



**Ideas That Change the World**

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MR. ISAACSON: Good afternoon. Thank you for bringing back the sunshine. I am Walter Isaacson, and I have the great honor and even higher pleasure of welcoming you to the Second Annual, which means this isn't the first, but it sure won't be the last, Aspen Ideas Festival. So thanks for being here to kick off our second year.

An idea is a very precious thing. You know, like a good jewel it can sparkle and endure forever. And one of the ways you know your best friends or you know your favorite magazines like the Atlantic Monthly, is that every time you meet up with them, they give you a new idea, something you can chew on. The greatest gift you can give.

And we hope that each one of our sessions over the next seven days will give you that gift of a great new idea. A new idea is a combination of both creativity and common sense. Two qualities that are sometimes in short supply these days. They are born when those two qualities coincide, and the birth of new ideas requires open minds, which is also sometimes rare these days.

So open your minds, think creatively, think sensibly and with some common sense, and join us in what we hope will be another great adventure of the mind. Thank you very much.

(Applause)

MR. ISAACSON: And now my partner, the incomparable, David Bradley.

MR. BRADLEY: Thank you, Walter.

(Applause)

MR. BRADLEY: Good afternoon. As an enterprise, The Atlantic couldn't be happier to work with the Aspen Institute in doing the Ideas Festival. But from my part, speaking more personally, I love the prospect of working with Walter Isaacson. If you own a magazine and end up working with editors and writers you hear the Walter Isaacson name a lot, a great, great deal.

There are people in our writing corps who think that Walter Isaacson is the finest editor of a serious magazine of his generation. I have also heard it that he is the only full honest intellectual heir to Henry Luce.

My own pedigree is much more modest. I bought the Atlantic Monthly, I simply bought it from a magnificently wealthy New York real estate titan, I am the intellectual heir to Mort Zuckerman.

(Laughter)

MR. BRADLEY: Mr. Zuckerman has a house right over my shoulder, behind here. I think he considers his sale of the Atlantic to be his finest commercial transaction. And I picture their moments when Henry Luce looks down, and sees Walter Isaacson, and says, "You know, I couldn't have done better." And I think there are moments when Mort Zuckerman looks down, and sees me and says, "You know, I should have sold him USNews & World Report."

(Laughter)

MR. BRADLEY: So this is a prosperous group. But there's no possibility you would turn out for

days on end for a festival on luxury cars or festival on real estate. What is this special magic that ideas have for mankind? The Atlantic office is in Washington, are in the Watergate, and my own office is on the 8th floor.

It is a fantastic office, with floor to ceiling windows, and a view of the Potomac River straight up into Virginia and straight down to the Kennedy Center. And I was hosting a lunch there, many years ago now, about 20 business executives. And the late Paul Tsongas, Democrat from Massachusetts, presidential candidate, was speaking. He was just finishing up his failed presidential bid against -- when he had just lost the nomination to Bill Clinton.

And he had his back to the wall which means he's looking out of the two tables and then he had the glass view of the Potomac, and he was speaking and then he just stopped. He stopped for a long time, maybe 30 seconds, enough so people were impossibly uncomfortable with it.

And then he said, almost as if to himself, "You know, it just keeps flowing, it just keeps flowing." And then he sort of figuratively shook himself and finished his remarks. About two weeks later, I read in the paper that the cancer that had been with him and derailed him five years earlier had returned.

And I have always thought that in looking at the permanent fact of the Potomac going by, he was juxtaposing that against the life that he knew was then temporal. About two weeks before he died, the New York Times got an interview with him, and he said in the interview that, "When I am down to my last living cell, it will be the part of me that wants to be President of the United States."

(Laughter)

MR. BRADLEY: Very becomingly candid statement. And it also gives you a sense of how an idea can seize a human being. In that case, it was an idea about ambition, but it could just as easily have been romance, or love, or faith, or devotion, or spiritual commitment, or original discovery, a commitment to an intellectual or political philosophical idea advancing science.

Our species is different from all others, in this respect also, in that we are capable of being seized by an idea. And it is the richest privilege we have. You are so the right group for -- to be guest for a week-long festival of ideas, and with Walter, I am very glad that you are here.

I have a very de minimis role now. What I am to tell you is that the festival has invited several people, all prominent, to come and speak for three minutes on a single idea that they think either has or could change the world. And they are going to introduce themselves as they come up. But the first I get to introduce, which is Shashi Tharoor, who is with the United Nations. Welcome.

(Applause)

MR. THAROOR: Thank you. Well, as an Indian writer and a United Nations official, I am profoundly convinced that the one idea that has been indispensable to human progress, indeed human survival, is the idea of pluralism. The Indian adventure is that of human beings of different ethnicities and religions, languages and beliefs working together under the same roof, dreaming the same dreams. That is also exactly what the United Nations at its best seeks to achieve.

I remember how in the Calcutta neighborhood where I lived during my high school years, the wail of

the muezzin calling the Islamic faithful to prayer, blended with the tinkling of bells accompanying the chant of the mantras of the Hindu Shiva temple, and the crackling loud speakers outside the Sikh gurudwara reciting verses from the holy book, the Granth Sahib, and two minutes down the road was St. Paul's Cathedral.

That was one sign of Indian pluralism. If America is a melting pot, then to me India is a thali, a selection of sumptuous dishes in different bowls. Each taste different and does not necessarily mix with the next, but they belong together on the same plate, and they compliment each other in making the meal a satisfying repast.

Two years ago, after the all inspiring experience of the world's largest exercise in democratic elections, India offered the world the sight of a Roman Catholic political leader, Sonia Gandhi, making way for a Sikh, Manmohan Singh, to be sworn in as Prime Minister of India by a Muslim, President Abdul Kalam, in a country 82 percent Hindu.

Growing up in India, I valued the idea that a nation may celebrate differences of cast, creed, conviction, color, culture, cuisine, costume and custom, and still rally around the consensus. And that pluralist consensus is on the simple principle that in a democracy you don't really need to agree, except on the ground rules of how you will disagree. It's the same for the world at large.

The great achievement of our millennium has been that we've finally attained a global consensus on how to manage without consensus. And the reason this is important is that we live in a world of multiple truths. Since I am also a novelist let me tell you an Indian story, an old Indian story about truth.

It seems that in ancient times a brash young warrior sought the hand of a beautiful princess. The king, her father, thought the warrior was a bit too cocksure and callow. He told him he could only marry the princess once he had found truth. So the young warrior set out on a quest for truth.

He went to temples and to monasteries, to mountain tops where sages meditated, and to forest where ascetics scourged themselves, but nowhere could he find truth. Despairing one day, and seeking refuge from a thunderstorm, he found himself in a dank musty cave. There in the darkness was an old hag with warts on her face and matted hair, her skin hanging in folds from her bony limbs, her teeth broken, her breath malodorous.

She greeted him. She seemed to know what he was looking for. They talked all night and with each word she spoke, the warrior realized he had come to the end of his quest. She was truth. In the morning when the storm broke the warrior prepared to return to claim his bride. "Now that I have found truth," he said, "what shall I tell them at the palace about you?" The wizened old crone smiled, "Tell them," she said, "Tell them that I am young and beautiful."

(Laughter)

MR. THAROOR: So truth may not always be true, which is why we need to acknowledge other perspectives. Human progress can only occur on a planet that makes a virtue of its pluralism, privileging tolerance and co-existence over bigotry and division. As the new millennium begins, we must rejoice in our multiple identities united by a larger idea of humanity. We began the last century striving to make the world safe for democracy. Perhaps in today's globalizing world, we need to work to make the world safe for diversity. Thank you.

(Applause)

MR. KRAUSS: Well, I get to introduce myself, I am Lawrence Krauss, I am a theoretical physicist and cosmologist, that's not to be confused with cosmetologist.

(Laughter)

MR. KRAUSS: And in my spare time, I spend time to trying to bridge gaps between science and culture. And I want to thank the organizers for having me speak right after that.

(Laughter)

MR. KRAUSS: But in any case, science has changed the world. But I frankly often worry that in fact scientific ideas have really never substantially changed people's world views, no matter what we do. And I have a demonstration of that, I have a book on relativistic astrophysics which I won't read, Walter, but I'll do this.

Okay, so I don't want to put anyone on the spot, but most people in the room would be -- based on experience, would agree that the book fell faster, because it's heavier, okay. Except of course -- and I didn't ask for a vote, because I didn't want to embarrass you, but 400 years ago Galileo gave us an experiment, he said --look, it's not true, right? The paper didn't get any heavier. But most people still don't know that.

Similarly a little over a 100 years ago, Darwin changed the world, but well over 50 percent of the U.S. public still don't understand, or in fact believe the evidentiary reality of evolution. So, having said that I am going to give you a scientific idea. It's the idea that I think could change the very nature of science, and vastly alter how we understand the universe, and it's also an idea that I hope is wrong.

Albert Einstein said that the question that interested him most was whether was God had any choice in the creation of the universe. By this he meant is there only one consistent set of fundamental laws that can describe nature. Put another way, could nature be different and still exist?

Well, after hundreds of years of science we have an answer that generally the scientific process is considered, and that is our job is to discover, the answer to that question of course is God didn't have any choice in the creation of the universe, and our job as scientists is to discover the fundamental principles to describe why nature must work as it does.

But the new idea I want to describe says that this is a grand illusion. That the laws of nature are just as they are, because if they were any different we wouldn't be here to ask the question. If there are many possible universes, then only certain physical laws and initial conditions could result in intelligent life. Claiming that nature is determined by some unique or elegant mathematical principle would then be like claiming general principles require all planets to have oxygen atmospheres.

Indeed it is our planet that has an oxygen atmosphere simply because we happen to need oxygen to live here. Now to some this notion of the universe existing because we are here, cries out for intelligent design. But as usual those people mix cause and effect. Instead the notion suggests that no fundamental natural or supernatural principle singles out our universe.

If evolution suggests our presence on earth maybe an accident of nature, this idea suggests that nature itself is an accident. The idea has currency now, because of a startling experimental discovery of a crazy property of empty space. And it's resonated because theorists have an ongoing fascination with a vague and rather floundering theory known as string theory.

What could be after all better suited for a theory that has made no successful predictions of anything, than a universal landscape in which no fundamental predictions are possible? But that's the rub. In a universe where fundamental (inaudible) predictions may become impossible, then we might be guided by our past theory plausibility arguments, or what some people call faith.

Will science then become religion? Or will this idea make science appear to be an even greater threat for those who now require explicit if imaginary evidence for design in order to believe in God. Stay tuned.

(Applause)

MR. SINCLAIR: My name is Cameron Sinclair; I am the founder of an organization called Architecture for Humanity. I also am going to look a little bit an intelligent design, but the one that lies in my industry. We are a little upset that that phrase has been taken from us. With humanitarian crisis, as with so many problems facing our planet, collaboration is not only the best hope for finding solutions. It may become our only hope.

The large scale disasters we face are so profound, the momentum so fierce and that unless we put to use the energy and creativity of every person of good will, we cannot possibly overcome them. For myself and for many others we feel the greatest challenge we face today is that of providing adequate shelter. With a billion people living in abject poverty, and four billion currently living in growing, but fragile economies, we are shocked by what the future may bring.

We see that one in seven people currently live in unplanned illegal settlements. And if we do nothing by 2025, one in three people will be living in these urban slums. This increasing economic divide will create civil unrest and conflicts will erupt due to the lack of access to basic human needs, water, sanitation, shelter, education and healthcare.

This will no doubt create self organizing systems of rebellion, modeling itself on today's extremism. For myself, the physical design of our homes, neighborhoods and communities shapes literally every aspect of our lives. However, with a few exceptions for decades there has been little to no innovation in both the developmental and post disaster reconstruction world.

Too often assistance comes from a concept so far removed from the crisis at hand that it simply falls short or fails. It can be especially disastrous when newly formed organizations take a go-it-alone approach, and implement untested theories on the ground. Historically, such ideas have led to economic, environmental and societal damage in the communities that they were meant to help.

Not integrating urban planning strategies of growth and renewal can create permanent refugee camps where villages and towns should evolve. Bringing large quantities of donated materials and free labor will and can disrupt an already weakened economy. Introducing inappropriate foreign technologies and construction methods cut out the very people who are in desperate search for financial growth.

In 1999, Architecture for Humanity, my organization, has sought to create a conduit between design professionals and the humanitarian world bringing appropriate innovative, sustainable and dignified solutions to communities in need. By utilizing rapid advancements in technologies, embracing to centralize business model, and integrating and creating a new collaborative open source architecture, we have become one of the largest design non-profits in the world.

In seven years, 7,000 design professionals in 54 countries have donated their services leading to projects that have impacted tens and possibly hundreds of thousands of lives around the world. From the shores of Sri Lanka and India, to the hurricane ravaged Gulf Coast, thousands of physically viable structures are now emerging because architects are involved.

Mobile HIV/AIDS health facilities are now in operation in Sub-Saharan Africa because architects are involved. New 100 percent recycled transitional structures house families in Grenada and Kashmir simply because architects are involved. We are an industry that has finally rejected what I call the form-follows-fevered ego approach to designing.

And has finally found real meaning and have become active participants in developing more culturally and environmentally sound structures that in turn have stimulated local economical development, and arming the communities in need with new skills and empowering them to improve their own lives. If we are really going to tackle the impending housing crisis we need to do more than just rely on small interventions or a singular industry.

I believe that we need to create a new global multilingual workspace that involves a diverse community of participants to generate new solutions. This network must become a highly searchable database of proven solutions that can be freely distributed to NGOs, aid agencies and communities, for adaptation, implementation and a catalyst for true sustainable renewal.

Equipped with such a network we could better respond to real world disasters as well as the systematic issues that continue to plague our world. Implementing agencies will be able to make split decisions on allocating funds earlier in the process and provide the best opportunity to enable displaced populations with localized solutions that will last longer, integrate disaster mitigation technologies to protect the future, and ultimately new communities based on sustainable prosperity.

We have the skills, technology, and expertise to lead this revolution. Our world deserves it. Thank you.

(Applause)

MR. NALEBUFF: My name is Barry Nalebuff. In my day job I am a game theorist and business strategy professor at Yale. I am also an entrepreneur and co-founder of Honest Tea, a company that will be familiar to those of you who read The Atlantic. A great strategist once said, "Philosophers have only interpreted the world, the point however is to change it."

My proposal to change the world takes root not just in the vast wasteland of America, but in the garbage pail of the vast wasteland, yes, reality TV shows.

(Laughter)

MR. NALEBUFF: I want to create a reality TV show with a positive purpose. In each episode, we'll take on a real world problem, and set out to solve it. The show would be a battle cry against complacency and cynicism. I want to inspire the public to find ways to improve their world, and in the process create and test ideas that will be the seeds for new businesses, public policy and social change. So let me give you an example of the type of problem I hope to solve and how the show will solve it.

Consider the life and death problem facing 88,000 Americans on a waiting list for organ donors. Through interviews the show would help viewers identify with some of those literally dying on the terminally long waiting list. But unlike most op-eds or Morgan Spurlock, or Michael Moore's TV Nation, the show is not about identifying problems, the show is all about showcasing solutions.

So how do we increase the number of organ donors? Okay, how many of you are organ donors? But not enough. And that's the problem. And it's not enough just to plead or to ask, no, there's a better solution. The solution is to switch from opt-in to opt-out. That's right; you are an organ donor unless you opt out.

The show will then confront what I suspect many of you are now thinking. If this is such a no-brainer, why hasn't it already happened? Is there something I haven't considered, something wrong, is it impractical, unethical? In terms of practicality we'll illustrate the success of the national opt-out list for telemarketers.

(Laughter)

MR. NALEBUFF: You know, if you care enough about not being an organ donor, all you have to do is register in a do-not-donate list. 80 million people have figured out how to do this to opt out of telemarketing. So those who care enough about not being an organ donor shouldn't find it too hard to opt out.

Okay, could we really ever make the switch? Here, the "nattering nabobs of negativism" will be taken on a tour of Spain and Belgium, two countries that recently switched over to opt-out. That's right, in the process they entirely eliminated their waiting list and Spain now exports organs.

In terms of ethics, the experience of Spain and others shows that opt-out ends up really being a soft opt-out. They have so many organs available, that if the donor's family objects, the organs aren't used. The switch makes the vast majority of us all better off, more people are donors, and as a result all of have an increased chance of getting an organ if we need it, on time.

Interviews with folks in Belgium show that people who hadn't signed donor cards, but didn't opt out either now feel much better about their status of being an organ donor without having to feel squeamish about having signed the card. The point of the switch is to change a social norm, the expectation is that you should be an organ donor. Not being one is acting selfishly. So the show ends with a green light moment and a call to action. We find a sympathetic Congressman or senator, perhaps someone here in this audience who is willing to sponsor a bill creating such a list. Then we encourage all the friends and family members of those needing donations to write to their representatives. With almost 90,000 folks on the list their friends and extended families will be in the millions.

I hope you agree this is compelling TV that truly involves the audience to help save lives and make a

difference. The show will include a website where viewers can contribute their solutions and will feature the best ideas. Next week we take on increasing philanthropy, then car safety. Yes, philosophers have only interpreted the world. The point however, is to change it. I may be the only business school professor today quoting Karl Marx, but he did have a point. Thank you.

(Applause)

MR. LAND: My name is Richard Land, and I am an ethicist and theologian in my day job as President of the Southern Baptist Convention's Ethics and Religious Liberty Commission. And my candidate for an idea that I believe has changed the world, is changing the world, and will continue to change the world, is the assertion that "We believe that all Men are created equal and that they are endowed by their Creator with certain unalienable rights and that among these are Life, Liberty, and the pursuit of happiness."

Embodied in that assertion is the idea that the rights of Man; freedom of conscience, belief, speech, assembly, and worship, and others are innate to our humanity and are granted by our Creator that can only be guaranteed and protected by government. Democratic self-government is the best form of government to protect these rights, but democracy without the rule of law and legal guarantees of these innate rights can lead to the tyranny of the majority.

As an American who grew up with that assertion in the Declaration of Independence, it was brought home to me in a very new way when I was invited to take part in a religious freedom seminar in the newly free country of Romania after Ceausescu had just been eliminated. And I was forever changed by sitting in the office of the person who was then the equivalent of our Attorney General in Romania, and he pulled a well-worn copy of a book from the shelf behind his desk and opened it to the declaration of independence and read this portion to me. And then with tears in his eyes, said, "We want what you have. We want freedom. We want liberty. We want what you have. Help us."

And then I think of Natan Sharansky writing in *The Case for Democracy*, "During my long journey through the world of evil, i.e., the Gulag, I had discovered three sources of power; the power of an individual's inner freedom, the power of a free society, and the power of the solidarity of the free world."

I've just finished writing a book on the proper and the improper role of religion in free societies. And in doing research for that book I was going through some of President John F. Kennedy's speeches looking for and finding the speech that he made to the Greater Houston Ministerial Association in 1960 to put at rest the whole issue of whether his Catholicism should be an issue, which it certainly should not have been.

And I've had -- took the opportunity to reread his inaugural address, which says speaking of that revolution that began with these words, "We believe that all Men are created equal and are endowed by their Creator with certain unalienable rights," President Kennedy said, "And yet the same revolutionary beliefs for which our forebearers fought are still at issue around the globe, the belief that the rights of man come not from the generosity of the State, but from the hand of God. We dare not forget today that we are heirs of that first revolution," President Kennedy began -- continued.

And then concluded with these words, "With a good conscience our only sure reward, with history the final judge of our deeds, let us go forth to lead the land we love, asking His blessing and His help, but knowing that here on earth God's work must truly be our own." And then lastly I came across a

speech I had never heard because it was never delivered; the speech that he was going to make at the Trade Mart at noon on November 22, 1963.

This is the final paragraph. “We in this country, in this generation, are by destiny rather than choice the watchmen on the walls of world freedom. We ask, therefore, that we may be worthy of our power and our responsibility, that we may exercise our strength with wisdom and restraint, and that we may achieve in our time and for all time the ancient vision of peace on earth and goodwill toward men. That must always be our goal,” the President said. “And the righteousness of our cause must always underlie our strength. For as was written long ago, “Except the Lord keep the city, the watchmen waketh but in vain.” Thank you.

(Applause)

MS. NOVOGRATZ: Hi, I’m Jacqueline Novogratz and I’m the CEO of the Acumen Fund, which is a non-profit venture capital fund that builds scalable and financially sustainable enterprises that deliver health, housing and water to the poor in the developing world. And Larry, you thought it was bad to go after Shashi. We didn’t talk about our different ideas, and I also was going to speak about the idea of equality.

And it actually links back to Shashi because I think Richard, if you and I sat at the same table, we’d have very diverse opinions and yet the fact that we were both coming here at the Aspen Institute to talk about this very American ideal of equality, I think it says a lot about what also binds us together as a world. So I’m going to add to what Richard said on equality, but then I want to end with another idea, which I hadn’t thought about talking even until right now, which is our interconnectedness.

What I want to speak about equality though is how today in our generation the challenge is really to extend our notion beyond just the Americans in our country to every human being living on the planet. And I want to go a little bit to what Cameron was speaking about in terms of the extraordinary moment in history in which we’re living where we really do have the tools and technologies to create solutions to the problems of poverty. And we have a moral obligation since we know that people are poor and they know they’re poor too.

A child born today in Japan has a life expectancy of anywhere between 85 and 105 years. That same child especially if she is a girl born in Sierra Leone has a life expectancy of 36. We can and we need to do something about the inequality in this -- in our world, and if we don’t our world itself will not be sustainable. In recent years we’ve heard calls to end poverty through top-down solutions aimed at curing the world’s ills. And what worries me about that, that in our rush to bestow our knowledge and solutions on the needy, it is too easy to forget the fundamental premise of equality.

It is too tempting to solve problems in the way we deem right and necessary, regardless of what is desired or needed by those we’re trying to help. I believe in a different approach, solutions that address the realities of the poor with the clarity and accountability of the marketplace. This promises equality because markets truly work only when individual preferences are honored. Market-based solutions, either alone or in partnership with government, can be applied to all basic needs of the poor; healthcare, clean water, housing, education.

In the end they’re the only kinds of solutions that will scale and become financially sustainable. By investing with an eye to social change rather than simply providing charity, we can shift the relationship from seeing the poor as passive recipients of development aid to being active

participants in directing their own lives, this is where change and dignity begin.

And to move into just a little bit about interconnectedness and the reason I really got into the work I'm doing goes back to a story that I know some of you have heard, of when I was 12 years old and my uncle Ed gave me a blue sweater that had animals crossing in the front of it and mountains on the top of it, and I loved the sweater. I wore it all the time.

And one day when I was 14 and my adolescent body was filling it out in a slightly different way, and I was dating one of the football players and Matthew Mussolino (phonetic) who was my nemesis in high school said to me, in a voice that everybody could hear, a really lewd comment, which made me go home and throw the sweater away immediately, asking my mother how I could ever possibly have worn it. And we put it in the goodwill, and I promptly forgot about it.

About 12 years later I was jogging in the hills of Kigali, Rwanda, and about 20 feet in front of me I saw a little boy wearing my sweater. And I thought, you know, it couldn't be, ran up to him -- and I'm quite an excitable person, and grabbed the child, turned over the collar and sure enough there was my name, his sweater, thousands of miles away and more than a decade.

And I end with that story starting with equality, but ending with interconnectedness because it's an idea that has been a part of our world through both the religious and the secular worlds. And it's an idea that I hope we can carry with us as we find the solutions to the world that really do promote dignity not only of people who we may never know and never meet, but the dignity of ourselves as well. Thanks.

(Applause).

MR. MILLER: Hi, my name is Arthur Miller, and I'm a physicist and writer, what else would one do with a name like that --

(Laughter)

MR. MILLER: -- at University College, London -- in London -- and don't be fooled by my New York Bronx accent, actually I'm English. I'm going to talk about science -- I'll say a few words about scientific relativity, which is an excellent example of an idea that has altered dramatically our conception of the world about us. Even -- and it continues to do so 100 years after its discovery by Albert Einstein.

In fact, in the first two decades of the 20th century it prepared scientists for the ambiguities that they would encounter in the world of the atom. Ambiguities such as atomic entities can be both wave and particle at the same time. It can be localized and extended. You can't even imagine that no less image that. And one has to deal with a world ruled by probabilities. In other words, what we see is not necessarily what we get.

Now, scientists and lay people are continually amazed at the riches that relativity theory gives us. We have observed black holes, neutron stars, and other wonders of the universe not to mention GPS and an understanding of electronics that permitted the advent of computers. That central equation of relativity, that icon of the 20th century  $E=mc^2$  has drastically effected developments in other fields as well, such as art.

$E=mc^2$  means mass and energy are equivalent. It means that mass, which is a localized quantity -- we're all localized, we may feel, and I feel like that sometimes, and that's equivalent to energy which is not localized. Well, artists had a particularly interesting take on that, and it was that everything about us is ultimately amorphous. And that led to the development of abstract expressionism and a movement, which is a movement towards understanding that peculiar and beautiful reality beyond appearances; something which scientists seek in parallel. Thank you.

(Applause).

MR. JOY: Hi, I'm Bill Joy. I'm a trustee of the Aspen Institute and a partner at the venture capital firm Kleiner Perkins Caufield & Byers, which I joined about a year and a half ago and I focus on Green Technology Investing. I'd like to talk today about the quantum theory of physics, which is a big idea that I think will have a huge impact in our time.

Quantum mechanics describes the interaction of matter and radiation, and explains how all forms of energy are released in discrete units or bundles called quanta. A hundred years ago the physicist Niels Bohr famously said of quantum theory that those who aren't shocked by it when they first come across it haven't understood it. Now, today we are beginning to have an increasing ability to create engineered materials at the scale where quantum effects appear. We've reached the quantum scale because one or more of the three dimensions of a material object shrinks to be only a few atoms thick so that in that dimension quantum effects dominate. And we should be rightly shocked and amazed by what results.

When you shrink away one dimension so you only have two microscopic dimensions you have a thin film, which can be used, for example, to create energy efficient windows. You put a thin film of metal that blocks infrared heat, you can hook it up to electricity and at the touch of a switch you can make it light or dark.

If you shrink away another dimension so you only have one microscopic dimension, you have a very thin wire, a very thin wire of carbon. It might be called a carbon nanotube. Carbon nanotubes are so strong that you can imagine building an elevator with them that would reach all the way into outer space. If you shrink away then another dimension so you have no microscopic dimensions, you have an object that people call a quantum dot where quantum effects now completely dominate.

And recent work -- published work suggests for example, that a material made of quantum -- many quantum dots could be nearly a 100 percent efficient at converting incident radiation -- incident solar radiation to electricity. Such solar panels built of such materials could, for example, just be put on roofs of buildings in cities to cool the city by absorbing all the incident solar radiation, of course they would make a lot of electricity as a side effect.

Now, the people of the world clearly aspire to and we hope achieve in this century higher living standards. If we try to provide this for everyone using 20th century technology as we do in America today, we would raise the global use of energy and resources as much as ten times with clearly unacceptable environmental consequences. We've already seen the power of the small and the tremendous advances in Microelectronics in the computing revolution and the communications revolution of the late 20th century.

Now, the same kind of radical improvements we saw there will apply to our use of energy and resources; the fruits of the quantum theory of the 20th century benefiting us all in the 21st. Now, this

is admittedly not a big idea, it's also a very small one, but it's one we're vigorously pursuing. Thank you.

(Applause)

MS. SMITH: I'm Anna Deavere Smith. I'm a playwright and an actress, and I'm the first Harman-Eisner artist-in-residence here at the Aspen Institute thanks to the generosity of Dr. Sidney Harman and Mr. Michael Eisner and the extended fellowship of Walter Isaacson. These are not my words and it's not my idea. These words come from Dr. Yahaya Sekagaya who is the director of Prometro traditional healing project in Uganda. I met him there in a forest in Uganda and interviewed him, and these are his words.

From my new play Let Me Down Easy and this is called the pot with holes. And it needs your robust participation, so please don't let me down. I know you're not African for the most part, but if you're African get it even more robust.

(Laughter)

MS. SMITH: A pot with holes. Is this a pot?

AUDIENCE: Yes.

MS. SMITH: What is the purpose of a pot?

AUDIENCE: To hold things.

MS. SMITH: Yes, to hold things. Can this hold water?

AUDIENCE: No.

MS. SMITH: So is it a pot?

AUDIENCE: No.

AUDIENCE: Yes.

SPEAKER: Yeah.

(Laughter)

MS. SMITH: Too smart. How then would you say what is it?

AUDIENCE MEMBER: It's a pot with holes.

MS. SMITH: Yes, it is a pot with holes. Exactly. Now, this is a pot with holes, which serves our philosophy, which is in African culture, in African philosophy this pot is a very significant utensil. It's meant to hold liquid and more specifically water. Water, in Africa is very significant. Water is - it is healing. Water is -- it is healing both -- it has spiritual and physical cleansing. It is therapeutic. So water has a lot of value. Now, this pot cannot hold water because of the holes.

Now, what is more plenty about this? Is the hole more plenty than the clay? Is the hole much more than the clay? No, the clay is much more than the hole, but the hole outweighs the clay. Meaning, in traditional healing, traditional medicine is like a pot with holes. Meaning, traditional medicine has served Africa, for example, for a long time, but now, presently it has holes. It has small problems. You get it?

AUDIENCE: Yeah.

MS. SMITH: It has been mishandled. It has not been defined properly. It has been abused. There are malpractices. When a healer rapes a woman, you get it. So it goes through the medicine and not through the healer. So in Prometro we are saying we shouldn't break the pot because of the holes. Let us fill the holes and then traditional medicine will have served its purpose, but it's a very big problem. It's a very big task. You cannot fill all these holes by yourself.

Let us have a code of ethics, a code of conduct; you get it. Let the politicians put the right laws governing traditional medicine; you get it. Let the researchers come and research into traditional medicine. Let the playwrighters, actors come and write a play, a good play about traditional healing system. Then we will have blocked those holes. And we think that age being a new disease, we think that the healers might not have the right message. We believe that healers are the right messenger, but they lack the right message.

Western science has a lot to contribute towards blocking the hole. Science, politics, researchers, actors, everybody; let them come and contribute in their own way towards blocking that hole. And in Prometro we normally symbolize it by saying, "Will you contribute one finger? Not contribute everything, but will you contribute one finger towards blocking that hole? Thank you. Will you? Will you come and contribute one finger? Thank you. Oh, I forgot. First of all, welcoming you in the African way, can I hug you?"

(Laughter)

MS. SMITH: You are most welcome. Can I hug you?

(Laughter)

MS. SMITH: You are most welcome. Now, you are most welcome in the African way. Welcome, welcome from the heart.

(Applause)

MR. DEARLOVE: I know I should've refused to be the last speaker.

(Laughter)

MR. DEARLOVE: And in case you're getting confused, I'm not from the Bronx.

(Laughter)

MR. DEARLOVE: I'm Richard Dearlove. I was the 13th Chief of the British Secret Intelligence

Service popularly known as MI6. It was founded in 1909. I'm currently the 53rd Master of Pembroke College, Cambridge. It was founded in 1347. Both institutions hence their survival have proved themselves highly adaptable to changing ideas in a changing world.

And it strikes me I actually live literally at one of the world's crossroads of ideas. Twenty yards down the road, Darwin wrote *The Origin of the Species*. One of my linear predecessors at Pembroke translated the magnificent authorized version of the St. James' Bible. Across the road, Rutherford split the atom, and Crick and Watson decoded the double helix of DNA.

Powerful, powerful ideas. Ideas are powerful. Beware of dangerous ideas and bigotry. And I'm a messenger. That's what heads of intelligence do. And I'm not going to talk about terrorism. But I will talk for three challenging minutes about the political and religious ideas that lie upstream of the terrorist problem. And I'm going to be the only speaker that hits a rather negative note. Sorry about that.

Is the rise of radical Islam to be the ideological issue that will dominate and characterize the international politics of the first part of the 21st century as the Cold War, also an ideological contest, did the latter half of the 20th century? Radical Islam is a clamorous rebuke from the Arab street of the traditional politics of the Middle East.

It is oppositionist by nature, and a serious threat to the established order. New pulpits, new power centers are challenging the Muslim establishment, which itself is compromised by its association with authoritarian regimes on whom we in the West have depended for regional stability.

Radical Islam also rides very successfully the tide of globalization, which might have been in times past a local phenomenon of limited significance. It is now transnational, highly networked, de-territorialized. Its influence animates and agitates the heartlands of Islam and its diaspora, particularly in Europe. Terrorism is but one extreme spin-off of this turbulence at the heart of Islam, especially Sunni Islam.

Radicals of different views compete to fill a political void in the world of Islam hitherto unfilled by previous political movements, be they nationalist, pan-Arab, or secular. What might be the outcome? I think impossible to predict, especially in key Middle Eastern countries like Egypt and Saudi Arabia.

One Muslim scholar speaks of a disturbance of spirits within Islam. What is it, this disturbance? Let me venture one possible explanation that it is a search for an answer to the question, "How does a religion, which is socially so predominant and divides mosque and state with difficulty, adapt in the modern world to its growing de facto political marginalization?"

Finding an answer will profoundly affect the next generation for Muslims and for non-Muslims. Our core interests tie us inexorably into the issue. We are both bystanders and players. Our policies can help, or they can make matters worse. We face a great challenge in crafting our response. A theologian may be as important as a soldier, an academic as important as a diplomat. We must move from treating symptoms to dealing with causes.

Thank you.

(Applause)

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