overcome without a whole lot of extreme work should be a relief to parents.

00:44:04

And Nancy actually argued that knowing your kid's DNA can give you realistic expectations of what that child's life is going to be, and that you can make accommodations for that. What's your response to that?

Ann Pleshette Murphy:

Well, I -- look, again, this is something that I think we do agree, you know, with our opponents about, which is that, yeah, you should basically understand that if your child is very, very shy, you know, that she's not doing this to, you know, embarrass, that this is what she's fundamentally about.

And therefore, you should be able to, you know work with that as opposed to work against it. And, you know, I think, you know, Robert and I debated each other in London about a year ago, and we -- there was one person in the audience who said, "I don't think you're actually disagreeing with each other," and on that point I don't think we are. But I do think that it's, you know, very easy to then flip into, well, okay, then it doesn't really matter what I do. And, you know, that's a very slippery slope, because I do think that for every child, the understanding that the parents bring to what their basic personality is, is fundamentally important.

00:45:09

But the other thing is that you shouldn't then say, "Okay, well, you know, this is what they're about. I can't do anything about this; there's nothing I can do about this." I mean, that's where I think you can get into serious problems and not be what you need to be, which is to provide the kind of structure and love that every child needs.

John Donovan:

Nancy?

Nancy Segal:

You know, Ken Mitchell just wrote a wonderful book called *Innate*, and he makes the distinction between children's behavioral traits and their actual behaviors, and this touches upon a point that Annie was just raising, that if you have a shy child you're probably not going to make that child outgoing and extroverted, but you can help that child get a little more comfortable in certain situations by giving them support and things of that sort. So, parents can nudge children in various directions.

John Donovan:

I want to move on to audience questions. I want to start by introducing to the question Andrew Solomon, who is kind of an expert on the topic and is a friend of Intelligence Squared.

00:46:09

And you are a lecturer yourself at Columbia University Medical Center; you've written a lot of books -- a lot on the topic of the role of families, including the slam-dunk amazing book *Far From the Tree*, which I bet everybody has read at one point or another. So, I just want to ask, Andrew, as you've been listening with your sharp ears, what question has come to your mind?

Andrew Solomon:

Well, dozens of questions have come to my mind from the extremely interesting and evocative statements by the panelists, and I thought a lot of the philosopher John Locke, who was the one who originally said that children were a blank slate whose character could be turned this way or that as easily as water, and who notably never had children.

[laughter]

I'm going to point to two studies that I think are of interest. The first is one that was done by Myrna Weissman at Columbia in which she looked for solutions to the treatment of depressed children, and she tried dozens and dozens of different treatments and ultimately conclude that the most effective way to resolve depression in children was to treat their mothers.

00:47:12

[laughter]

And the second is a study that was done at Yale about 10 years ago, in which they were studying at -- the tendency of abusive or neglectful parents to have abusive or neglectful children. And they pinpointed genes that were associated with vulnerability to parental influence -- which is to say that if you didn't have those genes, you could be very badly abused and still turn out okay; and if you did have those genes, that it was highly likely that you would be transformed by the abusive environment and would go on to be abusive, or often criminal yourself.

So, the question that I would put to the panelists is whether it's really possible to disentangle nature and nurture -- and also, whether you aren't, in some ways, making false arguments by attempting to universalize and to establish proportion. Some people, I think, are largely the way they are as a result of their genetics.

00:48:04

Some people are largely the way they are as a result of their environment. And most people represent a mixing of the two, the very mixing you both acknowledge, that led a previous audience member -- you just said -- at a previous debate, to say that the debate itself was one between people who agree with each other.

[laughter]

John Donovan:

Robert, you've been at this the longest.

[applause]

Thanks so much, Andrew Solomon. Robert, you've been at this the longest. Can you take that on? As, in fact, you do -- you do come with a number.

Robert Plomin:

Yeah. Well I think there was a number of different questions there, really. And the last one was, can we disentangle nature and nurture? And I think, based on 100 years of research, using different designs, you know, that have different problems -- twins, adoption -- they converge on the same conclusion of the importance of genetics. So, yes, I think you can disentangle them. And the answer is consistently in the populations we study -- that genetics is very important. We haven't even mentioned DNA; the DNA revolution is going to change everything.

00:49:04

We can now estimate genetic influence with DNA itself, in unrelated samples. And it's coming up with significant estimates of genetic influence too. So, I -- if that was the main question, I would -- you know -- very much say --

John Donovan:

Yes.

Robert Plomin:

-- the answer is yes; we can disentangle them.

John Donovan:

Who would like to respond from the other side? And do you want to say something?

Nancy Segal:
Yes.

John Donovan:
Nancy, let me get to the other side, and then I'll come back to you.

Nancy Segal:
Of course.

John Donovan:
Thanks.

Paige Harden:
So, I love that you brought up --

John Donovan:
Paige Harden.

Paige Harden:
-- parenting intervention for depression. It reminds me when I was training as a clinical psychologist. I had a supervisor who said that the most common diagnosis for children was what he called NRFUP [spelled phonetically], which was normal reaction to effed up parents.

[laughter]

So, but I also love that you brought it up, because it reminds us that we have more than one causal tool in the toolbox. So, I think twin studies are beautiful, because they capitalize on this natural experiment, the natural experiment of twinning, or this natural experiment of children who have been given up for adoption.

00:50:03

But they're not the only experiments that we have. And I think, looking, in particular, at parenting intervention studies -- and even intervening in things that we don't typically think of parenting, but just increasing parents' socioeconomic resources, and how do they respond do that -- give us great causal purchase [spelled phonetically] about the effects of parenting on kids. Regarding whether or not you can ever disentangle nature and nurture -- so, I'm going to -- I'm reminded of something from, actually, your own book. So -- from -- in "Far from the Tree," you talk about musical prodigies, at one point in time. And you talk about how -- is it innate talent or is it practice?

And when you're looking at people who are at the very, you know, extreme ends of talent, you say, "Well, we can't possibly describe all of this with practice," right? There seems to be this role of innate talent. But if no one ever touches a musical instrument, then, obviously, they're not going to be -- have any sort of musical talent.

00:51:00

So, for any one person, how much of it is talent? How much of it is practice? It's impossible to say.

John Donovan:

Let me --

Paige Harden:

And we're talking about the effects of parenting -- I'm really thinking about, like, what is the average treatment effect. So, across people, what is the average? And then, I think we can, actually, come back to a -- if I've averaged across 100 people or a population -- "This is it." So, I don't think we can ever say, for an individual: "What is the dynamic cocktail that has made them who they are?"

John Donovan:

Nancy Segal.

Nancy Segal:

Yeah. I just want to clarify something about heritability -- or genetic influence. And I think Paige is getting to that at the end of her comment. It's that -- when we talk about numbers -- 50 percent, 40 percent, we're talking about populations. Variation from person to person. But in a single individual, you cannot pull apart genes and environment. You can't say that, for this child, 80 percent of her intelligence score is accounted for by genes, and 20 percent is by the environment. And I think that's a concept that's critical to understand.

John Donovan:

Yeah.

Nancy Segal:

It's not difficult, but it's one that unfortunately gets lost. And all of this is always done in the media, and it's just not clearly explained.

00:52:05

If you get my -- one of my books, you'll see, I have a glossary at the end. And it's very clear there too.

John Donovan:

Will we get to that point where that's doable?

Nancy Segal:

I'm sorry?

John Donovan:

Will we get someday -- the science get to the point where you can make that kind of call on an individual?

Nancy Segal:

Well, I think it's --

John Donovan:

And are you getting closer?

Nancy Segal:

I think it's probably possible. Maybe Robert can speak to that with a polygenic score.

Robert Plomin:

No, these DNA scores that predict people's behavior -- they also are population statistics. They -- you know, it's an average, and as Andrew said, some people -- a way to 70 percent heritable, some of us may be that -- we are primarily for genetic reasons, some for environmental reasons, but we're averaging out across the population.

John Donovan:

But an individual can get his or her polygenic score on obesity?

Robert Plomin:

Yeah, so that there are single-gene causes of obesity studied, but also there are illnesses and environmental factors that can cause someone to become obese.

John Donovan:

But this score will tell you what your odds are as a child of being an obese adult?

Robert Plomin:

Yes, that's the thing about the DNA prediction, is you can predict as well from birth as you can from later in life.

00:53:03

My polygenic scores -- I've published the proof file of polygenic scores in my book *Blueprint*, and the highest score I had was for weight. I'm meant to be a genetic fatty; I'm at the 94th percentile genetically. But that doesn't mean that I can't do anything about it, and it's only talking about, you know -- it's a population statistic.

Ann Pleshette Murphy:

Yeah, but I -- you know, I think it's really interesting that the polygenic score issue is something that we have to think about really, really seriously, because it is something that could potentially be used to -- let's say, at birth that a parent is told that their child has a,

you know, 70 percent chance for developing -- I mean, you had a very high chance of developing schizophrenia in your polygenic score. And I think that this is a very scary direction to be going in because I think that labeling children is both pernicious, I think it's very, very limiting, and I think it's terrifying.

00:54:04

John Donovan:
Isn't that --

Ann Pleshette Murphy:
So, I don't think it's -- I think it's not just about -- I mean, I think the idea that, oh, this would help parents to just, you know, accept who their child may be, I think you have to be really careful here because, in fact, I think it can be the reverse.

John Donovan:
My question is not meant to take sides in this issue, but isn't that genie out of the bottle? I mean, aren't we there where that's --

Ann Pleshette Murphy:
Well, I think that, you know, it's interesting. We haven't really talked about it until this moment, because I think that it's something that could easily be abused. It's not something that right now has been, I think, discussed enough, and the ethics of it are, I think, very, very scary.

John Donovan:
Okay, Nancy, can you make your comment in 30 seconds [unintelligible]?

Nancy Segal:
I can.

John Donovan:
Thanks.

Nancy Segal:
You know, the polygenic score is new, but think about all the other new things that have been introduced into medicine. For example, in vitro fertilization in 1978 was considered something terrible that was going to ruin the dynamics of families. It seems to me that if these polygenic scores get more precise, and they will for sure, parents want to know everything they can about their child.

00:55:02

If you knew that your child was at some risk for an illness or something of that sort, you'd want to know about it so you could take precautions. And wouldn't you be angry

if that information were available, and it was withheld from you? I think this is something we need to think about for the future.

John Donovan:

Okay, I'd like to go to some questions now. And --

Audience Member:

Hello, my name is Lucas [spelled phonetically]. So, up until this point, everyone on both sides of this divide has been talking about how there's a sort of head-to-head 50 challenge between genetics and environment using twin and family studies, but I had read and understood that using newer, more recent technology that looked at DNA -- that this proportion is actually very different, that genetics explains far less for very socially relevant traits such as IQ and educational attainment. So, question for Robert Plomin and Nancy Segal: is that correct?

00:56:02

Is the debate still 50-50 between genetics and environment when we look at DNA?

John Donovan:

Thank you.

Robert Plomin:

Yeah, well, this is part of the DNA revolution, so it goes back to the previous question a bit. But when I said you can use DNA itself to estimate heritability, it involves some technical issues about these tips that measure millions of DNA differences.

The problem is we're limited to those that we actually measure, so we're underestimating the total influence of genetics. But the point is with one hand tied behind our back we're estimating about 50 percent of the heritability found in twin and adoption studies, and this is only in the last few years. Once we do whole-genome sequencing where we get all the DNA differences, there's a recent study that show that we will be predicting almost as much heritability as twin and adoption studies. There's a lot of technical stuff behind all of that, but that's the short answer.

Nancy Segal:

Also, I'll just add that while most traits do show about a 50-50 genetic/environmental split, some show higher.

00:57:01

Autism is much higher, maybe 70/80 percent. IQ seems to be about 75 percent, and there are some that are lower, like job satisfaction, at 30 percent.

John Donovan:

Paige Harden.

Paige Harden:

I would say that I view this question as much more open scientifically than, I think, Robert and Nancy are giving us credit for. So, I think one possibility is that it's technical issues, and that, as we sequence more of the genome, we'll recover some of the twin estimates of heritability. But I also think it's possible that the twin studies are over-estimates, and that what we're getting from molecular methods are more accurate. And I think, if we surveyed the statistical genetics community, we would see a lot of division around whether or not they think this is a problem that is eventually going to settle around the twin estimates. So, I think there's more doubt than, perhaps, they're portraying here.

Robert Plomin:

I would just say it's all very new stuff.

Paige Harden:

[affirmative]

Robert Plomin:

This is all in the last few years.

John Donovan:

Okay. I'm going to go to -- sitting against the wall.

Audience Member:

My name is Christine. And the last gentleman actually did this also. I've heard the word "environment" versus "genetics" a lot.

00:58:01

And I am curious: is environment the same as parenting?

John Donovan:

Thank you. That's --

Audience Member:

And could you define parenting?

John Donovan:

That's a great question, actually. And very well done, in one sentence. That's a great question to clarify.

[applause]

What are we talking about, here? So, let's start -- this side has not been speaking --

Ann Pleshette Murphy:

Yeah. Well, no -- I --

John Donovan:

Ann --

Ann Pleshette Murphy:

-- I think it's a great question, because we focused on parenting tonight. And you know, frankly, parenting wasn't even a verb, you know, a number of years ago. So, the idea that, you know, parents have -- that it's all on parents is ridiculous. Thankfully, what influences our children and who makes us who we are has everything to do with our peer relationships. There's a lot of research that, actually, it's not parents; it's your peers -- that, you know, where you go to school, where you live -- these are incredibly important influences on who our children become. And that's why -- you know, what I think we'd have to get back to here, which is very important, in terms of evaluating the research and the argument, is that just because the environment is very difficult to measure, because there's so many of these factors.

00:59:03

It's unsystematic, and it's -- as Robert said -- doesn't mean that you should just throw it away. I mean, if we told you that, you know, chocolate cake makes people happy, it doesn't mean that love doesn't make people happy. It doesn't mean that you just discount all of the other things, because it's very difficult to measure. So, I think that's a very, very important question.

John Donovan:

Robert?

Robert Plomin:

This raises an important point -- that genetics is defined very narrowly, as inherited DNA differences. Anything that you can't explain with that is called "the environment," and parenting is only one part of that. So, it's a very good question, and it's true that we haven't studied all aspects of parenting, where there would have been thousands of studies trying to measure these things. And it may be, as you say, that we just haven't measured the right things. But at some point, you got to say --

Ann Pleshette Murphy:

[unintelligible]?

Robert Plomin:

No. You've got to say, we -- what we're finding is stuff that isn't measurable, and I think, is idiosyncratic and non-systematic.

01:00:03

And this is just "stuff happens." If you look back on your life and say, "Why are you doing -- why am I doing what I am?" it's a whole bunch of these chance events, where one thing happens, and it leads to another thing.

Female Speaker:

So, I want to -- can I --

John Donovan:

Let me just bring in Nancy, yeah.

Nancy Segal:

The woman who asked the question about the environment, I also think that was a great question. And when we talk about the environment, we're also talking about the pre-natal environment. And I'll let you know that identical twin wombs are much less alike than people think they are. There's stresses on one fetus that might not be relevant to the other. And the fact that identical twins are so much like, despite that, really shows that there's a buffering system going on and that genes do make an effect. Also, I liked Ann's comment about how the environment encompasses so many things. But I must say that one of the recent parenting newsletters from the New York Times, they actually reported how much time parents spend reading, singing, and working with their children.

And you know what that average was?

01:01:02

Fifteen to 20 minutes. [laughs]

John Donovan:

We have another question from a regular attendee of our events. And you're out there, Leandra Graham [spelled phonetically] -- are you out there? Hi. So, you emailed us and you told us that you have a personal connection to this topic. And you would like to ask the debaters a question. So, I'm hoping that it's a really great question, and I don't have to turn it down.

Audience Member:

Great. My name is Leandra Ramm [spelled phonetically]. I'm an opera singer, and I was conceived from the Repository for Germinal Choice. I recently discovered the identity of my biological father and some half-siblings through 23andMe. My donor father was a very important mathematician, and two of my half-siblings are an engineer and a mathematician. How have services like 23andMe changed this debate? Also, have you studied the effect of knowing versus not knowing that a parent is a biological parent?

John Donovan:

Are you sort of suggesting that you had pretty amazing biological parentage, and now you're pretty amazing --

01:02:02

[laughter]

-- that that's how it's turned out?

Audience Member:

I found out, you know, that my biological father was a mathematician --

John Donovan:

But does something ring true to you about that? Is that -- "Oh, I recognize that something is there."

Audience Member:

Well, I was wondering if there were any studies on it. It is pretty amazing that --

John Donovan:

Okay --

Audience Member:

-- two of my half-siblings --

John Donovan:

-- I'd like to actually go to Annie first to take on that question, just to get your reaction to it.

Ann Pleshette Murphy:

Yeah, I mean, I think that the -- well, first of all, I think that -- how many of you have done 23andMe?

John Donovan:

Okay, again, I want to show there's a lot of people, like 45 people.

Ann Pleshette Murphy:

Yeah. I mean, so, look, I think that the idea that the genie -- the genetic genie is out of the bottle and that there's enormous curiosity, especially for someone like you, to trace and, you know, to find out that you have this, you know, heritage, basically. You know, I think this is the direction we're going to go in, and I'm not saying, "Oh, no, we can't do that." But I do think that, you know, how it affected you and how it made you think about how you -- you know, your own personal narrative.

01:03:03

You know, as a therapist, basically I work with the stories we tell about ourselves. You know, yes, you may have, you know, been given a certain genetic hand, but how you end up, you know, explaining who you are to yourself and to your therapist or to somebody, you know, you're in love with or any of the other people that we relate to is an incredibly important part of our own identity and how we evolve. So, I think that that's the part of this. We don't know how a polygenic -- how, you know, DNA gets, you know, to where you are.

I mean, it doesn't really -- at this point, polygenic scores don't really tell us anything about the pathways from those polygenic scores, from those DNA differences, to the person you are, and that's what I think is something that we have to get, you know, a lot more information on.

John Donovan:

We have time for one more question. Sir? Yeah?

Audience Member:

Thank you. Further to the question of parenting and environment and for a little nuance on the nature versus nurture dichotomy, I'd like to invoke a book that may have first put this question on the map, Judith Harris' [spelled phonetically] *The Nurture Assumption*.

01:04:10

Back in the '90s -- I'm sure you're all familiar with -- in which she argued that, yes, genes are one of two enormous influences on a child's development, and that -- but that while parents, top-down, have very little influence, the other big factor is the child's peer group, and parents can have an indirect influence there and, in a bottom-up way, perhaps have influence. My question is, to what extent do you subscribe to Harris' once-controversial thesis, and which side of the debate does it favor?

John Donovan:

I'm going to choose one person from each side, and I'd like to give it to you, Nancy.

Nancy Segal:

Well, we know that people pick their friendships based upon similarities, not on differences, and I'm not saying that you recognize genes in another person, but you're going to find somebody that you're compatible with.

01:05:03

People spend a lot more time with their peers than they do with their parents. I think it's not surprising that peers do have an influence. One of the twin studies showed that peers had an influence when it came to juvenile delinquency. So, I think that it does make sense, but I think that there's room for both genes and environment in your particular issue.

John Donovan:
Paige?

Paige Harden:

So, two thoughts on that. The first is you're pointing out that there's a whole system. So, where do kids meet their peers? They meet them at school; they meet them at temple; they meet them at summer camp. But who's putting them in those situations? The parents. And I think it's difficult when we're thinking about the when we're thinking about the interrelated web of people -- to pick out one person and say, "Well, it's the child's genotype or it's the peers, or it's the parents that scaffolded and structured this entire environment." That being said, if we're thinking about responsibility, the parents are the grown-ups in that situation, right?

01:06:00

So, if I'm going to say, "Well, why is my 7-year-old acting up?" Well, I blame the other 7-year-olds that he's happened to meet in school, or I can think about, "Well, who was in charge of this classroom? Who's in charge of putting my kid in this social environment?" So, all of that to say, I think -- it comes back to Andrew Solomon's point of, can we really disentangle this interconnected web of people? The second point I wanted to make is that, in the wake of Judith Harris's book, there was a number of twin studies. Robert did an enormous amount of work. I've done some of this work too, where we try to say, "Okay. Well, can we account for some of this non-shared environment -- these twin differences in something, by measuring something about the peer environment?" And that has largely been a really frustrating research endeavor, which has led, I think, to Robert's conclusion that this is randomness; this is unsystematic. I take a different view. I sort of think of it as -- you know, if we think about humans' efforts to predict the weather over most of human history, I think most of human history, they would say, "Well, this is random.

01:07:09

This is the capricious acts of vengeful gods. We can't predict this. So, therefore, it must not be systematic; maybe this has something to do with -- you know, whether we've made the right sacrifices or not." But actually, it was just that we didn't have the appropriate models for modeling complex systems. So, when I think of non-shared environmental differences between twins, and how difficult it is to pin it on something like "It's this peer group or it's this aspect of parenting" -- I don't think that means that the environment is random noise or unsystematic. I think that we are at the point that pre-modern people were with trying to predict the weather. That doesn't mean that climate change isn't real; that means that weather is still unpredicted, not unpredictable.

John Donovan:

Thank you, Paige Harden. And that concludes Round 2 of this Intelligence Squared U.S. debate, where our resolution is: Parenting is Overrated.

[applause]

And now, we move on to Round 3.

01:08:01

And on Round 3, the debaters make closing statements. They will be two minutes each. Here to make his first -- here up first in the round of closing statements, arguing for the resolution, professor of behavioral genetics at Kings College, London, Robert Plomin.

Robert Plomin:
Okay.

[applause]

Professor Segal mentioned one of my favorite sayings or phrases about nature and nurture, and that is that parents are environmentalists until they have more than one child. So, with your first child, you can explain anything environmentally. That's the problem with environmental hypotheses. But when you have more children, you start to say, "God, they were different from very early in life. I didn't do that." And you start to take genetics more seriously. This is how I met my wife, Judy Dunn [spelled phonetically], who is a developmental psychologist and the doyenne of sibling relationships. And when I met her in the early 1980s, she was perplexed by a finding that was consistent across the studies: siblings in the same family are so different, even though they have the same parent, who seems to be treating them pretty much alike.

01:09:00

And so, we met at a conference in 1981 in London, in which she gave a talk on this from an environmental perspective. Why are siblings so different when their parents treat them very similarly? And then, I -- it was followed by my talk on "Why are siblings so different from a genetic perspective?" So, this sparked our relationship, which led to a true marriage of nature and nurture.

[laughter]

So, our -- what we're trying to say today is genetics is much more important than parents know. Parents don't have as much control as they think they do. So, what we're suggesting is to liberate parents from the shackles of this burden of the nurture assumption, making them feel responsible for the way their children turned out. So, please join our free parents movement, and click on the blue icon, showing that you're in the favor of the motion, that parenting is overrated. Thank you.

[applause]

John Donovan:
So, thank you, Robert Plomin.

[applause]

And that's the resolution: parenting is overrated. Here to make her closing statement against the resolution is psychology professor at the University of Texas, Paige Harden.

01:10:02

Paige Harden:
So, last year, my 6-year-old broke his arm. He fell off a play structure and hyper-extended, and he snapped his humerus in half. And we spent the night in the hospital because he had to have surgery, with pins through his arm. And the whole night, I had one thought over and over again, which was, "Thank God we have insurance." So, my son has access to the healthcare system through his allegedly overrated parents, because I have employer-provided insurance. And that makes my son different from 800,000 uninsured kids in Texas, the largest number of uninsured kids in the United States. So, our opponents like to say that parenting matters, but it doesn't make a difference, and that, in fact, it's DNA that is the major systematic force in shaping people's life outcomes.

We've talked a lot about parenting, but I want to talk about how troubling I find the idea that DNA is the only or the major systematic force in people's lives.

01:11:06

Health care is a system, and it's a systematic force for people's lives. Political systems are a system; they're a systematic force in people's lives. Economics is a systematic force in people's lives; structural racism is a systematic force in people's lives. Injustice is a systematic force in people's lives. So, I've argued with Robert and Nancy about the scientific points in this, but I also want to close by thinking that I think that declaring DNA to be the only major systematic force in people's lives isn't only just scientifically inaccurate, but I think it's potentially dangerous in its complacency, and so I urge you to vote against their motion. Thank you.

[applause]

John Donovan:
Thank you, Paige Harden. And now, to make her closing statement in support of the resolution, professor of psychology and director of the Twin Study Center at California State University-Fullerton, Nancy Segal.

Nancy Segal:

I want to close with three stories about separated twins, virtual twins, and reared-apart triplets.

01:12:05

First story, and let me point out that these are not just pretty or entertaining stories; these are the hard scientific data behind the research my colleague Dr. Plovin and I presented tonight. The first story is that I studied a set of British twins raised apart who met for the first time when they were 30. One lived in an educationally rich home; the other did not. But the second twin found that she loved to read, got herself a library card, and visited her local library often. And when the twins met, they discovered they were the lovers of the same books, same historical novels by Catherine Cook, and when we compared their IQ scores, they were only points apart. The second twin exemplified what we call active gene environment correlation, the actual crafting of environment comparable with who you are. Second story. I studied a set of virtual twins -- the same age; unrelated partners -- who were so twin-like, and their father said to me, "You know, Dr. Segal, I expected them to be somewhat different, but not like night and day."

01:13:10

Third story. I think that most of you are familiar with the recent documentary film Three Identical Strangers; some of you may have seen it. I studied those triplets at the University of Minnesota, and I'm writing a book about the study that is behind that film. One of the triplets, Robert, said to us, "Our parents are very different, and we're very much alike in ways that's nothing to do with our parents." I say to you, you do not bring up your children; they bring you up. Twin and adoption studies have showed us that genetic influences affect children who in turn affect their parents. If we challenged you to think more deeply about that concept, please vote for the motion tonight. I thank you very much.

[applause]

John Donovan:

Thank you, Nancy Segal. And our final speaker, speaking against the resolution, author and parenting expert Annie Pleshette Murphy.

01:14:06

Ann Pleshette Murphy:

So, when I was a child the field of psychology was rife with theories that blamed parents -- really blamed mothers -- for a host of psychological problems in their children. You know, castrating mothers produce neurotic sons; refrigerator mothers produce autistic children. So, it's a relief to learn that most psychological traits have a very significant genetic underpinning, but tonight you have heard the flip side of the blame game coin. Robert and Nancy assert that parenting is overrated and really doesn't matter very

much. Well, dismissing the huge role that parents play in their children's lives is as pernicious as blaming them.

In fact, I think it's downright dangerous, and here's why. If you buy the argument that parenting is overrated, why would you want to invest in quality childcare? Why should we give parents paid maternity or paternity leave to bond with their babies? Why should we fix our broken foster care system even if 80 percent of the inmates in our prison have spent time in foster care?

01:15:08

In fact, why should we invest in any social programs that help make parents' lives a little easier if what they do really doesn't make much difference? Now, I'm sure Robert and Nancy are rolling their eyes and saying, "Well, that's not what we're advocating," and they may be the socially progressive people in this room other than my brother-in-law Jack, who's sitting there.

[laughter]

But I will say this: they are providing live ammunition to very powerful people who would like nothing more than the science to provide cover for their campaigns to cut funding to essential social programs, at a time when challenged families need all the help they can get. Frankly, all parents need all the help they can get. I mean, to be told that parenting is overrated is the last thing they need. Just try telling that to anybody in this room who has had to soothe, feed, diaper, dress, bathe, entertain, console, coach, discipline, defend the people they love more than life itself -- their children.

01:16:05

So, parenting, if anything, is seriously underrated, and I urge you to oppose this motion.

[applause]

John Donovan:

Thank you, Ann Pleshette Murphy. And that concludes our closing statements. And now it's time to learn which side you feel has argued most persuasively. We want to ask you, again, to go to your mobile devices and vote for the second time, and I want to remind you -- especially people who are new to our debates -- that we determine -- we name as our victor the team whose numbers have moved up the most, in percentage point terms, between the first and the second vote. So, it's not the absolute vote; it's the difference between the first and the second vote.

While you're doing that, I wanted to say that I found this, as a layperson, very accessible and really damn interesting. And I also appreciated that, throughout this debate, you actually demonstrated a respect for each other, and you kept it civil.

01:17:02

And I think there are some very, you know, deep philosophical differences, in terms of implications and policies, but -- which, you know, you explored to some degree, but without getting angry at each other. And I want to congratulate you for doing it that way, because it's so rare these days. So, thank you so much for the way that you all did this.

[applause]

I wanted to ask our debaters -- I'm just curious, a little bit, about -- I don't want to use the term "brave new world," but let's talk about new world. Let's talk about the implications of the kinds of things that may become possible. And to -- it's something -- like, this is not part of the competition anymore. But I'm just curious if each of you could take 30 to 40 seconds -- and I know that you can't, but -- that you'll try to do 30, 40 seconds on the question of -- what would parenting look like if people actually deployed this information --

Robert Plomin:

Yes.

John Donovan:

-- that you're saying is available -- Robert? What would parenting become?

01:18:01

You alluded to it a little bit. "Hands off, you can relax." But what would parenting become?

Robert Plomin:

Yeah. Well, I share Annie's concern about the fact that parents will use this information. As Nancy said, parents want to know everything they can about their kids. And it's hard to let them know that these are only probabilistic estimates. A genetic risk for alcoholism doesn't mean you're going to become alcoholic; it just means you're more likely, if you drink a lot of alcohol. So, the thing is, parents are actually doing it now. And part of the reason I wrote "Blueprint" is because I want to raise this discussion -- not because I agree completely with Annie -- but these are explosive issues. I mean, it has to be said, 10 years ago, when people starting 23&Me they thought, you know, "Wow, this shouldn't happen. It should be controlled." But parents are now doing that with their children. So, we really need to have this discussion.

John Donovan:

So, Annie, you heard some agreement, actually, with some of your concerns.

Ann Pleshette Murphy:

Yeah. I mean, I agree. I think that, you know, you've asked this, about how it will change parenting. But it is already having an effect -- a potential effect -- on certain policy. I mean, you know, Robert met with Michael Gove [spelled phonetically], who

has been Secretary of Education in the U.K., and Dominic Cummings [spelled phonetically] wrote a 250-page report basically saying, "We should educate the best and forget the rest" in the U.K.

01:19:12

And you know, this was because, on the basis of DNA data, we could say who was going to make it in the U.K. -- it's the GS -- GCSEs; it's like the SATs. You know, and you could establish very little on that little Rupert was never going to make it. So, you know, cut your losses. Why should we invest in future training? This is, to me, what's really, really --

John Donovan:
Okay.

Ann Pleshette Murphy:
-- seriously --

John Donovan:
But is Robert -- endorsing that point of view at all, are you? Or are you?

Robert Plomin:
I would just say, there's no necessary policy implications. So, you can have a right-wing view -- educate the best, forget the rest -- you could have a left-wing view -- the Finnish model, which says, "Identify kids who are going to have problems. Put as much resources as you need at that lower end to bring everybody up to minimal levels of literacy and numeracy." So, policy -- it depends on values, and that isn't all that much related to facts, I find.

John Donovan:
Paige, and then I want to give Nancy the last word on this.

01:20:01

Paige Harden:
I think there's a really important clarification point that needs to be made about --

John Donovan:
And I'm -- seriously, something you can do in 20 seconds?

Paige Harden:
Yes, about what genetic information is actually available. We talk about it like it's test for strep throat or a pregnancy test, like it's diagnostic, but, in fact, it is nowhere near that good. We would never accept a pregnancy test that said, "You have between a 14 and 98 percent chance of being pregnant" --

[laughter]

-- and that's exactly where our polygenic scores are right now, so we should stop talking about them as if they're definitively diagnostic.

John Donovan:
Nancy?

Nancy Segal:

I think that new ideas are often difficult to accept, and science moves forward, it doesn't move backwards, so we're not going to get to a time when genetics doesn't play an increasingly important role in all of our lives. I think the main thing is to educate the public on what the limits and expectations are, and to really hit that home. I think that education about this new technology is the most important thing, because I know that parents want to know everything they can about their children.

John Donovan:

Okay, I now have the results. Remember, the resolution is this, Parenting is Overrated.

01:21:01

Remember, we had you vote before you heard the arguments and again after you heard the arguments, and we're going to name as our victor the team whose numbers have moved up the most in percentage point terms.

So, here are the results. On the first vote, Parenting is Overrated, 27 percent agreed with the resolution; 52 percent were against; 21 percent were undecided. Again, it's going to be the difference between this and -- that vote and the one I'm about to announce to declare our winner. In the second vote, the team arguing for the resolution Parenting is Overrated -- their first vote was 27 percent -- their second vote was 32 percent; they picked up five percentage points, which is now the number to beat. The team against the resolution; their first vote was 52 percent. Their second vote was 59 percent; they pulled up seven percentage points. That means the team arguing the resolution is our winner on the resolution Parenting is Overrated.

[applause]

Our congratulations to them. Thank you from me, John Donovan, and Intelligence Squared U.S. We'll see you next time. Thank you, everybody.

[end of transcript]

This is a rough transcript. Please excuse any errors.