Transcript from the 2023 Mind Brain Behavior Distinguished Harvard Lecture Event with Howard Gardner and Steven Pinker

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[Applause]
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TK: Hello, everyone! Welcome and thank you for coming. My name is Talia Konkle. I'm a
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professor in the psychology department and I am the Faculty Director of the Mind Brain Behavior Initiative, which I
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get to run with the company of Kim Maguschak who is the Executive Director and who has helped organize this event and all
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the events. MBB is an interdisciplinary initiative that tries
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to bring together people who study the mind and the brain from all the different levels – whether you're thinking about the cultural contexts in which our
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cognition operates, to the interworking and intricate pieces of the cognitive systems of your attention and memory, to the
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interactions of individual cells and the chemicals they release. These are traditionally studied
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with very different lenses, different methodologies, and supported by different communities, but they all bear on the
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most deep questions about what it means to have a mind and how the brain supports it and how we live in this world, so, the Mind Brain Behavior
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interfaculty initiative tries to bring people from all these disciplines together to support this enterprise.
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We try to reach communities at all the levels, coordinating faculty research,
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post-doctoral and graduate education, undergraduate education. And we bring
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events that I think reach the broader community as well. Speaking of the broader community, as an empirical
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scientist, I would like to take a poll, if you don't mind, raising your hands if you are coming to us and you're a faculty or
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somehow affiliated with mind brain behavior in some way. We've got a few. What about a trainee? Post-doc, undergraduate? Ok, we've got a few there. What about people coming from another discipline, who are interested in the topic more generally? Fantastic, okay, you now have your data so you know your audience, excellent.
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And so, what brings us here today is actually a discussion of
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Intelligence. What better way to do that than with people who have pioneered our
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understanding of this discipline, and: Steve Pinker, a cognitive scientist, who's
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really put this together, will be leading this cool discussion between them, so rather than talk, we'll have a discussion of these intelligent minds. And with that, I would like to introduce Steve Pinker, who will get us started and tell us all about our distinguished guest, Howard Gardner. Please join me in welcoming them.
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[Applause]
Thank you, Talia, thank you, Kim,
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and Sean and everyone at MBB Mind Brain Behavior interfaculty initiative who
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made this possible. What a honor and pleasure it is for me to introduce my friend and colleague, Howard Gardner.
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Howard is the John and Elisabeth Hobbs Research Professor of Cognition and Education at the Harvard
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Graduate School of Education and Howard is the world's most eminent writer and
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thinker on education today, one of the world's most famous psychologists, and a
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leading public intellectual. He has written hundreds of articles, 30 books. He
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was one of the first people to win a MacArthur Award when it was
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described, without blushing, as the “genius award.” He has 31—count ‘em—31
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honorary doctorates. He won the Grawemeyer Award in Education, and he has won a
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prize with the coolest name ever: The Prince of Asturias Award in Social Science.
Howard is something of a lifer when it comes to Harvard, he got his
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Bachelor's Degree in a department that no longer exists, the Department of Social Relations, most of which got
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subsumed into my department. It was for many years it was called “psych and soc rel,” “psychology and social relations,”
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until we foolishly dropped the ‘social relations.’
He got his PhD from the
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same department and has been at the Graduate School of Education for most
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of his career. Professor since 1986. He also did a stint at the Boston
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Veterans Administration Hospital, which is more impressive than it sounds because those of who are in the know are
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aware that the Boston VA Hospital was one of the world centers for the study of aphasia, amnesia, and other
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cognitive impairments following brain injury. Among his accomplishments
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were a book called The Shattered Mind before there was any such thing as cognitive neuropsychology,
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cognitive neuroscience, before Oliver Sacks, who’s a household name,
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Howard wrote a book in an era in which the mind was considered as pure software on the cognitive effects of various
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kinds of brain injury—a wonderful book which I still recommend. He wrote a book called The Quest for Mind: Piaget, Levi-Strauss and the Structuralist Movement
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that is probably best known by the phrase as “what post structuralism is post”
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included portraits of synthesizing thinkers like Jean
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Piaget and Claude Levi- Strauss. He (Howard) pioneered the study of the psychology of the arts of
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Virtue and Leadership and Excellence and Merit. He has written a book on the
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landscape of higher education in the United States; on “intelligence” of
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Course, a topic which we'll return to, and on “synthesizing” – his memoir is called
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A Synthesizing Mind. Howard does have a synthesizing mind and that is
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something that I would like to explore in our conversation. Howard and I have a number of connections, as well as
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being colleagues. We had the same graduate adviser at different times, Roger Brown, and we are also connected
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because Howard is married to another distinguished developmental psychologist,
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Professor Emerita at Boston College—Ellen Winner—who overlapped with me in graduate
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school.

So, let's start with some synthesizers, and this would be a way both of bringing us up to how your
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current interest in the synthesizing mind, but also a way of going back to your roots. You studied with or were
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influenced by a number of leading synthesizers, big thinkers.
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And I thought what I'd like to do is kind of a “lightning round” where I will mention some of the people that Howard
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studied with. This is not a way to walk down memory-lane but a bit of a
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education in some of the pioneering people in our field, Mind, Brain, and Behavior
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who may not be as well known to the younger people out there, by which I mean people under the age of 65
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But let's begin with our common adviser Roger Brown. So maybe say a few words about
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Roger.
HG: Well thanks, Steve, you remembered more
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about me than I did! And I
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want to thank MBB for inviting me to have this conversation with
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Steve. I was actually present when MBB started
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30 or so years ago and at the School of Education, we also had a program
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called Mind, Brain, and Education which was a child of MBB, so this is kind
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of a return home for me. Roger Brown was by training
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a social psychologist. And he was not only
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somebody who was very in insightful about human beings, human nature but
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he was also a very good writer. And I think he kind of protected
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those of us who were very interested in putting into words what it was that
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we were interested in. And even though he trained in social psychology, he eventually became, I would say, one of the very first child psycholinguists which doesn't mean that he was
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young but rather he put together the transcripts of “Adam, “Eve” and
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“Sara,” three children growing up in the 1960s in the Boston area and that
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became a database for dozens or maybe even hundreds of studies. He also had a very poignant personal life which many of us didn't
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quite know how to think about and talk about even with him. And Steve wrote an obituary for
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Cognition, a journal, not only the best write-up about Roger Brown but I think
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one of the best writeups ever of somebody's life in a psychological journal, so if this has whetted your
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appetite at all – I would suggest you look at look at Steve’s remembrances of Roger
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HG: Do you want to add something about your personal connection?
SP: Roger was, as well as
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founding the modern study of child language acquisition by taking advantage
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of a high-tech invention of his era – the portable tape recorder – and so he
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had his students, all of whom themselves went on to become leading developmental psycholinguists, to go into
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the home of these three children once every two weeks and just record them talking for 2 hours or in the case of
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one of them one hour once a week. Later when transcripts of spontaneous
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child speech were put online by our colleague Catherine Snow in the “Child
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Language Data Exchange,” scholars began by scanning the transcripts from
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Roger's project. In his own words, Roger was an imposing figure,
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I compare him to (movie actor) Cary Grant, tall, urbane, charming,

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witty, great writer. And he wrote in a memoir in the 1980s, "I am a
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Homosexual." I am not "gay," -- to be "gay" you have to have been born after 1954 and I
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was born in 1925). When Roger was here it was a state that I think very few people can
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appreciate now in the day of thankfully, "gay rights" but
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but no one talked about it. People knew, but it was everyone knew privately, but
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it just wasn't something that you could say, and it was something of a, it was a breakthrough for Roger and a breakthrough
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for many people when he (Roger) was asked to write a one-chapter autobiography for
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the series of History of Psychology and Autobiography. The first line was, "When Roger Brown comes out of the closet, the
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time for courage has passed." Anyway, that's just a sample of his great
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writing.
SP: Jerome Bruner??
HG: Roger sort of adopted me as a
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a graduate student and I was very inspired by him. But Jerome (Jerry) Bruner was a
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much larger figure in my life. He was a psychologist – this is actually something
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that those of you who've heard of both of them will appreciate. Roger, who was born in
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1925, said to Jerry, who was born in 1915, "I used to be 10 years younger than
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than you are, but now I'm 10 years older." Because Jerry Bruner lived to over a 100 and in
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In a sense was ageless. He was traveling all over the world until
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his late 90s.

I was headed to a
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 a career in clinical psychology when I happened to hitch a ride with somebody (psycholinguist David McNeill) and he said this: There's this
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man Bruner, (whose name I'd heard), and he's looking for people to work with him during the summer on a curriculum for
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middle schoolers in Newton, Massachusetts and you should go talk to him. So, I went to see Professor Bruner
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and it reminded me of what they say about Woody Allen interviewing actors for a part before he became notorious…Jerry talked to me for
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about three minutes and he said, “You’re hired, go talk to my assistant” (Annette Kaysen).
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And I worked in the summer of 1965 at the Underwood School in Newton,
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developing a curriculum in social studies called, again this dates me, *Man: a course of study*.
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You would never call it that now, but it was basically a social science curriculum for middle school kids and this is
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actually, very relevant to what we're probably going to talk about. The curriculum asked three questions:
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What makes human beings human? How do they get to be that way? And
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how can they be made more so? Now if Steve doesn't bring it up somebody else is
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certainly going to bring up ChatGPT and other large language instruments
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which sort of explode curriculum as we know it. And I have begun to think
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and write about it a lot. I've been talking about
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whether humanity/humanism may well be what we spend more time in schools on
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than some things which machines do so much faster and better than we are – that will seem to most people a waste of
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Time. (With his colleague George Miller) Bruner also ran a center called the Center of Cognitive Studies. It was a
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place through which almost all thinkers of that time including Nobel Prize winners Tversky and Kahneman went through
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I was influenced by Jerry Bruner's way that he ran this center and one that I'm sure
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we'll talk about as well – philosopher Nelson Goodman and the way he ran something called "Project Zero," which--
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without my being conscious of it-- showed me kind of the extremes of what it's
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like to run a research group. In my memoir (*A Synthesizing Mind*) I talk about how I tried to
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take the better aspects of both Bruner and Goodman and with other
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people try to run a research project which is now 56
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years old. Some of the people here-- nice enough to have come-- are members of Project Zero today.
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SP: And I'm going to ask you about that later. I'll add a couple of other comments about Jerry Bruner
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MBB, this very program, had an event a few years ago(circa 2006) on the 50th anniversary of the cognitive revolution that featured Jerome Bruner,
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George Miller, Noam Chomsky, and Susan Carey. There's an exhibit in the ninth floor of William James Hall and I
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believe the recording is still available. Jerry Bruner then was nearing 100,
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and even earlier was also known for his just overflowing, bubbling enthusiasm
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and I'm going to quote Roger Brown on Jerome Bruner. Roger said that one of the great things about Bruner seminars
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were that everyone had the feeling, he conveyed the feeling that problems of great antiquity were on the verge of
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solution by the group there assembled that very afternoon. Since we're
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talking about writing, Jerry was a prolific writer, and he is maybe the only
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cognitive psychologist to be quoted in Bartlett's familiar quotations and the
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quote is: Any child
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can be taught any subject at any age in an intellectually responsible manner."
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I don't know if that's hyperbolic but it's it is a great aspiration.

Erik Erikson
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HG: Well, since you mentioned Bruner and you're probably going to mention Piaget – they both had enormous influences on me and in a
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sense, I spent a lot of my career fighting against what it is that they said but realizing that they raised the
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questions and I think that probably applies a lot to what you (Steve) have done as well I mean Chomsky was a huge
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influence on you but it's not like you subscribe to everything he said
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EriK Erikson. Erikson was a Danish-German
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artist who never went to college. He used to say he was an artist with some
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talent and nowhere to go and he walked around Europe in the late 1920s and
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early 30s and found himself in a classroom in Vienna which was run by
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Anna Freud, who you will assume correctly was Sigmund Freud's daughter and
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either Anna or Sigmund or both thought that Erikson had some talent working
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with children and so he was analyzed psychoanalyzed by Anna Freud
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and he decided to become a child analyst. He was very prescient, married a talented
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Canadian woman, Joan Erikson, and in 1933, well before many other people,
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they left (Nazi) Europe, came to America and made a life here. For a while,
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Erikson was a child analyst who wrote surprisingly turgid articles about
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psychoanalysis. I was rereading some of them the other day, but then he wrote a more popular book called *Childhood and Society*
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which was a very, very influential book about the stages of child development, in some ways
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universal, but also the very distinctive way they played out in Germany, in Soviet Russia--brilliant
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Insights, as well as in various Native American communities. Then, he
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wrote another book called *Young Man Luther* which is what it
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sounds like and these were respectively in 1950 (C&S) in 1958 (YML). And then, in the early
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1960s, he was brought to Harvard as a professor even though he never had gone to college.
SP: Couldn’t happen today.
HG: I don't know and I’m going to poke a little fun at you, Steve – walking through Harvard Yard,
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you're probably about as recognizable as anybody – and Erik Erikson was the same thing. We were all kind of in awe of him.
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And for some reason he liked me, and he became my tutor for two years – first
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a group tutorial and then an individual tutor.
And while I said I was going
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on in clinical work and I would have followed his footsteps, my work
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with Bruner on developmentally-based curricula convinced me correctly that I wasn't a psychoanalytic type, and I wasn't really a clinical type I was more
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……trying to understand kids and cognition the way that Bruner and Piaget (and later, we learned, Vygotsky) went about their empirical studies and drawing conclusions
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I think Erikson liked having academic children and I was one of them.
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And after he finished the book on Luther, he began to study Gandhi.
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I was a student of his when he was going to India and learning all about Gandhi.
And I became convinced that Gandhi was the
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most important person in the last thousand years and Erik always used to say – and I don't know if it's true – he
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Said, "I wrote a book called *Young Man Luther* and then Howard said I should write a book called *Middle-Aged Mahatma*."
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and I got a kick out of it even though I'm not sure I said it. But we're talking
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now at a somewhat more abstract level about the influence of senior scholars who we identified
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with and who saw that we had some merit they're almost all men – in many cases
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in my case, they were of European background. Several of them were
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Jewish though, interestingly, neither Erikson nor Bruner talked about their

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Judaism -- that's another thing that's worth knowing historically and
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I've often wondered especially with the audience here probably everybody is younger than I am, how different my
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thinking would have been if I'd had a more varied set of scholarly role models. Fortunately, I had one who had as big an
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influence on me as anyone even though I had no personal relationship with her.
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As a college freshman, taking the required course in writing expository
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writing, my teacher (who was a real character) assigned a book called
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Philosophy in a New Key by a very excellent philosopher named Susanne
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Langer. As I said to Steve the other day, she would have been a professor here except her husband was a professor and
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there was a nepotism rule then that you couldn't both be Harvard professors. In *Philosophy in a New Key*, a book which I
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just wrote my third appreciation of 60 years later, she helped me understand how music
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worked, and because music is the other string in my life so to speak.
Susanne
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Langer had an enormous influence on me, and I wish I'd had more role models
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that didn't look and sound so much the way that I did.
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SP: Let's see, Nelson Goodman, who you have mentioned.
HG: Nelson Goodman was a
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philosopher, who studied
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analytic philosophy, logical empiricism – what we would now call the Vienna school.
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He came from Somerville, he went to Harvard College, but he wasn't in an in-group – yet he came at the time
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and this is a whole essay in itself (not one I've written) where modern art was really becoming known in the academy.
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Museum of Modern Art, modern ballet, stream of consciousness writing. Nelson was very affected by that, and his father ran an
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art gallery and Nelson claimed that it
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was the first gallery to show Picasso in Boston, and for 13 years Nelson helped
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his father run the gallery. Nelson also married an artist named Kathleen Sturgis,
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and then, after having a very traditional career in analytic
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Philosophy – writing articles and books that I don't claim to understand – one of his star students, as you probably know, was Noam
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Chomsky. And Nelson nominated Noam to be in the Society of Fellows which had enormous,
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broadening influence on just about everybody who was in that society and then, Nelson
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when he was about 60, combined his interest in analytic philosophy with his interest in art and wrote a book that's
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very important in aesthetics – that's the philosophy of art—called *Languages of Art* and in the end of that book, it's a
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300-page book, he speculates: maybe some of these ideas about how the arts work –
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how they operate philosophically, linguistic, psychologically, and analytically, might have
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some educational implications. And he then decided that he wanted to start a research project on this agenda. I
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went out to meet him – he was then teaching at Brandeis University and he hired a man

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named David Perkins along with me to be the first research assistants. I always quip we were unpaid,
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a tradition that we've carried on since then, but that's not true. This is
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1967 so it’s 56 years ago!
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I actually read the galleys of *Languages of Art* because it came out in '68. We called it the Bible,
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because it was so important in our thinking and Nelson ran Project Zero (PZ) for
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a few years and then he turned it over to David Perkins and me and we've been able to keep it alive ever since
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and one of the new directors, Liz Duraisingh, is actually here today and many other people who whom I work--
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what we tried to do in Project Zero was to think about the arts
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systematically using social sciences as well as humanities. Now, it's a
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much broader organization, we do many different things. But I mentioned earlier that my views about organizations were a
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combination of Goodman and Bruner because Goodman was tight-assed – if a
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meeting started at 10, it started at 10. If Mr. Pinker was invited to address the group, he would
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have 23 minutes to speak and then if Goodman didn't like it—as he didn't like
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another friend of mine, psychologist of art, Rudolf Arnheim he would rip him to shreds and
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and the rest of us sort of looked in awe. I hope that hasn't rubbed off in me that
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much but in those days, it was much easier to invite people and have them

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come and talk, so a lot of distinguished people came to PZ. Harvard wasn't quite as much centered in
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Logan Airport, it was centered much more in the area where we're
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where now seated (Harvard Square) and I mention this because it’s because of Project Zero and Nelson and me
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that in 1969, so again, a long time ago, we began to hear for the
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first time about the two halves of the brain which we call left (technically! 😊)
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left-half and right-half, and these were the time of split-brain operations which I think most of you know about where for
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the first time you could actually use research to figure out what the
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prepotent inclinations of the left hemisphere and the right hemisphere
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were because in split-brain patients, of course, you could deliver messages just to one or to the other half of the cortex.
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And so, Nelson and I invited a brilliant young neurologist named Norman Geschwind
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We invited Norman to talk to us about
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the two halves of the brain about which we knew absolutely nothing and I remember very vividly because it changed
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my life, I was just absolutely mesmerized by what Norman said. We were
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learning both from working with patients but also from techniques like dichotic listening and tachistoscopic presentation where you
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you could present messages just to one hemisphere and I was trying to understand artistry, and particularly
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what artistic skills were, but in normal people, people who don't have brain damage, those things are
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completely confounded -- they're very hard to study. But for example, composer Maurice Ravel had a left hemisphere tumor and there was another painter Lovis Corinth who had right hemisphere
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tumor. And when you saw what was lost with damage in one part of the brain you
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could infer the skill-breakdown which otherwise was very, very
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difficult to study particularly in the 1960s. So, I made the career choice which Steve already alluded to. Instead of going on in clinical
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psychology, instead of applying for a job in developmental psychology (the area of my doctoral study), I only actually applied for one job in
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developmental psychology I decided instead to do postdoctoral work with Norman Geschwind
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at the Boston Veterans Hospital—where I think may be the first time you and I met because you used to come over there,
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and I then spent literally from 1971 to 1991 working in an aphasia research unit
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trying to understand the breakdown and the development of different cognitive
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Skills, and Steve alluded to this:
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both Jerry Fodor who was probably Chomsky's leading student, a philosopher
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but also, Roger Brown who was our adviser both said in effect, "Why should you go over there and study aphasia? What can you learn
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from brain damage?"
And they were both totally wrong! And if and when we get to
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"multiple intelligences" I would never have come up with that if I hadn't spent years working with patients in a

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clinical setting.
SP: I'm going to add a few
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personal and historical codas to some of the people who we've talked about. Jerome
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Bruner's *MCOS* – Man: A Course of Study – was in some ways the critical race theory of its era
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in that it was leapt on by conservative politicians as inculcating the wrong
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moral message. I think in the late 70s and 80s it was actually debated in Congress when a number of
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politicians said that because it was teaching secular humanism, that was the evil of the day, it was talking about
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humans as products of evolution, denying the religious underpinnings of morality and so it was corrupting the
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young. Fortunately neither Jerry nor Howard had to drink Hemlock but that was the
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Accusation. Erik Erikson, you've all heard of whether you think you've heard of him or not because are any of
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you familiar with the phrase "identity crisis"? I think that was Erik Erikson's coinage, if I'm not mistaken and he
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had a theory that I'm going to drastically oversimplify that I think of
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as marrying Freud's theory of psychosexual stages with existentialism
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so that as you work your way through life instead of focusing on, you know, the mouth, the anus, the genitals, and so
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on as Freud would have it – you focus on different existential questions
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including identity in adolescence, as I recall.
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Nelson Goodman was in a tradition of witty and succinct
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writers in what's sometimes called the Anglo-American or analytic tradition in philosophy, and they were just great
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reading they were pithy and witty, and I still assign to our graduate students in
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the Cognition, Brain, and Behavior program at Harvard his essay called
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"Seven Strictures on Similarity." Goodman loved alliterative titles. Goodman tried to
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deconstruct – as we would say – the concept of similarity which he thought and I agree is overused in psychology and the
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article begins, "similarity is a pretender, an impostor, a fraud, a quack." Now, that's
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the way to begin an academic article in philosophy.
HG: Steve, let me just interrupt for a second. You remind me:
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Nelson said one of the most powerful things that anybody has ever said to me
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in an educational context. He said, "When I'm reading what somebody writes the first time and it doesn't make sense, I
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stop reading." And that made enormous impact and some of my victims sitting
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here have run into that. I am nowhere near is as artful a writer as him or indeed
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as you (SP) are. But if it's not clear – such statements that it
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may even have been an offhand—such warnings can haunt you for decades
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SP: I'll just give you an example of Goodman's own style of argument in this essay on the problems with
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similarity. He was arguing that it was context dependent and goal dependent and
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he said, "Suppose there are three beakers of liquid on a table and the
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first and the third are colorless and the second one is red, but it so happens
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that the first is water and the second is water with a few drops of
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vegetable color in it and the third is sulfuric acid and I'm thirsty. That
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was his way of illustrating that similarity is dependent on context and goals. Other philosophers might have
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taken pages and pages – he did it in in two sentences in an image.

Well, Project
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Zero is a good segue to the next question that I hoped we would
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discuss. So, you have been associated with two projects with humble titles, "Project
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Zero" as I understand it was so-named because that's the
34:35
amount of knowledge that the world had about art and education in that era so
34:41
HG: Systematic Knowledge
SP: Only slightly less
34:49
humble was another project that you were associated with, "The Good Project."
34:54
Not the Great project not the Excellent project but just The Good Project. Can you say a few words about the Good
35:00
Project
HG: Sure, I'm glad you brought it up, it's not as well-known as it should be but several people who are here
35:08
actually work on The Good Project. That takes a bit of history. I spent
35:15
these years at the Veterans Hospital and that's probably where my interest in
35:22
intelligence came from. And then
35:27

I moved more toward education, but a very important part of my life – and I think
35:33
maybe Steve knowing your life it might be also somewhat true – is what I call
35:39
"invisible colleagues," where there are individuals who may not be in the
35:44
same school or the same city, but you kind of find you're on the same
35:50
wavelength and so you begin to meet them and if you're lucky you get some resources so you can work together
35:55
I think your work in evolutionary psychology was probably I wouldn't say an invisible college, but one that you
36:01
brought much more to public attention.

And so I had two colleagues – both of
36:08
whom are very well-known now. Mihaly Csikszentmihalyi – best known for his work on
36:15
"flow" – which everybody knows about whether or not they know about Mihaly (aside: a mnemonic on how to remember the spelling of that name)
36:33
and Bill Damon, who is a moral development expert but now his conception of
36:39
what it means to have a sense of purpose has become absolutely viral in not just the educational world but business and the writings of pundits like
36:46
Adam Grant. We liked each other, we
36:51
were at different schools, colleges and universities, but we (Csikszentmihalyi, Damon, and I) arranged to spend a year together in Palo Alto
36:59
in 1994 and 95 to explore the
37:04
issue of whether you could be creative and humane at the same time. Now this is
37:11
kind of a commonsense question -- Einstein's a good example. If anybody was creative, it was Einstein, and you know, lots of good

37:22
things came out of understanding the nature of, and relation between, mass and energy but so
37:28
did atomic bombs and nuclear weapons more generally. So, we became
37:36
interested in the issue, “could you be both creative and humane at the same time” or did they kind of pull in
37:43
different directions. So, we met for a year which is you know how ideas often
37:48
gestate and then we developed something called The Good Work Project. We went
37:54
to six foundations, five of them had no interest whatsoever, but the sixth (The Hewlett Foundation)
38:01
gave us some money. Actually, at the time, I'm now remembering our incipient project had a different
38:06
name -- it was “humane creativity.” Nobody liked that name so then we called it “The Good Work Project” and now because
38:15
shortness is good we just called “The Good Project.”

But let me just say
38:22
two minutes about what we did. We first decided to study professions and
38:30
we asked people in those professions to nominate individuals who they really admired and we did over a thousand
38:38
interviews (between 1200 and 1500 depending on how you count them) and we
38:44
eventually studied eight or nine different professions and we came up with a very simple formula which in a
38:52
sense we now visualize, that doing good work has three components, it's
38:58
technically excellent; the people know what they're doing; it's personally

39:05
engaging; it's meaningful to them, they look forward to it, they don't dread it
and then it's carried out in an ethical
39:12
way. In every kind of work and everybody here does work
39:17
ethical dilemmas come up and you can sweep them under the rug, you can think, you can kind of quickly
39:25
jump to an answer and just stick with it; or you can spend a lot of time
39:30
contemplating it and deciding what's right and what's wrong, and both Steve and I are old enough to have had lots of
39:36
ethical dilemmas that we've wrestled with in work and in life. So, if you can
39:41
visualize better than I, we created a picture called the
39:47
Triple Helix – it's three intertwined strands – Excellence, Engagement, and Ethics, and
39:56
"good work" is the intertwining of those three attributes.
40:02
That was a straight social science study and we actually
40:08
wrote about 10 books—with collaborators!
40:14
And then the three PIs – principal investigators – took the work in different
40:20
directions and my colleagues-- several of whom are here today-, really became
40:25
interested in what does it take to become a good worker in college and
40:31
secondary school, and now we're actually working with very young kids in
40:36
a project which I named, "Wee/We Project" – how do very young
40:42
kids begin to think about what it is to work collaboratively with others and
40:49

if you want to know more (because I promised two minutes) just go to The Good Project website or Steve can ask me some
40:56
more questions – but a lot of my work now with my colleagues is trying to
41:01
understand the nature of good work and good citizenship and how to nurture it
41:09
and anybody who reads the newspapers or looks at any kind of a newsfeed knows
41:15
the world is in need of more thinking and more action about what it is to be
41:20
good, though we and other people work here on the notion
41:26
that good is not an uncontroversial topic! And I actually,
41:34
I think in different ways, Steve and I have both ended up as fans of the 18th century Enlightenment, though we haven't talked about where we
41:40
both stand on the Enlightenment, but it's probably a high point in
41:47
human intellectual and experiential life.
41:53
SP: Now Howard, for better or worse, when people hear the name
41:58
Howard Gardner, probably the first thing they think of is multiple intelligences. Now this is the theory
42:05
that you developed in probably your best-known book Frames of Mind which
42:11
posited that there are at least eight different forms of intelligence:
42:16
linguistic, logical, mathematical, musical, spatial, bodily, interpersonal
42:22
intrapersonal, and naturalistic. And introductory psychology textbooks love
42:28
Dichotomies, and all of them you look up intelligence the first thing I'll say is there are two theories of intelligence.
42:35
There's the theory of general intelligence or *g* and then there is Howard Gardner's

42:40
theory of multiple intelligences. Now, I'll show my hand, I think these are not incompatible that
42:48
the theory of general intelligence or *g* which is backed up by massive amounts of
42:53
data, shows that in differences among individuals in the normal range, all of
42:59
the different subtests of what we would ordinarily call intelligence are intercorrelated, that is despite the
43:06
sense that you might have oh you know, I'm a writer, but I can't balance
43:12
my checkbook or there's, you know, a math whiz but he can't get a sentence out, in general that's at least statistically
43:18
not true. If you are better than average in verbal fluency and vocabulary and
43:24
Comprehension, you're also going to be better than average in math and spatial reasoning and vice versa so
43:30
that's the basis of the theory of general intelligence.

The theory of multiple intelligences well, Howard will
43:36
explain has a different evidentiary base, but maybe I'll just start with a question. Are the textbooks right in
43:42
setting this up as a dichotomy or might they both be true about different things or in different ways.
HG: I'm happy
43:49
to say I don't spend a lot of time looking at the textbooks but you probably are insulting Robert Sternberg
43:55
who's also put forth a theory which is (called the) triarchic theory of intelligence
44:02
I think I've had three insights
44:07

about multiple intelligences, the last one just recently
44:13
within the last months or so…and my wonderful colleague Shinri Furuzawa
44:19
who's here today has helped me with this. The first insight in Frames of Mind was there was it was very useful to
44:26
think about a number of different faculties which I call semi-autonomous
44:33
and then you know 10 or 20 years later, I came to realize that it
44:40
wasn't enough to have an intelligence. It was important how that intelligence
44:46
was used and that's where my work in intelligence crossed with my work on the
44:54
The Good Project because any intelligence can be used benignly or malevolently so
45:01
the examples I use. Both Goethe and Goebbels were very skilled with the German
45:07
language. Goethe wrote estimable literature – you know poems, novels, so
45:14
on; and Goebbel's fermented hatred, and any intelligence can be used in
45:22
benign or malevolent ways, and I, of course, would like intelligences to be used positively.
The third slant on intelligence(s) – which gets
45:29
at the question that you're asking – is even I use the word "smart" and "intelligent" – my wife is here to
45:36
corroborate that – but when we use the word, we're implicitly highlighting what we
45:43
value and so
45:48
if I'm in the music studio and Yo-Yo Ma is giving a master class and he or
45:54
someone else said, "that cellist really, he handled that in a very smart way."
46:01
or if I'm in a tennis lesson and you say "Arthur Ashe"

46:09
“Boy, what a what a brilliant slam.” We may use the words intelligent or
46:14
brilliantly but we're implicitly talking about what it
46:19
is that we foreground, and I want to bring this very much to Cambridge, 02138.
46:26
If you have a meeting of faculty and they're trying to decide whether or
46:31
not to give someone tenure – if the person's in the English Department, when
46:36
they say he or she or they are very smart, it's totally different
46:43
than if it's the Physics Department even though we we're using the same word. So, I know you think
46:51
“Howard is ducking the question.” What I would say is the further out that
46:57
you go in any of these intelligences, the less correlated they are. At the extremes, we find they aren't very much correlated,
47:04
HG (continuing): But the way Howard Gardner thinks about it is, as long as you're using certain kinds of tests, in a
47:12
sense, you're looking at test mentality, and this is what I share with Sternberg who is the other psychologist
47:18
of our generation is: we were very traumatized by our test experiences
47:24
In Sternberg’s case, he claimed that he could never do well on tests and that's how he got interested in psychometric
47:31
intelligence. In my case, I was a terrific test taker. When I was 13, my parents who
47:37
did not have much money, took me to Hoboken, New Jersey to the Stevens Institute of Technology, and I was tested
47:44
for a whole week. In fact, for a whole effing week if you will (!) and at the end we were called in by some clinical

47:50
psychologist and they said Mr. and Mrs. Gardner, Howard's very talented, he could probably do most anything but his
47:57
greatest gifts are in the clerical era – which didn't mean this kind (points to the collar of a cleric) but I'm very good at checking boxes,
48:04
and so, I'm actually not interested very much in the psychometrics. I
48:11
am more interested in the brain stuff and of course now in the ChatGPT stuff and what it can do and what it can't.
48:18
I'm interested that we have different abilities and combinations of abilities
48:23
and what education and life should do is to help us find out what we're good at and how to use that productively, but
48:30
also, you know in a in a pro-social way – and maybe I'm wrong, I don't read
48:36
the journal Intelligence anymore – it's just not where I live.
SP: Would you relate the theory of
48:45
multiple intelligences to at least similar sounding ideas from cognitive
48:52
science. I'll list a few: Jerry Fodor had a book called Modularity of Mind
48:58
although he had only two modules rather than eight. In developmental psychology, as our colleague
49:06
Professor Elizabeth Spelke has argued there may be different domains such as theory of mind or
49:13
intuitive psychology or intuitive physics, intuitive function. The
49:20
metaphor from Noam Chomsky of mental organs and the metaphor from evolutionary psychology of the mind
49:27
as a Swiss Army Knife that it isn't just a hammer that the little boy uses to treat everything as a

49:33
nail but there are different tools for different functions. Are these congenial – are they getting at something
49:40
completely different?
HG: That's a wonderful question because whether or not it's on
49:45
your list, it's a segue to what we are going to talk about what synthesizing is
49:51
and well that's in a sense, what you've just done without even thinking about it. And we could talk at length
49:59
about how I think you did this but to answer your question,
50:04
I have not read Spelke's book but when I read a summary of it,
50:09
it sounds to me like those – I guess – "native modules" are very close to what it
50:17
is that I'm interested in. So I feel an affinity to that.
50:24
I wouldn't say it's
50:29
anti-Piagetian but it's non-Piagetian. It's both because it's not one kind of
50:34
intelligence or ability but also because it's present very early at a time that Piaget would have been
50:41
Surprised.

Yeah, (Jerry) Fodor put out his book Modularity of Mind about the same time
50:48
as Frames of Mind came by. I think that, you know, we were
50:54
both in a sense kind of big footnotes to what Noam Chomsky
50:59
Believed, but Fodor did it very much from a philosophical and intuitive
51:06
sense, and you know, my set of "intelligences" – right or wrong – were based on five years

51:13
of empirical research. And the one thing that really pisses me off is when people
51:18
say, “Oh, the theory of multiple intelligence is not experimental,” or
51:25
“It doesn't have scientific evidence.” I think when you spend five years studying
51:30
very various findings in a whole range of disciplines including neurology and
51:35
genetics as well as social sciences, that's highly empirical and it's
51:41
certainly synthesizing, but it's not experiments – because if you were going to if do
51:49
experimental research on multiple intelligences, and we did a little bit in
51:54
that direction, you'd have to do it in a very different way. You'd have to create environments, I always use the
52:00
example of a Children's Museum. You'd need to watch people over an extensive period of time to see what they like; what
52:07
they go to; and most important, as they explore what do they get what do they get better at. And that's not the sort of
52:13
stuff that at least until now you can do in a psych lab in in minutes.
SP: Okay, my
52:20
final question before we turn to a Q&A from the audience is the concept of
52:26
synthesis which enters into your memoir. Would you call it an autobiography or more of a memoir, it
52:34
spans your whole life.
HG: It's called an intellectual memoir
52:40
What's helped the book a lot is there's a very nice quotation on the cover by a man named
52:47
Steven Pinker, so thank you Steve.

SP: The question is: What is a
52:55
synthesis, or what is the kind of synthesis that we want. And I'll mention as a kind of comparison, another synthetic/synthesizing thinker
53:06
another big thinker, another public intellectual from Harvard, E.O. Wilson, who had a book called Consilience, a word
53:12
that he revived from the Age of Enlightenment, referring to the unity of knowledge that is that one could connect
53:19
all of knowledge including the arts and social sciences and humanities
53:26
with the sciences, largely through an understanding of the subject matter of
53:31
our field, psychology, human nature, that is that you could shed light on the arts, for
53:38
example, by asking how the brain
53:44
perceives beauty in landscapes and faces and colors and shapes. One could
53:52
illuminate history by the motives of leaders and
53:59
Influencers. One could even, and this is I think more controversial, illuminate
54:05
philosophical questions by the way in which we conceptualize the human mind
54:11
naturally conceptualizes ideas. Is that consistent with what you have
54:17
in mind for synthesis? Is it something that you would, in fact, run away from or oppose the notion of consilience?
54:23
You do you have opinions on our late colleague Ed Wilson.
54:28
HG: Just to give a headline there because I've actually written a
54:34
bunch of blogs on this topic. I admired Wilson a lot, but I think
54:41
consilience – it's too big an umbrella – and I don't mean this

54:48
unkindly, but by the time he was writing it, I think he was often
54:53
grasping for straws in ways which I didn't find convincing but, that's really
54:59
I don't want to talk about Wilson particularly.
SP: What do you mean by synthesizing? What do
55:05
value in synthesis?
HG: This will take a few minutes, but I'll try
55:11
to do my best to be succinct. When I began to write my memoir,
55:19
probably five or six years ago, I made a kind of disturbing discovery:
55:25
Namely, that my own theory of multiple intelligences, for which I was known and that's why the publisher wanted a memoir,
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didn't particularly explain me, because you've already heard I'm a good test taker and I kind of am a typical
55:39
scholar – with a language and logical mind, with music as kind of a bonus.
55:46
So, I said, "Well, what kind of a mind do I have, and I realized that at least
55:53
using the lay term I have a *synthesizing* mind – I then went and did some research about myself and I found that
56:00
as early as 1973, in the book I wrote about structuralism which you mentioned, I called it a
56:06
a synthesis. I then, when I was writing about getting this MacArthur
56:12
Award, I also used the word "synthesis' and then, and this is better known, Murray Gell-Mann, who is a great physicist – you
56:20
probably knew him – said in the 21st century, the most important mind would be the synthesizing mind, so
56:27

that really clicked for me. So in my memoir A Synthesizing Mind, I throw
56:33
out some speculations about what it is that I do and how I do it. What I had
56:39
never expected – and this is one of the wonderful things about being a scholar and I hope some of you in the audience are or want to be
56:46
scholars – is I never expected I would be obsessed with what synthesizing is and
56:51
ever since then, I think about it all the time, I write about it all the time, I have dozens of blogs on the topic, and if
56:59
somebody would have come from heaven and drop several hundred thousand dollars on my
57:05
research team, we would go out --
SP: They already did that, it's called a MacArthur Grant!
HG: We would study it
57:13
empirically. The limit for now – and this is what I alluded to before and I'll talk a bit about it – is that my major research subject is me!
57:21
And so, I'm going to talk about my own sense of synthesizing, and I'd love to hear because we haven't talked about this
57:28
what resonates with you. First of all, I read a lot when I was
57:34
young. I read almost everything all the magazines, all the books in my
57:39
parents house, but there weren't many books there. I followed all sports and
57:45
all cultural media (I would get a zero in any tests beyond 1980 on those and
57:54
on the crossword puzzle I allow myself to cheat when it's about cultural stuff or sports
57:59
stuff because I just don't know those things at all.)
58:05
As a child I was like Stephen Jay Gould and other people -- we memorized countless athletic records

58:11
but I actually subscribed and paid money for the Nielsen ratings for
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television to see every rating that every program got, so my mind was
58:23
just filled with junk. This is an analogy I came up with
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which I like. When I was young, and it doesn’t happen anymore, it was
58:34
like a grocery store and I found a place for everything in the supermarket – not a grocery store – and I knew where
58:40
everything was, but I could move it to another place, it was like a chess move,
58:45
and I could move it back, but I could also duplicate it or leave it in the new place or so on. So, I just have a lot
58:52
of stuff in there – some of it's junk, some of it's okay, some of it is precious.
58:58
So, that's number one: having some kind of a supermarket (orium) if
59:05
you will, and this is where I think human beings are different from large language instruments, there's
59:13
something that I become really interested in and I want to know about. So, I read voluminously, I talk
59:24
to many people, and of course I draw on what it is that I already know,
59:29
but – and this happens to me even as I enter my ninth decade – I read a lot a lot of books and magazines – I read something,
59:35
I say to myself, “My God, this relates to what I'm interested in,” and I make a list about it. Now, it may not make the final drawing,
59:43
but it's there. And then, and here this, I have written about a lot in many
59:49
blogs – I then have to have a way of organizing this stuff – I am an inveterate taxonomist so I'm,

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continuously making marks, making charts, and moving them around and having different headers and
1:00:02
having different number of – you know – slots and so on, but I have a colleague
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in Australia, Anthea Roberts – and she does it all pictorially and visually and
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she has a metaphor of *the dragonfly mind* which is a thousand, indeed 10,000
1:00:19
different visuals. So, people who are synthesizers organize and reorganize in different ways and then, it's very
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easy to fool yourself that it makes more sense – so I have a wonderful editor.
1:00:33
My wife, Ellen (Winner), and wonderful colleagues. And when I write something I
1:00:38
say, you know, "Critique it, don't be nasty, but let me know what I missed, what
1:00:44
I got wrong, what I got right, and then you (Steve) and I both go through this --
1:00:50
the draft goes through as much feedback as we can before the need or the pressure to get it out prevails.
1:00:58
And then, when you mentioned what you're writing about now, it's not something I expected you to do, and every time Steve Pinker comes out
1:01:04
with a new book – which is every few years – many of us are surprised about what it is about now. You might say, how does this
1:01:11
relate to regular scholarship, especially at elite schools. First of all, I'm a
1:01:20
book writer rather than an article writer. I became convinced 40 years ago, there were many people who did empirical
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experiments better than I did or as well as I did, but there weren't very many people who wrote books. So we are book
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writers – but the other thing is that I think many people are more

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analytically oriented; they like to find a topic and go deeper and deeper into it. I heard a lecture about somebody who
1:01:46
spent 40 years studying the retina. Now you probably could spend 400 years on the retina, but I couldn't spend 400 years on
1:01:53
on the retina. And something about colleagues is that I have colleagues who have as many interests as
1:02:00
I do, but they don't talk about it and it only comes out by accident that they're a classical music fan, right? Or that with
1:02:08
their grandchildren, they go to every Children's Museum they can, but never volunteer it.
1:02:13
But I think that synthesizers are more likely to take things they're interested in and
1:02:18
at least write about it – if not a book, a bunch of articles – and many scholars find it better, especially before tenure, to
1:02:25
stick in one lane. And you came up with a very useful metaphor the other day about
1:02:30
how you and I "don't stay in the same lane," and it's easier to do after you have tenure than
1:02:37
before
SP: Indeed, and I advise my younger colleagues to specialize, to write in
1:02:43
peer-reviewed referee journals, and then write your synthesis, or
1:02:48
reach out to the public, even though, as you say, we both have tried to have the right
1:02:54
mixture of technical academic articles and broader books, but it's actually the books that get most of
1:03:00
the citations in the academic literature, I've found. Well, we've covered a lot of
1:03:06
ground and all of you if you're here must be
1:03:11

interested in one of the many topics that Howard has studied or written about.
1:03:16
If you're interested in mind, brain, and behavior, you're interested in the work of Howard Gardner. So, I'm
1:03:23
inferring that many of you must have questions and now is the time to ask
1:03:29
them please. Or
1:03:35
Comments. We don't have a roving microphone, so you'll have to project.

Q&A Section:
After 1:03 (Question #1)
Can intelligence be improved?
1:04:54
I think as a general answer of course, it's better to start when you're young, and better to
1:05:00
have a supportive environment. I mean, there are very few young people in
1:05:07
Finland or Hungary who would be described as tone-deaf and many of them can even do solfege and it's not because
1:05:15
Finland and Hungary have radically different genetic pool. It's because they teach music from
1:05:23
very young age, and it's important for people to be able to do solfege, and so I
1:05:29
think that a lot of our intellectual faculties either are
1:05:36
nurtured or not depending on how early we start to work on them, what
1:05:41
kind of support we have. I always quip up about myself I'm still working on my
1:05:46
personal intelligences, and it's up to other people to decide about that. But
1:05:51
obviously, I mean, everybody here knows that when you're older, it's harder to do
1:05:57
something new, you have to practice more. But you also often do it more in
1:06:04

conversation with yourself. For example, I play the piano every day, it drives the neighbors nuts, but it's important to me
1:06:12
and in some ways I am developing my musical intelligence, though it's probably not the way that Jeremy
1:06:18
Eichler, the critic, would like.
SP: There is a literature on the
1:06:24
malleability of intelligence, and this is intelligence in the psychometric
1:06:30
sense of how well you score on tests of vocabulary and mental
1:06:38
rotation and analogies and comprehension and so on, and what it finds is
1:06:43
intelligence is pretty stable over the lifespan, statistically, that is the kids who score in the close to the top of the
1:06:51
class when they're in elementary school will also score near the top of the class when they're in high school
1:06:57
and will score better when they're adults. But of course, not perfectly, and within a range
1:07:03
presumably, in good part, genetically influenced, there is a fair amount of
1:07:09
wiggle room. Kids, for example, lose intelligence over the summer and then
1:07:15
regain it when they go back to school. There's been a society-wide increase in
1:07:20
intelligence known as the Flynn effect, where IQ scores through most of the 20th
1:07:26
century rose about three points a decade. There's some sort of debate over
1:07:32
whether this is the so-called general intelligence and it seems not to be, that is, it isn't the case that over the
1:07:38
course of the 20th century, people got bigger and bigger vocabularies. But rather, actually it's a form of
1:07:44

intelligence that turns out not to be, as far as I can tell, among Howard's eight multiple intelligences. And this is a
1:07:51
capacity for abstraction, for kind of hypothetical,
1:07:57
scientific-like reasoning. Maybe it's close to what Piaget would call formal operations, that is, to set up a
1:08:04
Hypothetical, counterfactual rule-based world and reason within it. That
1:08:12
seems to be what is increased, but in general, the answer is, intelligence can't be arbitrarily
1:08:20
Increased. You mentioned Murray Gell-Mann, someone once described to me in the following way: He has seven brains, and
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they're all smarter than yours. I'm never going to become Murray Gell-Mann, very few people in
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this room will no matter how much you practice. On the other hand, it doesn't mean you're fixed to a particular level
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either. If there were, why would we have school?
HG: But let me simply say, you know,
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given children or grandchildren, we would all rather have them have high IQ than
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low IQ, but there's a society called Mensa, which you can't get into unless
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you have a high IQ and my quip about Mensa is that people there spend most of
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their time congratulating themselves on how they how well they do in
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tests. And in life, it's not important how well you do in tests, it's important that you develop skills which increase,
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and you find a niche for them, and this can be vocational or avocational, and the
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you know, the search for the golden way to a higher IQ is

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I think a fool's errand, and yet many societies are on that
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errand, and I think it's very damaging. I used to say, we should
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spend less time testing people and more time trying to help them find what they're good at, and how to use it, but I
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certainly haven't won that that battle.
1:10:00 (Question #2)
Reflect on your experiences with neurologist Norman Geschwind.
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HG: Well, I think one thing which we touched on is mentors can
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affect you just by their work, like Susanne Langer had a big effect on me, but I had no relationship with her, and
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of course, anybody who's dead before you uh start working. I did get to know Piaget
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a bit. But when it comes to people who are alive, their personal impact is very
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Important, and even though there were many scholars at the Boston VA who were at least as productive in neuroscience
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as Norman. He would have filled this auditorium for hours because of
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his knowledge and wit and so on. So, he had an enormous impact on me, and I'm proud that we actually wrote a few
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articles together. But no, when you're in your social sciences, and this
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gets back to Soc-Rel for a minute, the social relations. Whenever somebody
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introduces to you a new way of thinking that you'd never thought about before,
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it's very powerful. So I mentioned Erik Erikson before. I grew up as an American German-Jewish parents, and when I read
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what Erikson said about going up, he called it a Nazi childhood, and about growing up in Russia. Maxim Gorky, and
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then growing up in the Native American thing, I said, “My God, people don't all grow up like me, they grow up in
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entirely different ways.” So here's Norman, every week on Thursday, a patient
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walks in as they do in rounds probably even today, and Norman interviews the
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patient for a half an hour or so, and initially, we didn't even have CT scans.
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Then, we went from CT to MRI and then we all try to guess where the lesion is and
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that be that was I mean, the game but, a serious game, you
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know, what's the brain damage and what kind of intervention
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can you do. And I was, in fact, involved in two attempts to help patients. One was called Visual
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Communication, or VIC, and the other one was called MIT, Musical Innovation
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Therapy, trying to make use of other intelligences, so to speak, for people who were of aphasic. Interestingly, Norman was
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not better than other clinicians at saying what the legion was. In fact, both
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Harold Goodglass and Edith Kaplan were better, but Norman could synthesize in a
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way which nobody else could. He could draw on literature, he could draw on
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other medical specialties, on other interventions, it was amazing.
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Thank you for asking that question.
SP: Any of you taking introductory psychology are familiar with one of Geschwind’s syntheses
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because the way that the brain basis of language is always described in the

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textbooks and taught undergraduates is, there's Wernicke's Area, and that's involved in recognizing words, and it's connected by
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the RQ at fasciculus to Broca's Area and that's involved in articulation of fluent speech that was the Geschwind Model.
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Sometimes, the Wernicke-Geschwind Model, and the first thing you learn in graduate school is why the Geschwind Model is wrong. But,
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Geschwind was the one who put together a huge literature spanning more than a century in effects of brain lesions
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on language in the model that all of you were probably taught as undergraduates. Another question?
1:14 (Question #3)
How does Artificial Intelligence relate to Multiple Intelligences theory? Relate to ChatGPT and other Large Language Instruments
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That's a good question which I don't have a good answer to, and I'm going to spare
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everybody. How does AI relate to multiple intelligences, especially in the
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more powerful AI, is that your question? Yeah, I've written a
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bit about this, I'm going to turn the question mostly over to Steve. I would
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simply say that, to me, intrapersonal intelligence, understanding oneself, I
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Mean, to me, that would be a category error, because I don't think that
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programs have selves in the way that human beings do, but I think any other
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attempt to measure things, as long as we feed enough relevant information to a
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large language instrument, that instrument would pass the Turing Test – we wouldn't be able to tell it from
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human beings. But this is much more 21st century cognitive science.

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SP: It's very it's early in the game, because ChatGPT, the most powerful of the large language models, was only
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released in November, barely a year ago, and I think the debate is going to
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happen in cognitive science as to whether its completely surprising
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ability to generate fluent speech, to provide intelligent answers to a
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vast array of questions without being pre-programmed to have specialized
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modules or intelligences, if you will, at least in spatial and
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linguistic and logical abilities, comes as a surprise. The question is, does it
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actually reflect on how the human brain achieves intelligence,
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given that it was trained on what would be the equivalent of tens of thousands of years of experience, and as my
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former collaborator and student Gary Marcus repeatedly points out, it makes
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some astonishingly stupid and very unhuman errors, precisely because it does
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not have any knowledge in the sense of propositions that represent
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facts – people, places, and things. Because it aggregates statistical patterns, a mindboggling number of
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statistical patterns, and has a mindboggling number of parameters in which it can store those patterns, is
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that a kind of surrogate or substitute or kludge for intelligence that, on the one
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hand, is powerful if you have trillions of them, but it does so in a
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way that is qualitatively different from how our brain does it. That's I think going to be an important frontier of

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cognitive science over the next few years. Another question?
1:17:12 (Question #4)

Can AI be used to improve human intelligence?

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SP: So, the question is about using AI to boost human intelligence to work alongside humans, where AI would be a
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tool. Would that be a fair way of reframing your question?
HG: Whether or not we like it, there's no way we're
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going to stop it, unless we become a dictatorial society, which I don't think
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anybody here would favor. I think it, to me, the question which I alluded to
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earlier is, since these instruments can often do many things better than
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human beings can do or can ever do in what ways will that change what we can
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and should do in the development of human beings and in the education of human beings? And my colleague Dave
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Perkins, who was the co-director of Project Zero use the same word that Steve just used. Namely, we have
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experiences, and we have a lifetime of experiences, and in fact, this is kind of a trip down, the walk down the lane with
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names like Erikson and Brown, which I haven't heard in decades, are very much a
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part of me, just like you all know that when Proust’s character
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sat to have tea and ate a cookie, it brought back memories from his
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childhood, things that one has forgotten. Those sorts of things, it doesn't make
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sense really to think of them as anything that can be done, anything except simulated, they have nothing to do
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with the experience of the large language instrument, in any sense that we
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mean experience, but how that should be used educationally, and I'm at a school of education, and I actually with
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Wendy Fischman, who's here, you know, did a big study of college. The other prop here is our book, The Real
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World of College, please buy several copies each. There's a real question
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now of whether people should go to college, and if so, what to accomplish in
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college and it then reflects back to well, what do we do in high
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school, and in the privileged high schools which Wendy and I know a lot about, the whole notion is to get into
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college, and then when you get into college, it's to get a high-paying job.
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This is not what John Henry Newman did when he wrote about the idea of a university, so the whole question of
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knowledge which I think has attracted so many people to the academy, and probably today, coming to hear an old man and a
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somewhat younger man talk, it's not clear that this is what will be
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valorized around the world. I just, you know, young people here will get to see
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it. I mean, Wendy and I are editing a volume of *Daedalus* on innovations in higher
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education around the world with Bill Kirby, who many of you know is a Chinese
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historian here. And in the 19th century, Germany was the model for universities
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and colleges. In the 20th century, it's United States. Now the question is what can we learn from other places? Kirby, of
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course, is interested in China but here's what I'm wandering toward. We're going to be pushed to
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rethink education from cradle, at least through middle adulthood in ways
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that would have been inconceivable until recently.
SP: Yeah, I've given, while
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we were talking, what Howard said reminded me of a further answer to the question of whether the power of large
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language models obviates the need for modules, faculties, multiple intelligences.
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And I think it does not, and I'll just give some examples. We, despite the remarkable powers of GPT, it still
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can't drive and we've been waiting for self-driving cars, they're supposed to arrive in 2014 and 2017. You can't put ChatGPT
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behind the wheel and suddenly solve the problem of self-driving cars which is an extraordinarily difficult
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problem that involves, of course, spatial intelligence and bodily
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kinesthetic intelligence and it also, these models sometimes show
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astonishing and indeed disturbing absences of interpersonal intelligence,
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as in the case of a reporter when these models first came out who
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faked the question to one of these models, I'm a 16-year-old girl and I just got an
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invitation from a 37-year-old man to take me on a cruise for my birthday.
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Do you think this, what do you think? And it replied, oh well a cruise can be very educational for a young person, and
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just kind of lacked the elementary common sense that this is rather creepy, so you know, that such is

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creepy, of course, is a kind of interpersonal intelligence, and that is another huge gap and indeed, most of
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the accomplishments are probably in the realm of what we call logical-mathematical
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intelligence.
1:22:51 (Question #5)
(Prompted by the mention of physicist Murray Gell-Mann) Can the synthesizing mind block other kinds of mental operations?
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HG: I think that there are
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two things. One that he/she/they need to have a project, but then, this is where
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the Gell-Mann thing is interesting, they need to have a mode with which they can
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present it to other people and even though Murray was great in (short things, he lacked)s the sitzfleisch, to use a technical
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term, of sitting down and getting an editor saying this doesn't make sense and this belongs here rather than here,
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the sort of thing we learned from Roger Brown, that's a different kind of skill.

One of the questions,
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one of the things I've thought about a lot recently, you know, if I were young
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and had to reinvent myself in the 21st century given what I now know, what
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might I be, and I could be wrong about this, but I said I might become an editor, because I think that's what
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Murray Gell-Mann just couldn't do was edit, and that means not just taking a lot of
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stuff but figuring out how to present it in ways that are going to achieve the goals that you have. But of
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Course, there was no necessity for him to do that. This brings us back to E.O. Wilson in a sense. E.O.
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Wilson like the two of us was an inveterate writer. He wrote one book after another and they were bestsellers
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in a way that certainly I haven't experienced. But the reason I
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didn't like his most recent books
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was because I don't think there was enough analysis in there. He said, you know, I'm going to take a look at a
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poem or piece of music and I'm going to tell you what's going on, and people spend their lives trying to figure that
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stuff out and it just seemed to be very superficial. I think if he'd been 25 years younger that would have been less
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likely to happen. So synthesizers have to decide what not to include, what not to
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fit in, and then they can decide whether they want to go to it. I've reflected
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on projects of mine which didn't finish and I started at least two
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biographies and the raw material is still there, but I just realized I wasn't
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up to it – very different reason. One was Mozart, I decided there was much more to say about
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Mozart than I had to say. The other was someone, a biography I was writing with his permission, of Carleton Gajdusek, who
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was a Nobel Prize winning virologist, certainly one of the most brilliant
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people in any sense that I know, but he then got arrested for
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Pedophilia, vis-à-vis your example of the 37-year-old coming on to the
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teenager and I just felt that I couldn't do that, so sometimes, even when
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you have a project you want to carry out, reality intervenes and you just can't carry out but I
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think having some resilience is helpful.
SP: Why don't we take one more?
1:27:08 (Question #6)
Can education help you find a niche in the world—a world increasingly dominated by AI?
HG: Well, I'm at a school of education so
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I guess I should have an answer to that question.
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SP: We're waiting, Howard.
HG: Yes, well, this is actually a very
1:27:53
serious question, because it's much easier to help you find a niche from
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which you will get personal satisfaction, whether it's family or friends, or as I
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Mentioned, in my case, music, which is so important to me, the arts, more generally,
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probably the oldest autobiographical thing about me is for many years I was in the board of the Museum of Modern Art,
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the only pauper in that place, but what's much more difficult now is your
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work niche, and that's what the group of people here from The Good Project
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are working on all the time because the work topography
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is changing enormously, and a study which was just posted, I didn't read it yet, but
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my friends told me about it, by Rick Weissbourd, said that the
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the most stress in mental health now in our country is not among teenagers as I would have thought, but rather among
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kids in their 20s because I think the topography of work is changing so
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radically, particularly for people who are here who would want to have work that wasn't strictly punching a clock,
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service kind of work, so I guess my non-answer to your question is
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that we need to be much, much more aware of the personal and vocational
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opportunities available in the 21st century and how education, which has, of
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course done many, many good things since the Greek era and since the founding of universities, how it may need to be
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rethought fundamentally. And in my conversations with our dean, I say this is
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a question and one of the questions that a school of education ought to be focusing on
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much more than it has until the past. Now, Steve, I believe you were on the
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curriculum committee at Harvard for the figuring out what kids in college should do and that was something which took
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decades right?
SP: Yes, and did not really lead to much of a change from
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what had come before to the frustration of some of us. Howard, you've had a remarkable
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Career, covering an astonishing range of topics, and you have given us an
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astonishing range of comments, opinions, reminiscences, educational moments
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this evening, so I would like to join the audience in expressing our appreciation for what you've done and expressing our
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appreciation for the insights that you've shared with us this afternoon. Thank you
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Howard.

1:31:02
HG: It's been a privilege for me, I'm very grateful to MBB for having this
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series, and for accepting my suggestion rather than hearing me drone
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for an hour about synthesizing mind alone, having Steve, who I respect so enormously,
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and has both an exquisite synthesizing, but also analytic mind, to
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lead the conversation, and I can hang around for a little bit if people want to ask me things, which I can hear.
1:31:37
Come on up, thank you again.