

NATIONAL PRESS CLUB HEADLINERS BREAKFAST WITH WALTER ISAACSON

SUBJECT: ISAACSON'S NEW BOOK, *LEONARDO DA VINCI*

MODERATOR: JEFF BALLOU, 110TH PRESIDENT OF THE NATIONAL PRESS CLUB

LOCATION: NATIONAL PRESS CLUB HOLEMAN LOUNGE, WASHINGTON, D.C.

TIME: 8:30 A.M.

DATE: MONDAY, DECEMBER 18, 2017

(C) COPYRIGHT 2008, NATIONAL PRESS CLUB, 529 14TH STREET, WASHINGTON, DC - 20045, USA. ALL RIGHTS RESERVED. ANY REPRODUCTION, REDISTRIBUTION OR RETRANSMISSION IS EXPRESSLY PROHIBITED.

UNAUTHORIZED REPRODUCTION, REDISTRIBUTION OR RETRANSMISSION CONSTITUTES A MISAPPROPRIATION UNDER APPLICABLE UNFAIR COMPETITION LAW, AND THE NATIONAL PRESS CLUB RESERVES THE RIGHT TO PURSUE ALL REMEDIES AVAILABLE TO IT IN RESPECT TO SUCH MISAPPROPRIATION.

FOR INFORMATION ON BECOMING A MEMBER OF THE NATIONAL PRESS CLUB, PLEASE CALL 202-662-7505.

JEFF BALLOU: [sounds gavel] Good morning, everybody. I'm sure that gavel woke you up if you weren't awake already. The last time I'll use that in this setting. Welcome to the National Press Club, where we have the trademark motto, the world's leading professional organization for journalists. My name is Jeff Ballou. I'm News Editor for the Americas with Al Jazeera Media Network, and the 110th president of the National Press Club.

First of all, I'd like for you-- I'm sure everybody in the room has some sort of electronic device, I know I have in my pocket-- now's the time to silence it. Notice, I did not say turn it off because we are in the 21st century and we encourage Tweeting. So, people live Tweet our events here at the club all of the time now. And so if you want to Tweet, use our handle, which is @PressClubDC, using the hashtag Headliners. That's #Headliners, and if you want to Tweet something nice and hopefully not something not so nice, me, I'm at NPCPresident.

Before we begin our conversation, a few thank yous, and especially now I think-- Betsy, this is my last one before I step down? Yes, so as this is my last as President before my picture moves from one side of the wall to the other, I want to thank a few folks. And if you're in the room, and even if you're not in the room, so this will be for posterity since this is on video, you can stand. First, Betsy Fischer Martin, who-- yes. (Applause) Betsy is the co-chair of our Headliners team. We took our famous, what was known then since 1932 as the Speakers Series and we reorganized it. And it was a very challenging but very rewarding reorganization. Betsy and her co-chair, Lisa Matthews, have done incredible work in trying to make sure our program, our Headliners program, keeps pace with the times in the way the

market has now changed since we were founded in 1908. And Lisa Matthews is at the Associated Press.

Jamie Horowitz, Lori Russo, Heather Forsgren Weaver, April Turner, Marc Scheff, Jr., who all have worked on this particular Headliners program today, our club staff liaison, Lindsay Underwood, our staff member Laura Coker, who manages the office of the club President, and our staff Executive Director, Bill McCarron. I want to thank you all. You've been an incredible support to the 110th administration all year long. And when January 19th comes, and I'm ready for a nap, I will thank you all.

I also see so many other folks in the room who have volunteered over the past several months. I see Joe, I see Lorna, I see all the folks that you-- thank you very, very much for your hard work. (Applause) You know, I see Kevin, who delivers Headliners seemingly-- seems like every time I look at an email, "I got another one, Jeff."

A quick note before we get into our program about freedom of the press, something I've been talking about all year long. And I want to focus on a particular case that we've been trying to highlight. We have an award we give out every year during our Fourth Estate award named after a very famous leader in club history, John Aubuchon, and it's for freedom of the press. One of our recipients was a Mexican journalist named Emilio Gutierrez Soto, who a little over a decade ago fled from Mexico because he reported on corruption and drugs in the Mexican military and the government. And he and his son, Oscar, fled to the States pretty much under the pain of death where he's been trying to work and find asylum while the current administration see fit to try to deport him back to Mexico shortly after we gave him his award in October.

To us, this is certain death for him and his son. And that's unacceptable for us. We have launched a very large efforts, you've probably seen editorials in the *Post* by now, and interviews with his lawyer this weekend on CNN's Reliable Sources. This is a full court press and we're not shy about it to help grant Emilio asylum. He deserves it. Journalism should not be a crime. This is not something of an immigration issue for us, this is an issue of protecting a free and independent press.

So, there is a petition on Change.org which we encourage you to sign. Please go there and if you're Tweeting, it's #FreeEmilio to make sure that we have that, keep him here, and his son, safe.

So onto the order of the day. We have a small book to talk about today. Our specialist guest this morning is best-selling author, Walter Isaacson. He will actually give a small presentation and he and I will chat up for a few minutes with questions and then we'll open it up to all of you. And if you have not previously purchased your book, we encourage you to do so. Proceeds from this morning's event benefits the National Press Club Journalism Institute, the very institute I just spoke about that helped give out the award to Emilio Gutierrez Soto. So, as you can tell, it's for a very good cause.

So as we further the education of working journalists, increase diversity in the profession, provide scholarships to future journalists and, of course, protecting press freedom at home and abroad.

Now, this morning we're going to have a really wonderfully intellectual, as I was telling Walter, this is an intellectual tour de force. I mean, it's something. Walter is now sort of the style-- the biographer of geniuses; Ben Franklin, Steve Jobs, Einstein. And this is sort of-- if you call it the capstone of your genius series, about Leonardo da Vinci. I don't want to get into the details, because that'll spoil it. We'll get into his presentation and our discussion. But Walter, and you've probably noticed in the last few Headliners, are starting to head in a Louisiana direction, and I blame that on Betsy, who's from there, and Walter is as well because he has ties to Tulane, where he teaches.

Walter has held many hats over times. He was Chair of CNN, he worked at the *Times Picayune*, he joined *Time Magazine* and he was the magazine's 14th editor in 1996. He headed the Aspen Institute for 14 years, and all these wonderful things has now encouraged him to head back to his lovely home town of New Orleans. He's a Harvard graduate, Pembroke Scholar at Oxford, where he's a Rhodes Scholar. And with that, please welcome Walter Isaacson. (Applause)

WALTER ISAACSON: Thank you very much. It's great to be back at the Press Club. And as Jeff said, this is sort of the capstone of a series of books I've written about people who were creative, and geniuses. I didn't really plan to go on this path when I came here 37 years ago. I was at *Time Magazine*'s Washington bureau and a friend of mine and I, Evan Thomas, decided we were going to write a book about *The Wise Men*, it was called, who helped do American foreign policy. When we finished that, it ended with Vietnam, so I thought well, I'll try to do Vietnam through Henry Kissinger. After doing Kissinger, decided I wanted to do somebody who'd been dead for 250 years and picked Ben Franklin, because Ben Franklin had been somebody who was able to create a balance of power diplomacy and a realist approach to diplomacy when he was doing that game in Paris to try to get the French in on our side on the Revolution. And that was very much part of the realism that I tried to figure out when I was doing Henry Kissinger.

But one of the things I discovered about Franklin is he loved everything. He loved the way air swirled when he rode up and down the coast to form the U.S. Postal Service that helped him figure out the Gulf Stream. It helped him figure out ways, and then electricity and those electricity experiments were the most important science experiments of his time. So I realized that combining science and the humanities was just key to his creativity. You see it in the editing of the Declaration or the balances, Newtonian balances, that he helped put into the Constitution.

And so at that point, there was sort of a theme, I realized, of the people I found the most creative, which is that they let their mind dance across different disciplines. They didn't silo themselves. They were sometimes unfocused, whether it be Ben Franklin, of course, Leonardo da Vinci. But by appreciating every pattern of nature, it helped them become more creative. And that was even true of Einstein. I took on Einstein because I realized that we had

become intimidated by science, that Jefferson and Franklin would have thought you were a philistine or Luddite if you didn't understand science at the time.

But after Einstein, it became a little intimidating, relativity and quantum uncertainty. And so I wanted to personalize him. And I discovered, among other things, that he loved music. And whenever he was stymied in his pursuit of the field equations of general relativity, he'd pull out his violin and play Mozart, which he said would reconnect him with the harmonies of the spheres.

After doing Franklin and then Einstein, I got a call from Steve Jobs and he said, "Do me next." (Laughter) And I said, "Well, let's wait 20 or 30 years until you retire." But then I realized he was sick and that was a great opportunity to see the most creative person of my day and generation and how he worked. And once again, when I went to the very first product presentation with him early on when he was doing the iPod, he ended it with a street intersection time that said the liberal arts and technology. And sometimes it said humanities and sciences. And he said if you stand at those intersections, that's where creativity occurs.

Well, the ultimate in that is Leonardo da Vinci. Now, Leonardo had the great good fortune to be born out of wedlock. And that meant he wasn't going to be a notary like his father, grandfather, great-grandfather and great-great grandfather. And so he becomes-- free to become a disciple of experiments, he said, or disciple of experience. This ability to just teach himself everything because he wasn't sent to the notarial school, which was the family business. And he just does wonderful experiments trying to find why the water in the streams of Vinci swirl when they past obstacles.

And he starts keeping notebooks, like why is the sky blue? How would you measure the sun? And my favorite, describe the tongue of the woodpecker. And you think, "Okay, here's a kid who's amazingly curious," and that's the first step to loving every discipline and seeing the patterns across nature.

And then I discovered that most people writing about him write about him with the 15 or so painting masterpieces as their foundation. But what was cool about Leonardo da Vinci was that he kept notebooks. He kept notebooks every day. I've started to walk around, as you should, with a notebook about the size of his and I just keep my notes there. Paper, it turns out, even in this digital age, is an amazingly good technology for the storage of information. After 500 years, I can look at one of his notebook pages, turn the pages. The operating system still works, it's still there.

And so I went page by page through his notebooks and realized how he connected his science, his anatomy, his art, his engineering. I'll just give one example there so you can see the notebook pages. He writes from right to left because he had to teach himself to write and he was left-handed and he didn't want to smudge the ink. He also loved theater, so he always has this theatrical character, the guy in the middle there who's sort of the craggy warrior. But you can see a tree growing into his torso because Leonardo as a young person had discovered what we now call Leonardo's law of branching, which is when branches come off of the trunk of the tree, the area of the cross section of the branches totals to that of the trunk.

It's also true, as Leonardo discovers, of our arteries and our veins. It's also true of rivers and swirls of tributaries of rivers. And there Leonardo in the upper left does the swirls of rivers and then compares it to a curl of hair and even a stab at the math, Fibonacci's equations that would describe it.

So over and over again, he's doing things and on every page he writes that list of questions he wants answered. Things like why does a bird wing flap up faster than it flaps down? Why do fish swim in water faster than birds in the air when water is heavier? All these things that we can try to make ourselves do, curiosity in our wonder years.

And so when he gets to Florence as a young kid, he's a wonderful misfit. He's illegitimate, he's gay, he's left-handed, he's a vegetarian for a while, he's distracted, he loves everything and has no specialty. And yet Florence then, in the 1470s, is an amazingly tolerant place. He's totally embraced as a young kid in Florence and has the good fortune to work for Andrea Verrocchio, one of the art workshops, but it wasn't just an art workshop. Among other things Leonardo does is solder the copper ball they put on Brunelleschi's dome in Florence's cathedral. So he's mixing art and engineering.

And you can just see in each of the engineering things he does how he combines it with art and imagination. That's a key to how we're going to survive, we humans, as opposed to the machines, in the digital age. For example, one of the things he did and earned his salary was pageants and plays because the Medici family, Lorenzo de Medici, rules of Florence, they put on pageants and plays each night. There were no movies and TV, so Leonardo was in charge of the scenery, but also the stage sets and the mechanisms that moved it. And even things like that helicopter we say Leonardo invented, that aerial screw, originally comes from a play to bring the angels down from the rafters.

But one other key to Leonardo da Vinci's creativity was he blurred the distinction between fantasy and reality. If he did that screw for a play, that aerial screw, he then spent the next 20, 30 years trying to build flying machines and seeing how they worked. He did anatomy, first to help his art. You can see in St. Jerome in the Wilderness, one of his young paintings, how he gets his neck muscles wrong. But he holds it for years until he can dissect the human neck and then he goes back and gets the neck muscles right.

But soon, he's doing it for curiosity for its own sake. It's like the tongue of the woodpecker. You don't need to know that to paint a bird. You don't need to know that to do flying machines. You need to know it if you're Leonardo da Vinci and just curious about everything.

So you see that reflected in everything he does. It even gets reflected in his art. Take, for example, the most famous drawing ever, Vitruvian Man. Leonardo does that after he moves to Milan. He's run away from Florence at age 30, that unnerving milestone of turning 30, and he's written one of the great job application letters in history. Because he's left some paintings unfinished in Florence, his father had been the notary for the contracts, so we assume they were having a bit of a falling out. And his job application letter says-- it's 11

paragraphs and it tells all the things he can do in engineering and science. He said, "I can build bridges. I can divert the course of waters. I can make rivers move. I can build great castles. I can make weapons of war." And then only in the 11th paragraph does he say, "I can also paint as well as any person."

So he ends up becoming an artist and engineer to the Duke of Milan. And among the things they're doing is designing churches. And this is the consuming passion of his life, is to understand all of creation including how we fit into it. And so he reads Vitruvius's ancient book, this ancient Roman book on architecture, that says, "When you're designing a church, it's to reflect the proportions of a human."

And so Leonardo does 230 measurements of the human body and he and three friends go to Pavia where the manuscript is, and they all decide to illustrate the manuscript. And Leonardo's drawing there is unlike the ones of all of his friends. It is anatomically perfect. He gets every measurement right from the navel to the breast bone, he's done all these measurements. But it's also mathematically interesting because of Vitruvius had said the navel should be at the center of the Earth and the genitals should be at the center of creation. And Leonardo puts the base of the circle on the base of the square but makes the circle go up higher so that the navel is right in the center of the circle, the genitals are in the center of the square.

And in so doing, he has helped solve, or helped approach, an ancient puzzle; which is squaring the circle. How do you make a square the exact same size as a circle using only a ruler and a protractor? But it's also a work of great beauty, unnecessary beauty. And as you stare at the face and there's cross hatching and all, you realize it's a self portrait. It's Leonardo standing there naked in creation and in the cosmos saying, "How do I fit in?"

He does it in all of his art, he tries to capture that how do we fit in. With The Last Supper, it's very theatrical. The walls go in at an accelerated rate. Even though the mathematical perspective with the vanishing point of Jesus's forehead is exactly right, and yet it's like a stage set with the scenery coming in. And it's a stage narrative because it's not just a moment. You can imagine it. You look at it and you see a narrative sequence. Jesus saying, "One of you shall betray me." Leonardo loved ripples and so you see the sound rippling out because he has discovered that sound ripples like water. So it ripples to the first group of apostles. Get to the second part of the biblical passages, which is, "Is it I, Lord, am I the one?" Then it ripples to the wall and bounces back and you can almost hear Jesus saying, "He that dippith his hand." And there's Judas dipping his hand and recoiling.

And then finally as it bounces back to the center, Jesus is reaching for the bread and the wine and the institution of the Eucharist. And even the way the light plays, it's a little bit odd because the light's not coming from those windows back there. But when you walk into the room and see it, there's a real window up there on the wall, the only window in the dining hall. And so it's sending the light the way it does there.

This is the famous painting that sold for \$450 million last month. And one of the odd things about it, the only thing I'll say about it, is that the hand is very sharp. Leonardo, in his

studies of optics, realized we don't see sharp lines in nature. When I'm looking at any of you all, the edges of your face aren't as if they're a sharp ink line because I have two eyes and large retina and I see things with a slight blur. So he does that, except for the blessing hand of Jesus, which is sharp. And why is that? He was writing in his notebooks at the time, in 1503, I'm looking at the treatise he's writing on perspective, and he says, besides distance perspective and artificial perspective like in The Last Supper, he describes acuity perspective, a sharpness perspective. He says, "Something is exactly at arm's length from you, that's where your eyes focus and it becomes sharp."

And so by doing it that way, he makes it look like the hand of Jesus is actually coming out of the panel and almost touching us as he blesses us. And so that's how another thing of his science connecting to his art, is that he's able to make something look three dimensional on a two dimensional panel.

It all culminates, of course, with the greatest painting ever done, and it is for Leonardo a combination of art, science, philosophy, theology. Other people have written about Leonardo, including the great Kenneth Clark of the 20th century, say it's a shame that he squandered so much time worrying about math and anatomy and flying machines and engineering and geology, because if he had spent more time, he could have finished more paintings.

That's probably true, but he would not have painted the Mona Lisa. As with every painting, including Ginevra de' Benci, which you can go eight blocks and see because it's in the National Gallery, it has the metaphor of the ancient eons of time, those mountains in the background, and the river curling and swirling just like the streams of Vinci, doing the eddies of water he so loved, and curling until it curls right into the roads of human civilization and then into the veins of the human, as if it connects.

But also, it's something he took 16 years doing, layer after layer of brushstroke. And just to take the lips, for example, he dissected every muscle and every nerve in the human face, 20 pages of drawings showing each one that touches the lips. He discovers things that are interesting, like if you purse your lips, you can make it exactly half the size of your lips at rest, but can't go any further. And he shows why. Or that your bottom lip is a muscle, but your top lip isn't. So you can pout and purse your bottom lip, or both lips, but you can't do your top lip alone. I see somebody trying it there. Don't do it, wait until you get home, it's not a pretty sight.

He also discovers that at the center of our retina, we see black and white perfectly, detail. But at the edges of the retina, we see colors and shadow. So when he does those lips, for 16 years he's painting layer after layer so that the light goes in and bounces back from different layers depending on how you're looking at it. But at the very corners of the lip, he does a black and white detail that actually turn downward slightly, if you look really closely.

And I've got to give a shout out to Simon & Schuster. You talk about the book being a bit heavy, we asked that it be art paper, high quality, 60 pound coated art paper throughout, like you sometimes see in the middle of the books when they use junky paper for the rest of

the book. And to keep it lower than the price of the average biography, but put art paper throughout so you can look at each detail, the ripples around the ankles of Jesus in the Baptism of Christ, the first thing he paints, to the tiniest details on the lips of the Mona Lisa, one of the last things he paints.

So the tiny details turn down, but the shadows and colors turn up so it becomes an interactive smile. And that's the ultimate thing he's trying to do, which is to show inner emotion and how it's reflected in outward expressions. And he's discovered, after a long life of studying everything, that our emotions are changeable and they're mysterious. So every time you look at her, she has a different expression a bit, maybe feels a different emotion. And your emotion changes and your vantage changes. So if you're staring directly at her smile, it disappears on you for a moment, it's elusive, it's interactive. It's like a virtual reality. But as you then react and turn slightly, the smile lights back on again because you're seeing the colors and shadows as it turns up.

And so through the study of everything from the philosophy of how we're connected to creation, to the optics of the retina of the human eye, it all comes together, in my mind, to make him the most creative genius in history. Thank you all, and I'll look forward to--
(Applause)

JEFF BALLOU: Couple of quick housekeeping things in case you came in a little late in the presentation. Don't forget to silence your cell phones and other electronic devices. You can definitely Tweet at PressClubDC using the hashtag Headliners. And I'll signal this at the end of our Q&A, when we're doing having our Q&A here, we're going to open up here and I'll reclaim the time to us. And before our last question, I'll remind you to line up, if you haven't stepped up to buy your book, now's a good time to do it. And we'll line you up here on the far wall and Walter will sign your books.

WALTER ISAACSON: And save you all your Christmas shopping.

JEFF BALLOU: Yes, indeed. One of the things that struck me as I was reading through the book and you talk about your research, what was something that really jumped out at you that you didn't already know about Leonardo?

WALTER ISAACSON: I think the fact that he was so into theater, especially during his 20s. He loved making the costumes and the pageants and plays, which helps him blur the line between fantasy and reality, but helps him also understand that engineering is an art and art is engineering. And so if you're going to make scenery, you're going to make things move, these are like Super Bowl halftime shows. These aren't "Waiting for Godot" with just two people standing on stage.

So, understanding how that theatricality-- and how it gets reflected in things like The Last Supper, but also in his notebooks, how he goes around town just looking at people's expression, trying to figure out what their inner emotions are based on their expression, and jots it in his notebook.

JEFF BALLOU: One of the things I noticed that you map out for the reader that you looked at his notebooks, or as you mentioned, over 7,000 of them, and other resources to correct some of the record. What were some of the things that were common misperceptions or fact errors out there about Leonardo that we didn't know before you set finger to computer?

WALTER ISAACSON: I think that if you want to take his art, it's hard to understand the depth of his art, to look at the Mona Lisa, and to realize how much science went into it. When you look at page after page of the dissection of the human face, you realize, oh, this is why it was different. This is why she's showing this emotion. Likewise, understanding optics.

I also think that the notebooks help you understand how everything connects. But even more importantly, they show how things don't sometimes connect. In other words, Leonardo is doing neck muscles to get St. Jerome right. And then he does his spinal cord, he does every joint in the spinal cord. He does exactly how the spinal cord flexes. You don't need that to do St. Jerome. I mean, he's skeletal in the wilderness. But by this point, he's dissecting the human heart and showing how the swirls of blood close the heart valve.

He has started down a path of curiosity for its own sake. And so it's not curiosity that's just purely useful, it's tongue of the woodpecker curiosity where it enriches your life and deepens your art, but you aren't just doing it for a purpose driven, "I need to know this so I'm going to look this up or study this in order to apply it." And I think that's the ultimate lesson of us as a species.

I was just reading *Sapiens*, I'm probably the last person to read it, but the thing that distinguishes us is we explore and discover and are curious, sometimes just because we're human, not because we need to know it in order to cross the ocean or whatever we're trying to do.

JEFF BALLOU: Was that sense of perfection in Leonardo, this phrase, the perfect is often the enemy of the good, did that apply to him because he was out of wedlock, because he was denied formal education? Was that sense of drive, that sense of fiery obsessive intellectual curiosity, was that-- you call him beautifully distracted. He's sort of all over the place, but somehow it all came together, as you mentioned earlier.

WALTER ISAACSON: Well, the great flaw in Leonardo that some point out is that he doesn't finish a lot of his paintings. He gets distracted. He only finishes 15 or so painting masterpieces. He leaves Adoration of the Magi unfinished, St. Jerome unfinished, the Battle of Anghiari, which he's doing for the Florence Council Hall, unfinished.

And part of it is because he is a perfectionist. It's not like he just abandons them, he holds on to St. Jerome for more than 20, 30 years, or leaves it with Vespucci, Amerigo Vespucci's cousin's family, goes back, does dissections and then tries to make it better. And it reminded me of Steve Jobs, who in 1983 is doing the original McIntosh. And he's got every curve right, the icons are-- but then he looks at the circuit board inside and he said,

“Well, this circuit board stinks.” He actually used a stronger word. And he says, “It's not beautiful.” They say, “Well, nobody will see it, nobody will ever know. It's in a sealed case.” He said, “Yes, but you'll know.” And they hold up shipping the Mac for a few months until they get the circuit board beautiful.

Leonardo was that way. He often let the perfect be the enemy of the good. Now, Steve Jobs, when he comes back to Apple the second time, he's always had this perfectionist streak, and says real artists sign their work. They gave him a sign that said, “Real Artists Ship,” which means occasionally you get the product out the door and wait for version 2.0 to perfect it. Leonardo never had that second maxim. I mean, this is why he never delivers the Mona Lisa up there to that poor cloth merchant in Florence who commissioned it in 1503, because in 1519, Leonardo's in France now where the King of France is his patron and he's still working on it, still trying to perfect it. But that's why it's the Mona Lisa.

JEFF BALLOU: You talked about Steve Jobs. Is that a trait of that sense of perfection in Franklin, in Einstein? I think about you talk about the motherboard story about Steve Jobs. Reminds me of a story about Duke Ellington. He was once back stage, the band was warmed up and he was a bit late for coming out to do his number. And he was ironing the inside of his cuffs. And one of his band mates says, “Hurry up, Duke. Get out here, we have to get going. Nobody's ever going to see the inside of your cuffs.” He stops, puts the iron up, he looks at his band mate, he says, “I will.” Yeah, right.

WALTER ISAACSON: That's what Steve Jobs said. You will know about the circuit board. And it was something Steve Jobs learned from his father, which is when Steve was like six or seven years old they were building a fence around the back of his house. And his father said, “We have to make the back of this fence,” the one that faced the weeds and forest, “as pretty as the front.” And Steve said, “Nobody'll see it. Nobody'll know.” And his father said, “Yes, but you will know.”

Now, that's not just a perfectionism, that's a passion for craftsmanship and getting things right. And nowadays, we're driven sometimes by profit, we're sometimes driven by different motives. But a true genius is mainly driven by aiming for perfection. Yeah, you could make more money if you deliver the Mona Lisa on time or if you deliver the Mac on time. But then again, you don't create Apple and you don't become the world's most creative genius. It's not a good recipe for our everyday lives. You and I learned, I learned at the afternoon newspaper in New Orleans, there was a deadline, you got the story in--

JEFF BALLOU: Or you got fired.

WALTER ISAACSON: Yeah. But every now and then, you hold something up. And even with this book, it's like let's hold it up a while. Let's put it on perfect paper, let's get the color corrections right, let's put the pictures right next to the text so that when you get to the part where we're talking about the smile of the Mona Lisa, there's a close-up of the smile. And every now and then you should-- not that my book is a perfect word-- but it's like all right, I'm going to try to be like Leonardo and say what else can we do to make it better?

JEFF BALLOU: You delve into his personal story quite a bit, and you talk about-- I think you catch the detail bug, from what I was reading, yourself. It's like, no, stop calling him da Vinci, it's Leonardo. And da Vinci reflects the town where he was from. And you talk about what's new, what I discovered-- you learn more about his mother. You learn more about-- you talk about all these different aspects to sort of give us a three dimensional picture of Leonardo. What, in that sort of part of the discovery, what sort of stood out to you about him, about Leonardo, as a person?

WALTER ISAACSON: I mean, we discover he's human. As I said, he was a misfit.

JEFF BALLOU: Well, he was vain, though.

WALTER ISAACSON: Yeah, we kind of knew he was this misfit, meaning the gay left-hander illegitimate kid who's accepted during a small period in which they have a very tolerant, diverse society in Florence, which is why the renaissance gets born there. But then you discover, as you said, that he's flawed. He gets math wrong, he has trouble learning Latin, that he's vain. He's really good looking, and if you look at Vitruvian Man, you say, "Okay, I get it. He's pretty good looking." He has long, curly blond hair. But one of the cool things is you go to the notebook page that I showed you, on the very bottom left here of the notebook page after describe the tongue of the woodpecker type questions, he has a recipe for boiling the husks of nuts in oil and he says it makes a tawny hair dye. And you realize, oh, he's now turning 30 and he's worried about going gray and dyeing his hair.

And so for a while I thought, wow, not delivering paintings, having trouble learning Latin, making math mistakes, being vain about his appearance, that sort of minimizes him in a way. One of the tales Leonardo tells in his notebook is about shadow looking really large, but as you get close to it, the person comes down to human size. And then allows, no, he's coming down to human size, that actually makes him better, more accessible.

I mean, I read about Einstein. There is no way anybody in this room, with all due respect, is ever going to try to become like Einstein in terms of applying tensor calculus to the curvature of space time or stuff like that. But Leonardo's human. He doesn't do math much better than any of us. He is self taught, but he just happens to be more curious and trains himself to be more observant. Or, I shouldn't say that because we're all extraordinarily curious and all extraordinarily observant when we're nine or ten years old. But then we outgrow our wonder years and people say, "Quit asking so many dumb questions and quit getting distracted."

JEFF BALLOU: He never did outgrow it.

WALTER ISAACSON: That's the point. He never outgrows his wonder years. So the fact that he is very human actually makes him somebody we can learn from better than Einstein.

JEFF BALLOU: I think before I-- now is the time to start lining up at that mic over there if you have a question and we'll get you in there. One question that's sort of a fun one,

popular culture. In the past several years, there have been many invocations of Leonardo, whether it is Dan Brown a little bit, whether--

WALTER ISAACSON: *Da Vinci Code*.

JEFF BALLOU: *Da Vinci Code*, the TV series, “Da Vinci’s Demons” on Starz, you name it, there's a lot. What do you attribute sort of this reengagement of da Vinci? I mean, of Leonardo.

WALTER ISAACSON: He's perfect from our-- well, you can call him da Vinci.

JEFF BALLOU: No, you were point blank about saying that's wrong.

WALTER ISAACSON: Well, actually, it was sort of wrong then, but it's right around that time that people in Italy start taking surnames and they tend to take the names, like da Vinci or da Giovanni, di Caprio, say, from Capri, and it becomes a surname. So had Leonardo's family gone on, it probably would have used it as a surname. The popular culture, first of all he's perfect for our time. Meaning we are at a period in history like the 1470s, where Gutenberg is doing his thing and Christopher Columbus is discovering things in which the connection of art and science and humanities and engineering add to creativity. So, we can relate to a Leonardo.

Secondly, he was so interested in everything that whether you're an anatomist or somebody who loves bird watching or loves hydraulics or loves art or sculpture, you'll love Leonardo.

And thirdly, there's a bit of a mystery to him. There's always that blur around the edges that he would have in the Mona Lisa and we have when we look at a Leonardo. But there's always new things to discover. We discover now Salvador Mundi, that picture, gets rediscovered. Who his mother is, the great Martin Kemp, a great Oxford don, and others going through-- this year going through archives. So there's always that sense of wonder that makes him accessible, too.

JEFF BALLOU: Questions?

WALTER ISAACSON: Quite a line there.

AUDIENCE: Hi, I'm a little nervous here. But I've been studying da Vinci also for a very long time and I came out with a book this year about Leonardo for teens and tweens.

WALTER ISAACSON: Cool.

AUDIENCE: And it's about bringing out the genius in kids, the creativity, the curiosity.

WALTER ISAACSON: Can I see it?

AUDIENCE: A copy for you.

WALTER ISAACSON: Great, I'd love to see it.

AUDIENCE: And I'm developing programs around it, which I would love to consult with you about some time. My card is in there also.

WALTER ISAACSON: Sure.

AUDIENCE: I have a very specific question based on your talk and your experience with Leonardo. And I don't know if you're familiar, I've just been-- stumbled upon this recently, but there's a Capriani painting, a portrait. It's owned by the National Gallery, it's not on display. And I've just been reading there are a few people who are saying that they think it's misattributed to Capriani, but it's really a Leonardo.

WALTER ISAACSON: Yeah, and you should get Rusty Powell, who's a wonderful curator, and David Allen Brown at the National Gallery, he's a Leonardo specialist there.

AUDIENCE: Oh, is he?

WALTER ISAACSON: And, of course, they have Ginevra da Benci.

AUDIENCE: I love Ginevra.

WALTER ISAACSON: The issue on Leonardo is even since I've written this book, and it's only been a few months, you get almost weekly somebody saying, "I've discovered an undiscovered Leonardo." And in my book, I describe the process that one then goes through. For example, we did discover-- we, not me, but I meant we-- people discovered in the past dozen years a San Sebastian drawing that had been lost. Obviously, Salvador Mundi, La Bella Principessa, which is a--

AUDIENCE: I love that story.

WALTER ISAACSON: And so that story is at great length in my book of how do you take-- this is a chalk drawing, so it's not a painting-- and figure out was it or was it not Leonardo? And he would love the way you do it. Because first of all, it's art. You have to have an eye and look at it. But then it's science. You have multispectral analysis, x-rays, ultraviolet. You also have historical analysis, like okay, let's look at the books he was illustrating at the time. And so it becomes a detective story to figure out is this really a Leonardo da Vinci?

So, I would suggest that anybody who thinks they have a Leonardo da Vinci--

AUDIENCE: Well, it's the National Gallery.

WALTER ISAACSON: Yeah, or a misattributed, I would suspect the National Gallery, with David Allen Brown and Rusty Powell, know how to do that process. But I would be cautious because, really, in any given month there are people who say, “Oh, I’ve got another copy of the Mona Lisa that somebody painted, or I’ve got--“ you know, all of these things.

AUDIENCE: Thank you.

AUDIENCE: Fantastic book, great program. Thank you very much. I was going to say for kids who are interested in STEM or STEAM, with the arts, are you going to have any plans to take this book and kind of disseminate it to children around the country, around the world?

WALTER ISAACSON: I don’t think we have this, *Edge of Yesterday*. Yeah, I think a couple things I would love to do eventually. One is his notebooks are not collected. I mean, that’s a bad thing and has a silver lining, which meant my wife and I, we had to go to see them in each place, different ones are like Florence, Venice, Milan, Paris, London.

JEFF BALLOU: That’s a real hardship tour.

WALTER ISAACSON: It was tough. Somebody had to do it. (Laughter) So I’d love to collect those.

AUDIENCE: Was there wine involved?

WALTER ISAACSON: So we could all even crowd source and put annotations on each notebook page. For children, there are just many good lessons. But one of them is don’t mess children up. They are interested in everything, and then we sort of force them to focus and specialize. And daydreaming, this is something Leonardo defends over and over again in his notebook, which is gather facts and then let it marinate and fantasize about it. So in some ways, what we have to teach our children is be more like children. Don’t listen to us.

JEFF BALLOU: Yes, ma’am?

AUDIENCE: Hi, sir. I was just curious how you do all your research. I mean, he’s been dead for a long time, like Benjamin Franklin, like how do you get new information?

WALTER ISAACSON: Yeah, the good thing about Benjamin Franklin, Albert Einstein, and Leonardo da Vinci, and why I partly picked them, is they did keep lots of notes. There’s 40 volumes of Franklin’s letters and notes at Yale, Princeton, Cal Tech and Hebrew University have Einstein papers, projects. And then we have Leonardo’s notebooks. So, Leonardo da Vinci had a saying, which is talking about himself always doing an experiment when he received wisdom, because this is the beginning of the scientific method, the enlightenment. He’s always being told, “Okay, here’s how the flood happened. It’s in the Bible.” And he’s like, “No, let me look at the layers of fossils, and I discovered trace fossils.” Meaning the traces of organisms when they were still alive. And he says, “This can’t be the

way the flood happened because boom, boom, boom.” Or all these other things, friction, size of moon-- the notion of why the dark new moon is shining as being the reflection of the light from the Earth.

These are all scientific things he discovers. So watching him make those discoveries is sort of the exciting thing. By being able to have all of his documents and notebooks, we can see a mind dancing with nature and being infinitely curious, as I said, sometimes just for its own sake.

AUDIENCE: First of all, I want to thank you for the wonderful work you've done to develop this book about Leonardo, not da Vinci. I learned that, and I want to say it right. I've been wondering for a lot of time, like many people here, what exactly is a genius? As a former psychology major, it never was clear to me. But since you spent so much time and invested so much of your life in trying to fathom what is a genius, I wonder what insights you have as to what is in common among those people who are geniuses?

WALTER ISAACSON: Well, I must say that if it were a really simple answer, you wouldn't have to write 450 page books. (Laughter) I believe there are people who write these seven easy ways to be a genius, or seven simple steps to being creative or whatever. I think it's best to learn from somebody's life and that's why I did a Steve Jobs or an Einstein or a Leonardo da Vinci. But there is a pattern. In the last chapter of my book, I almost oversimplify it a bit. I say here's 21 lessons to learn, that I've learned not just from Leonardo da Vinci, but from Franklin, Einstein, Steve Jobs and others, about the need, as I said at the very beginning of this talk, to be curious about everything. You know, to just see the wonderful patterns of nature. The swirls and curls of hair and air and water fascinated everybody from Leonardo da Vinci to Ben Franklin so they get to paint the Mona Lisa, discover the Gulf Stream, figure out how the aortic valve worked, all these patterns of nature. Be very observant.

But the main thing is apply imagination. That is sort of applied curiosity, which is when you're doing something, even a costume, have a beautiful wing of a bird, but also have the wing of a dragon and the wing of an angel that you've imagined. And so that ability to mix imagination with knowledge makes you not just smart, but also creative.

Now for me, the essence of genius is creativity; meaning to be able to envision things others have not yet been able to envision. There's probably other forms of genius, meaning a certain focused genius of somebody who is a-- Mozart was a genius, but mainly in one field, music. The type of genius I like is somebody who can see patterns across nature and apply them to understand how to imagine things as yet unseen.

JEFF BALLOU: Yes, ma'am?

AUDIENCE: Yes, I was just curious that you haven't mentioned spirituality at all, and I was wondering how that played into Leonardo's work? I think I read somewhere, I don't know if it's true, Einstein was very into metaphysics and sort of connected somehow. And I was just wondering if that impacted Leonardo.

WALTER ISAACSON: Well, I have a whole chapter in the Einstein book of Einstein and God, and his understanding of what he called the spirit manifest in the laws of the universe, a spirit in the face of which he said we have to be humbled and awed. And I think likely Leonardo, and to some extent like Ben Franklin, it was not so much a focus on a personal god you can pray to to break the laws of physics and have, I don't know, the Redskins win or something. (Laughter)

JEFF BALLOU: It didn't work out for them, did it?

WALTER ISAACSON: A creator whose spirit is manifest in all of the laws and beauty of nature that are immutable. I do work some on Leonardo da Vinci's spirituality and religious beliefs. He was skeptical, as somebody who believed in experience and therefore questioned church teachings. But that did not make him less spiritual. For example, as I said, he doesn't believe the story of the deluge, the flood in the Bible because he studied layers of sedimentation and fossils. He does, if you open up the cover of my book, you see the most beautiful connection of art and science on the frontispiece meaning a sort of yeah, right there, you're looking at it, hold it up, the fetus in the womb. And he's saying, "This is creation. How do we fit into creation?" And he's even asking, "Does the fetus have a soul? Is a fetus able to breathe on its own? Is it viable outside of the womb?" Questions we're asking now. So he doesn't use spirituality to stop himself from questioning, he uses it to keep questioning.

And so I think the spirituality is how are we connected to the beauty of creation, whether it's Einstein or Leonardo da Vinci. I wanted to go to Hebrew University to see the last page of Einstein's notebooks, and there on his dying day in Princeton Hospital, he's doing line after line of equations in which he's still trying to get a unified theory, unified field theory connecting gravity and electromagnetism, or quantum theory and relativity.

He knows he's not going to do it. By the way, we still haven't done it. But you know that to his dying moment, he was trying to get us one step closer to the spirit manifest in the laws of the universe. And on Leonardo da Vinci's last notebook page, he's in France and his little manor house next to the king. And he's upstairs, his heart is failing. And his last notebook page, he's still trying to do something called squaring the circle, which is to make a circle the exact same size as a square using only a ruler and a protractor. There's four different ways, drawing from Euclid of a right triangle, blah, blah.

He explains it all and has a little chart, and then the very last line, it dribbles off and he says, "But the soup is getting cold." And you can imagine his cook and all his retinue are downstairs calling him to lunch. But he's still trying to get us one step closer to the spirit manifest in the laws of the universe. So whether it's a Mona Lisa or Vitruvian Man, or the fetus in the womb, it's all about the spirit of creation and what are we doing here? How do we fit in?

AUDIENCE: Good morning. First, thanks for doing what you do. Your work enriches us. Is there a modern day equivalent to a Leonardo or an Einstein or a Franklin,

somebody who is this renaissance figure who does lots of different things for you, or a future biographer to write about? And can there be, given how specialized we've all become?

WALTER ISAACSON: Yeah, and I'll use this, I guess, as the last question, run it out a bit. Which is yeah, there are-- science is much more specialized now. However, there are great scientists and great creators and great innovators whose genius comes from seeing patterns across different disciplines. I'm not going to put any of these people in the category of Leonardo, although they'll write me thank-you notes. I mean, I can look at Eric Lander at the Broad Institute who is a mathematician, who became a biologist, physicist, whatever, and is now working on sequencing the genome but looks across different patterns and has interests in different fields.

In commerce. I mean, I can look at a Jeff Bezos who loves space travel, loves the concept of storytelling, is mesmerized by machine learning, artificial intelligence but also is great at commerce. And you go and you see him and you listen to him, he's interested in everything, all these different fields. I think that helps him be more creative than a narrower person would be.

Obviously, Steve Jobs falls in this category. He studies dance and calligraphy at college. He makes sure that we have fonts where every pixel on the screen allows us to make beauty out of our writing, something that's hard for us to do sometimes. But by connecting beauty to technology, he creates things we did not know we needed. When I was first studying him, I didn't know I needed a thousand songs in my pocket. But the minute he creates the beauty of that iPod, you suddenly know you want it.

So there are people who love everything from music to art to science to technology to circuit boards and they create things like iPhones and iPods, or for that matter what a Bezos or other people have created.

But I think it comes from resisting that push we have to not be distracted. People say, "Quite getting distracted." I guess if there's a message for the kids, as you asked for, it's get distracted. If your imagination carries you somewhere, let it go where it's going. If all of a sudden you care about why the sky is blue, that's in Einstein's notebook, why is the sky blue? It's in Leonardo's notebook, why is the sky blue, get distracted. Care about everything in nature and do it for curiosity's sake. I'll end with this little poem.

JEFF BALLOU: I have one question after you do that. Go ahead.

WALTER ISAACSON: No, go first and I'll--

JEFF BALLOU: No, before we wrap it up, we have a tradition here at the club, and that's present our National Press Club mug.

WALTER ISAACSON: Thank you.

JEFF BALLOU: Thank you very much. (Applause) And we want to, of course, once again thank the team that put this all together today, Betsy Fischer Martin, Lisa Matthews, Jamie Horowitz, Lori Russo, Heather Forsgren Weaver, April Turner and Marc Scheff, Jr., and the club staff, liaison Lindsay Underwood and Laura Coker, who manages the office of the club president, and Bill McCarron, executive director.

As you finish your point, I want to throw one last question at you. You've written about all these geniuses. How has written about all of these people changed you?

WALTER ISAACSON: Yeah, I think Leonardo da Vinci changed me the most.

JEFF BALLOU: How?

WALTER ISAACSON: Meaning I never, after writing about Einstein, said okay, I'm going to really learn tensor calculus and get us to a unified field theory. But, learning from Leonardo, I walked here this morning and I walked across Lafayette Park. And there were birds, as usual, taking off. And I remember Leonardo's codex on the flight of birds and every single species he figures out whether the wings go up faster or down faster when they're flying. How the tail goes when they land. I paused and pushed myself to just be a tiny bit more like Leonardo and to risk getting Betsy mad at me by being two minutes late, and I watched each of the birds and how they flew.

And as you know, the sun broke out this morning after a sort of hazy day and it was sort of a yellowish orange color. And it was hitting and putting luster, spots of luster, on the shiny parts of the state of Lafayette in the corner of the park as you get here from downtown. And I watched, as Leonardo taught me, if you move your head, how luster changes in a different way than shadow and light changes.

These are things that we can all pause and notice a little bit more. And it's not particularly useful, I'm not going to paint the Mona Lisa. But it's good for an enriching life to just keep my little notebook, put in it things I want to observe and just try to catch the things that we see every day from the blue sky to the way light hits a curved object to the way a bird flies, to the expression on somebody's face and trying to fathom by looking at her lips what she might be thinking. All of those things you can try to do a little bit better.

And the point I was going to make ties into this, which is just something I'll leave you with. Which is the tongue of the woodpecker is three times as long as the beak. And when the woodpecker hits the bark at what is ten times the impact that would kill a human, the tongue wraps around the brain and it serves as a cushion, yeah. Yeah, hmm. There is no reason you need to know that. It is useful information. It has no use to your life, no utility, no purpose. But I thought maybe, you know, after knowing that Leonardo da Vinci one day described the tongue of the woodpecker in his notebook, you might want to know, just out of curiosity, pure curiosity.

JEFF BALLOU: Thank you, Walter Isaacson.

WALTER ISAACSON: Thank you. (Applause) I'm happy to be over there.

JEFF BALLOU: Line up against this wall, please. Thank you very much, we are adjourned. (Sounds gavel.)

END