



# ARTSFUND

Twenty-Ninth Annual  
**CELEBRATION OF THE  
ARTS LUNCHEON**  
05.04.17 THE WESTIN SEATTLE





Keynote Speaker  
**Steven J. Tepper**

ARTSFUND



Twenty-Ninth Annual

CELEBRATION OF THE ARTS LUNCHEON

05.04.17 THE WESTIN SEATTLE



**Dean Steven J. Tepper**

ASU Herberger Institute for Design and the Arts

**Creativity, Education and Work in the Age of Anxiety**

# Doodling is good for your memory



'A tornado of evidence...a blast of good sense'  
*The Economist*



Ten Reasons to Look Forward to the Future

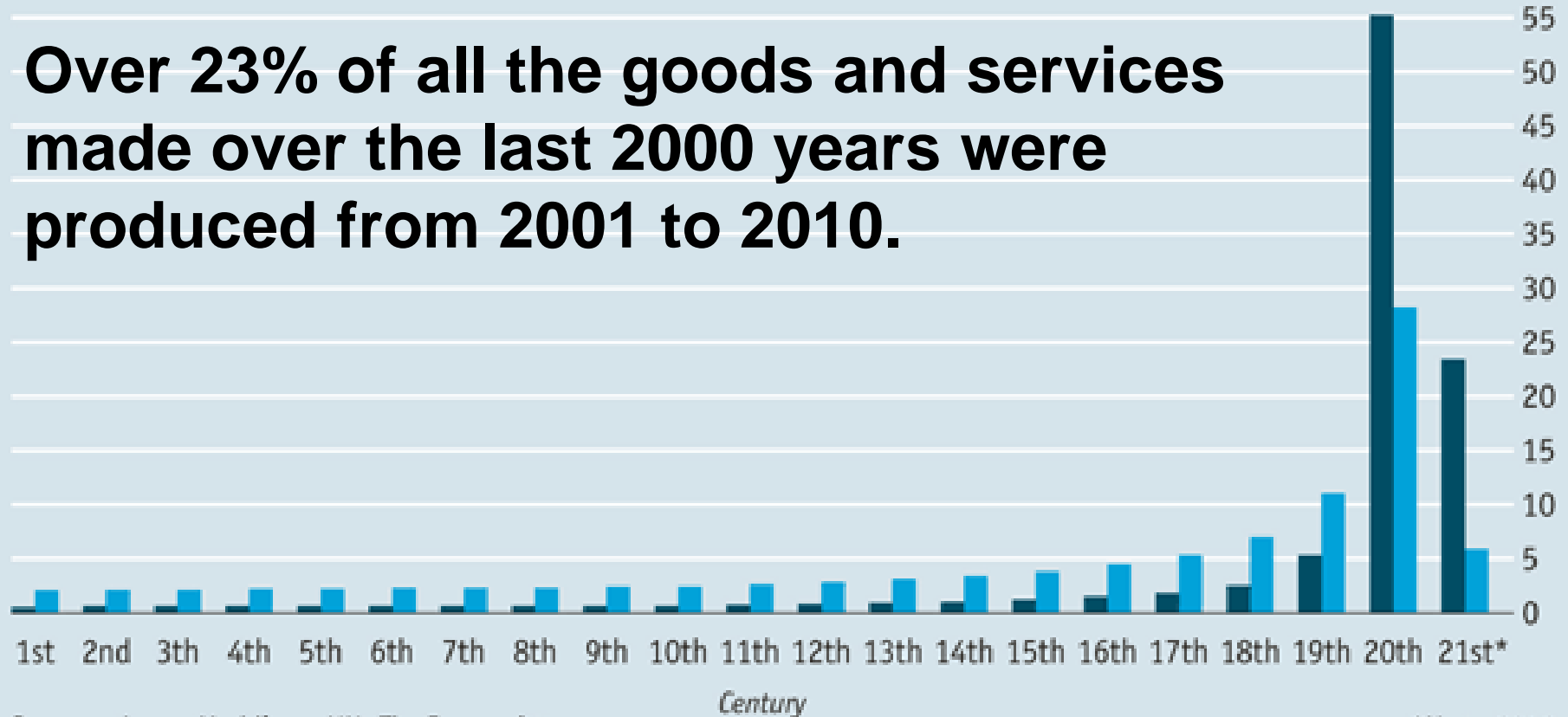
## When history was made

Percentage of total:

■ economic output (1990 \$)

■ years lived

**Over 23% of all the goods and services made over the last 2000 years were produced from 2001 to 2010.**



Sources: Angus Maddison; UN; *The Economist*

\*Up to 2010





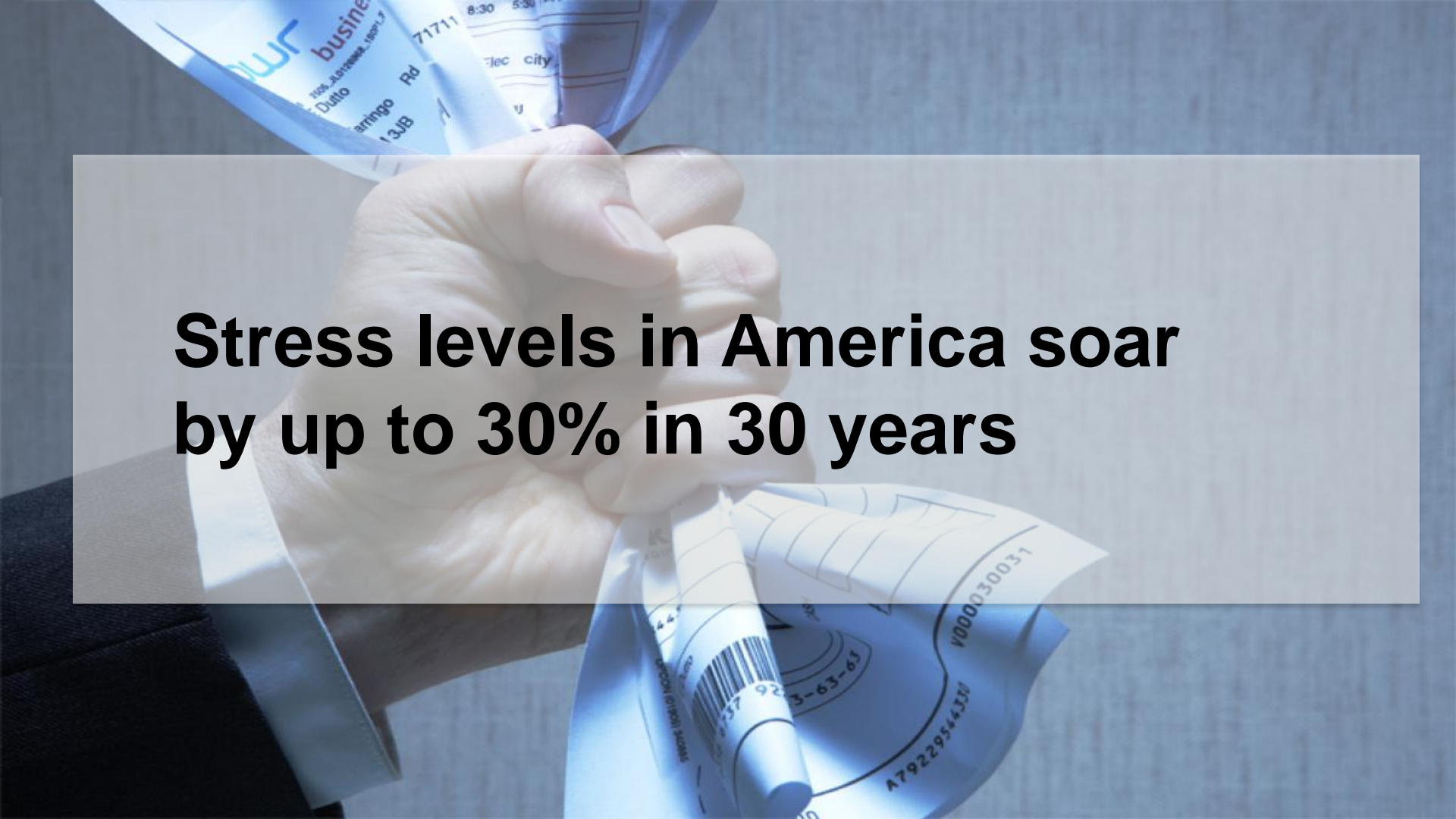
**50%** of the world's population was under nourished in 1945; by 2015, that number had fallen to **11%**.

- In 1800, 12% of world's population could read and write; today, 85%.
- Since 1900 the global average life expectancy has more than doubled and is now approaching 70 years.
- Global rate of extreme poverty has fallen from 43% to 20% over the past 15 years
- Now 68% of the world's population have modern sanitation; up from 24% in 1980



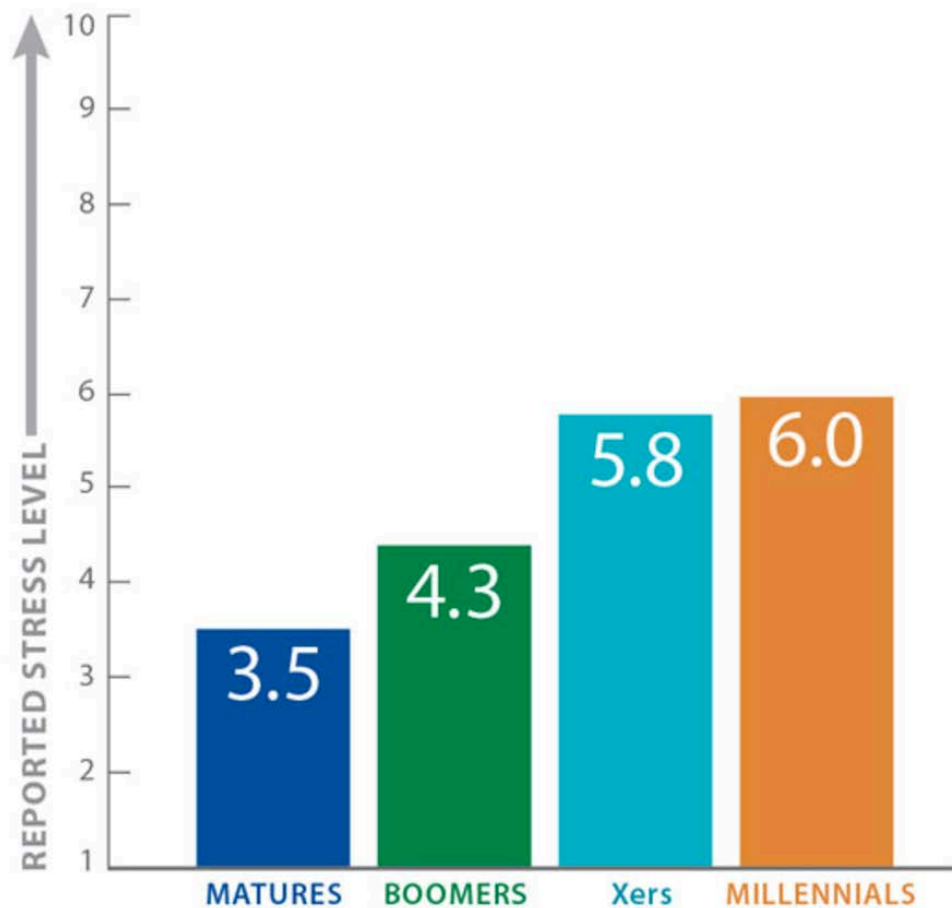
In the history of the world, we have never been safer, healthier, wealthier, better educated, connected, and productive than we are today.

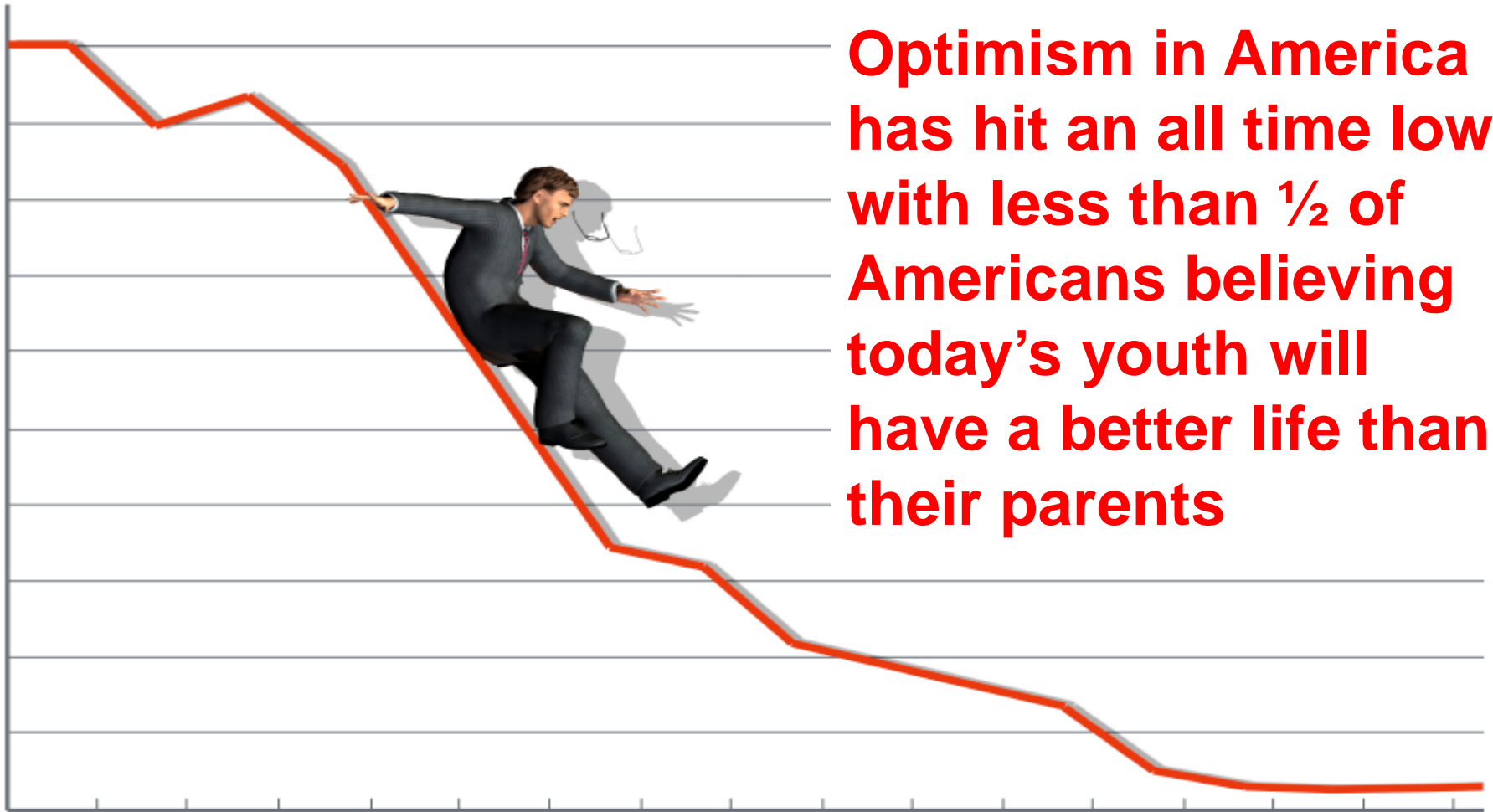
**Yet...**

A close-up photograph of a person's hand holding a blue pen over a document. The document contains various text elements, including the word 'business', a phone number '71711', and a barcode. A semi-transparent white rectangular box is overlaid on the center of the image, containing the main text. The background is a textured, light-colored surface.

**Stress levels in America soar  
by up to 30% in 30 years**

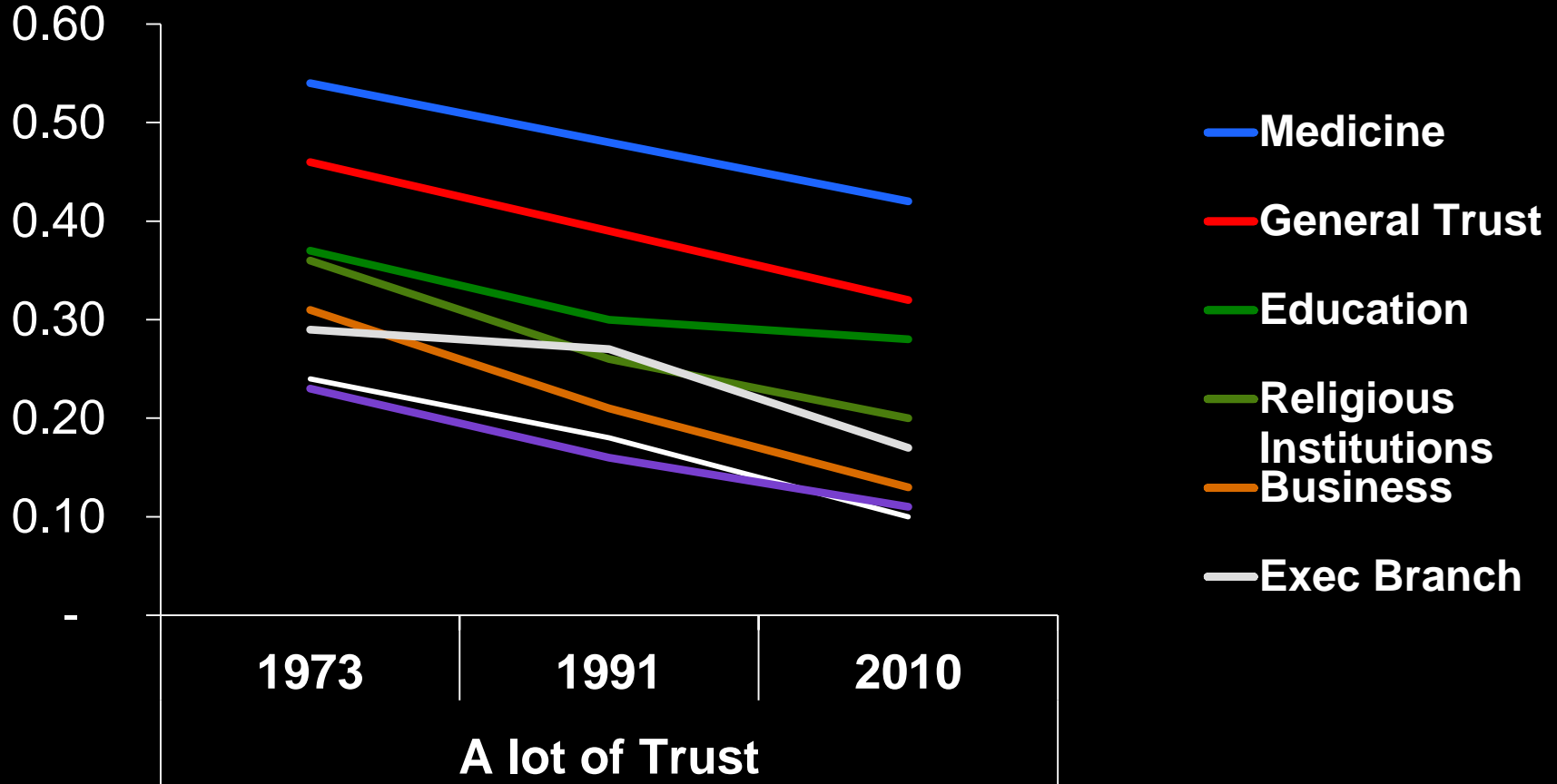
# AVERAGE STRESS LEVEL BY GENERATION





**Optimism in America has hit an all time low; with less than 1/2 of Americans believing today's youth will have a better life than their parents**

# “Trust No One” X-files



- Some 71% of Britons think the world is getting worse; only 5% think it is improving
- 81% of Donald Trump's supporters think life has grown worse in the past 50 years.

*--The Economist*





**The accelerated rate of change is  
the single greatest challenge  
facing our world.**

An aerial photograph of a modern city skyline, likely Dubai, featuring several prominent skyscrapers and a multi-lane highway. The sky is clear and blue. A semi-transparent blue banner is overlaid across the middle of the image, containing text.

**The rate of urbanization is equivalent to the construction of a city of a million people every five days for the next 40 years.**



An aerial photograph of a modern city skyline, likely Dubai, featuring several prominent skyscrapers. The buildings are densely packed, with a mix of architectural styles, including some with unique, curved or tiered tops. In the foreground, a multi-lane highway with several lanes of traffic is visible, along with some lower-rise commercial buildings and parking areas. The sky is clear and blue, suggesting a bright day. A semi-transparent blue banner is overlaid across the middle of the image, containing text.

**In the last 3 years, more cement was poured in China than the entire 20<sup>th</sup> century in the US.**

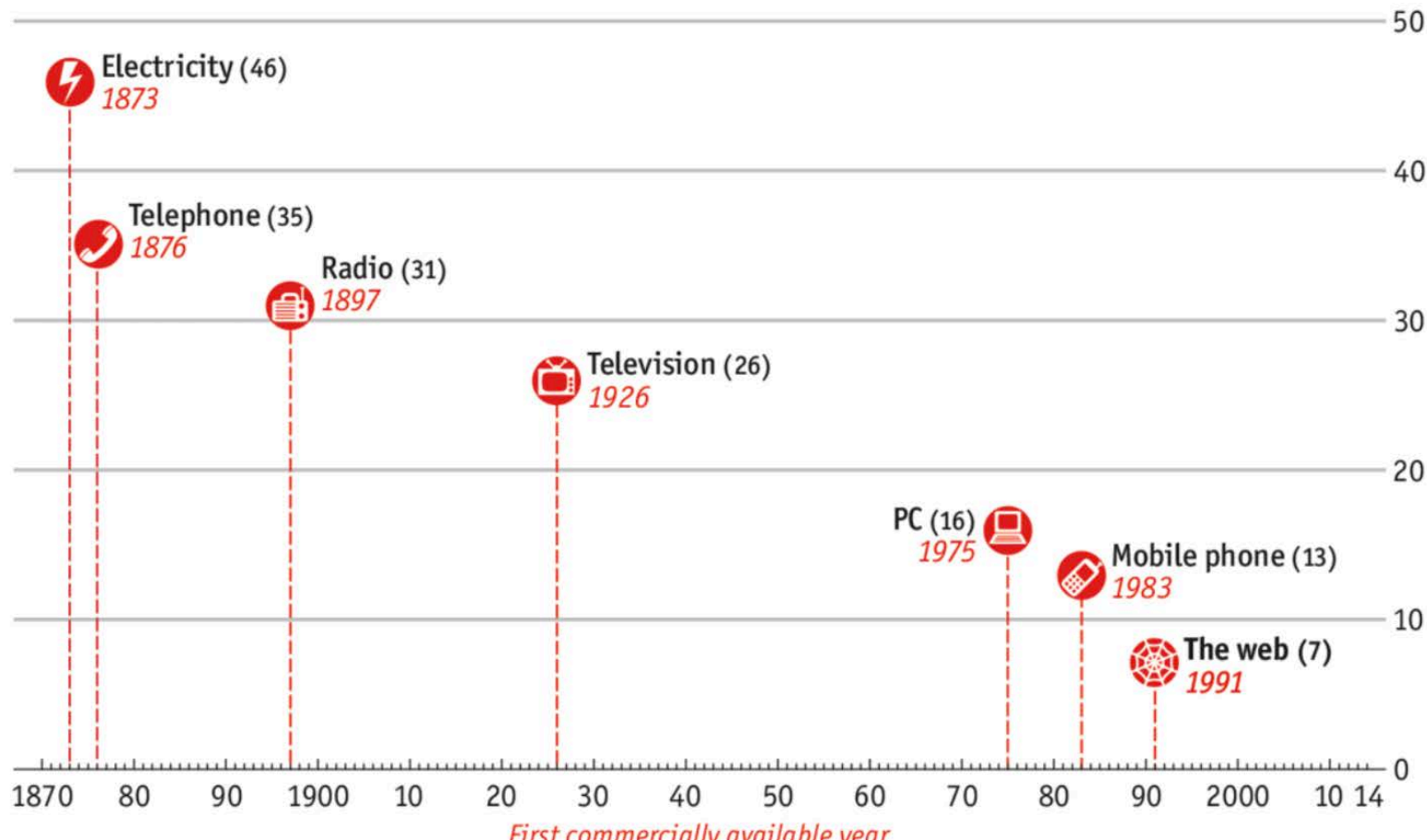
By 2020, a \$1,000 computer will have the processing power of the human brain. By 2040, a \$1,000 computer will have the same computing power as the whole human race combined.

--Ray Kurzweil, *The Age of Spiritual Machines*

# Technology adoption

Years until used by one-quarter of American population

Source: Singularity.com/  
Economist.com/graphic detail



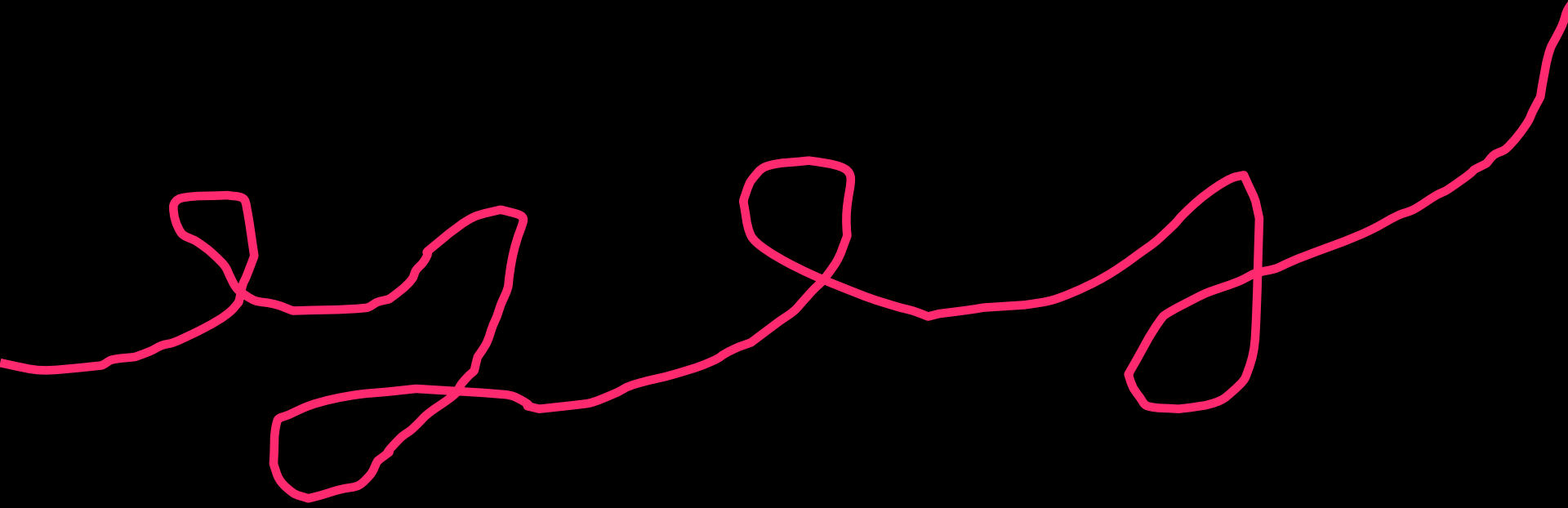
“**47%** of today’s occupations will likely not exist in the next few decades...”

—The Economist



# Nonlinear Career Paths

25% of 18–44 year olds have held 15 or more jobs in their lifetimes (the average number is 11 jobs)



# Demographic Change

**In 2010, non-whites make up majorities of babies in the US**



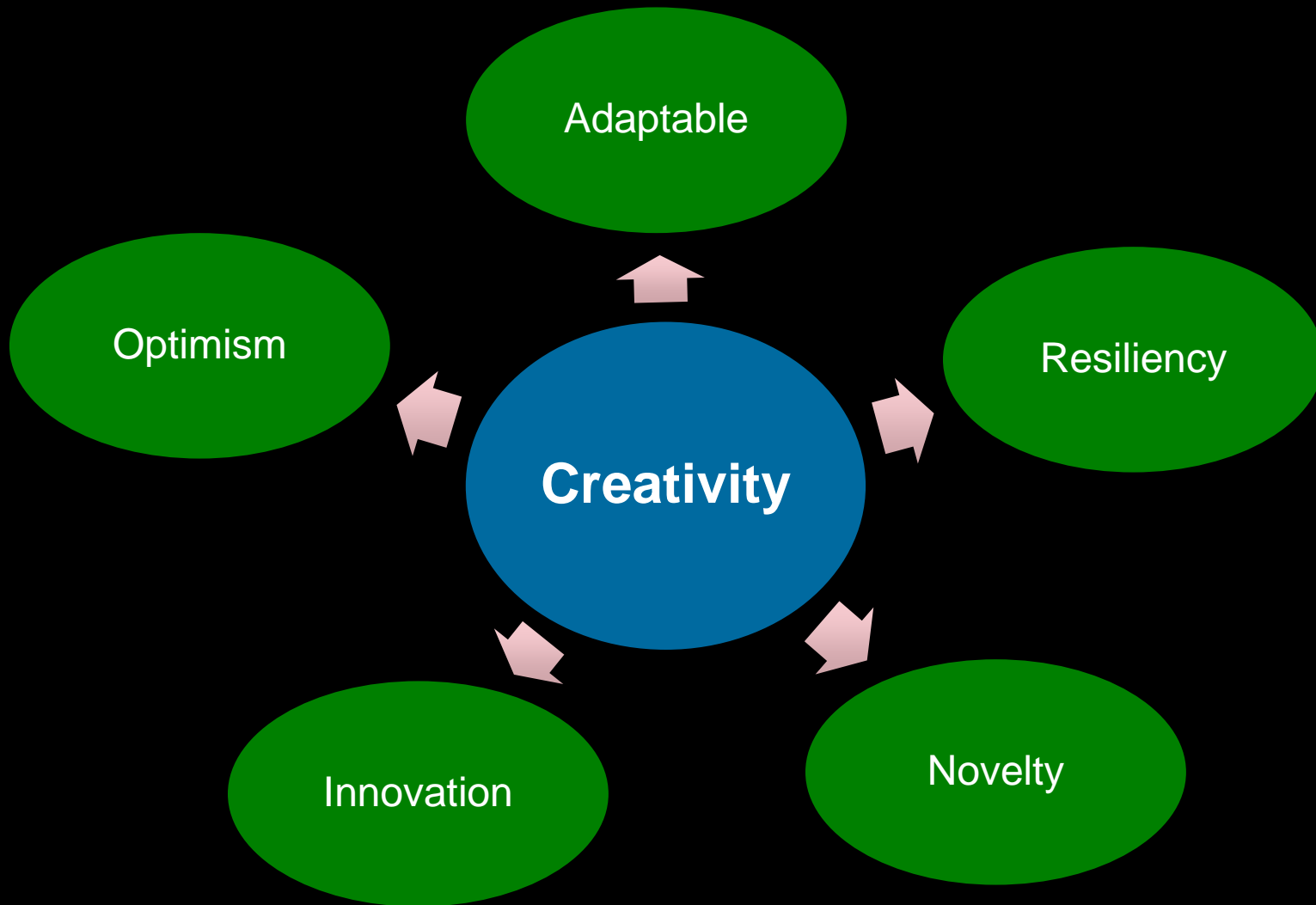
In a recent survey, **73%** of respondents say they are **very** worried that “things are changing too fast these days”

There are 2 responses to unrelenting  
and accelerating change:

**FEAR**

**CREATIVITY**







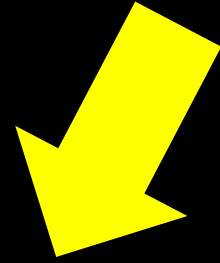
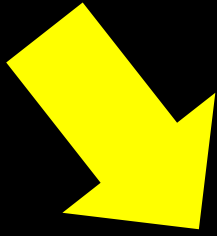
“The unpredictable is the ground on which creativity occurs.”

—Ed Catmull, President of Pixar Animation

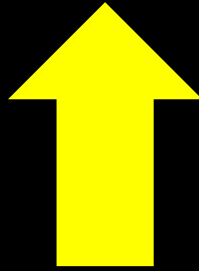


H A M

# The Argument



The arts are our single most important lever for moving from **fear** to **creativity**.



# Employers are demanding creativity



A recent IBM poll of 1,500 CEOs revealed that “**creativity**” is thought to be the number one leadership competency of the future.

# What are core 21st century competencies?

- Improvisation
- Analogical and metaphorical thinking
- Idea generation
- Conditional thinking and counterfactuals
- Expressive agility
- Radical revision and critical feedback
- Flexibility and tolerance for ambiguity
- Empathic reasoning
- Epistemic curiosity
- Problem finding
- Pattern recognition and deep observation
- Abstraction
- Risk taking and learning from failure
- Emergent collaborative creativity

# The Creative Economy

In 2015, core copyright industries added **2.1 trillion** dollars to the U.S. GDP

**3x** the value of the construction industries

Source: IIPA 2016 Report

10TH ANNIVERSARY EDITION



THE  
RISE  
OF THE  
CREATIVE  
CLASS

*Revisited*

RICHARD FLORIDA

# Creative Class Workers are Footloose



# Creativity is a Core Value for the Rising Generation

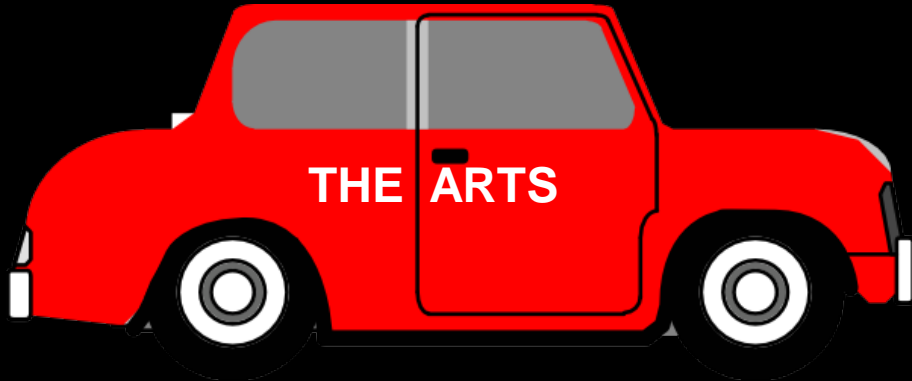
- **92%** say that a career that allows to be creative is important

Source: Teagle Foundation Study of Double Majors (2009)

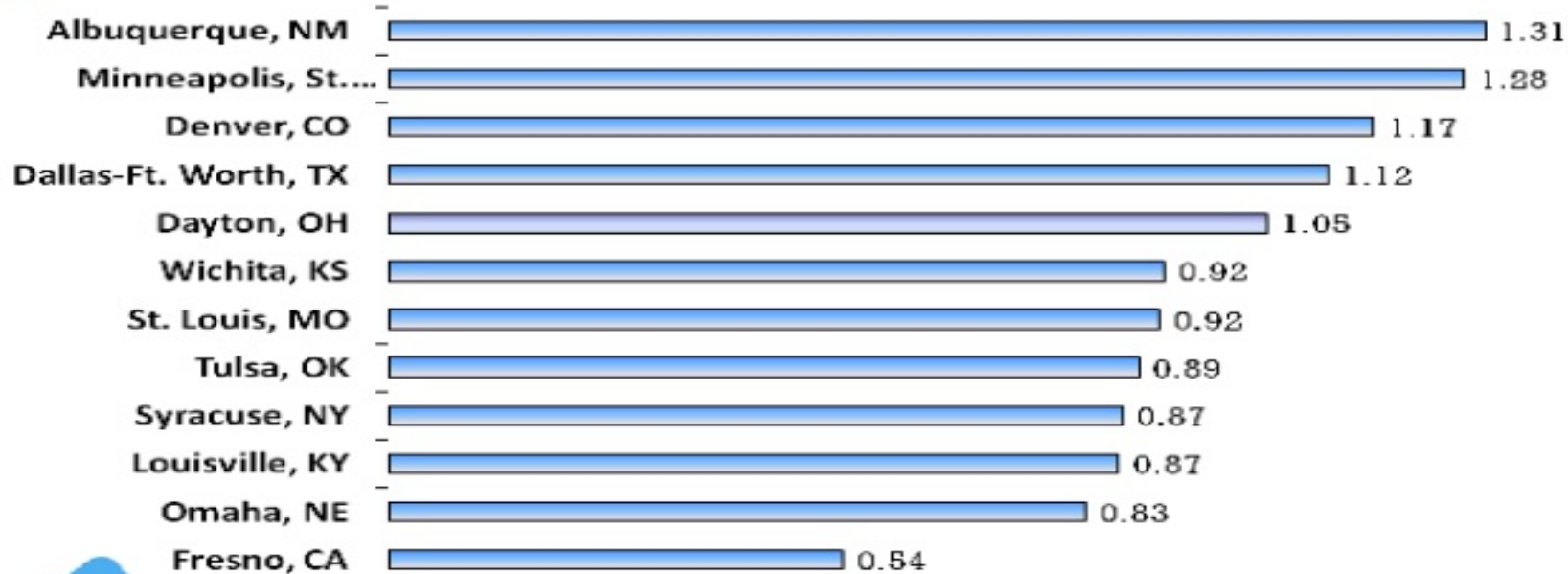


**Engagement in the arts drives creativity  
and innovation in both individuals and  
communities.**

**CREATIVITY**



# Bohemian Index

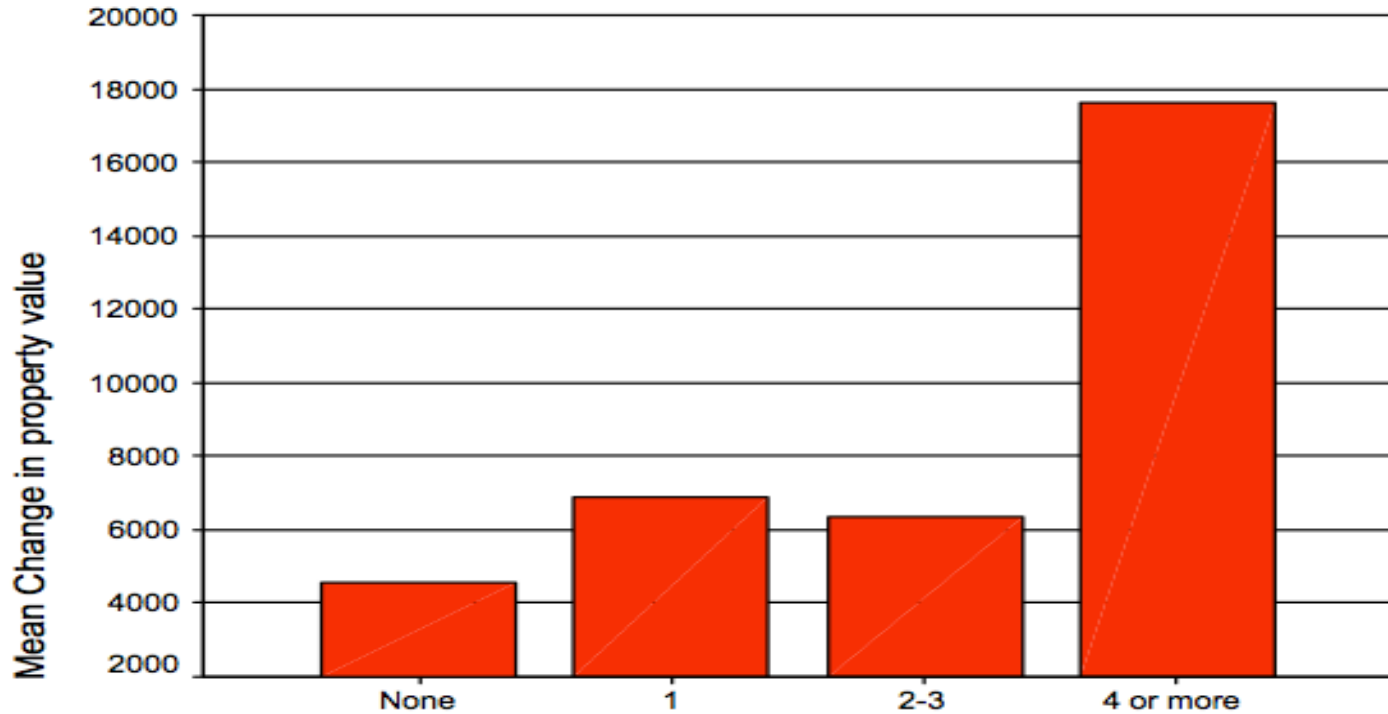


Source: Creative Class Group, 2008.

Note: Dayton MSA was used.

# Art → Property Values

(Mark Stern: Social Impact of the Arts)



New cultural providers 1997-2002

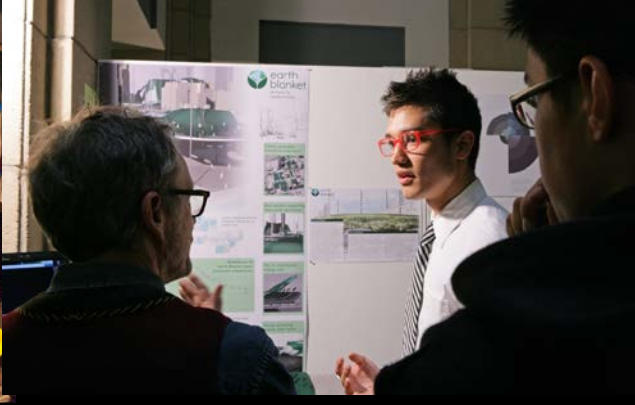
# Arts & Crafts Drive Innovation in STEM

- Patent holders have up to a **30% higher** participation rate in the arts as children
- **93%** of STEM honors graduates have some musical training, compared to 34% of all American adults.

Source: Rex LaMore, Robert Root-Bernstein, Michele Root-Bernstein, John H. Schweitzer, James L. Lawton, Eileen Roraback, Amber Peruski, Megan VanDyke, and Laleah Fernandez, 'Arts and Crafts: Critical to Economic Innovation', Economic Development Quarterly, August 2013; vol. 27, 3: pp. 221-229

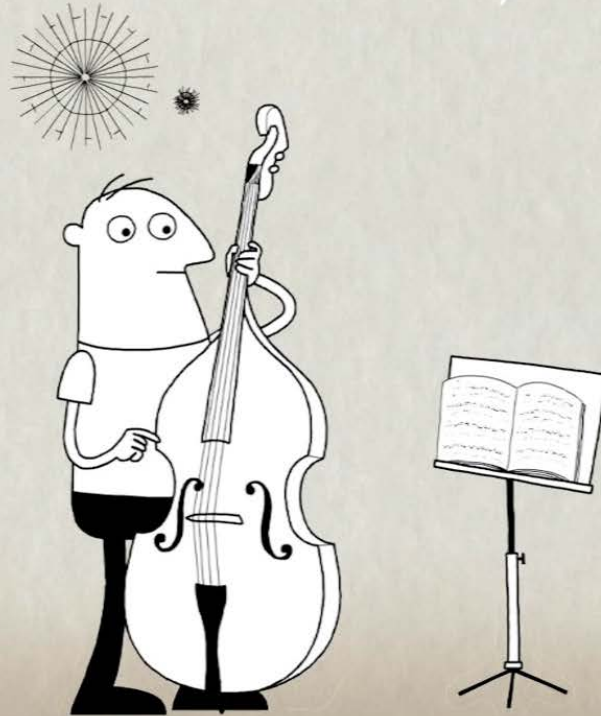
# Nobel laureates are... (source: Robert Root Bernstein)

- **4x** more likely musicians
- **17x** more likely visual artists
- **22x** more likely performers
- **25x** more likely writers



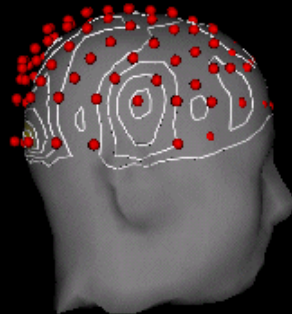
Core creative skills like reasoning by analogy, making non-routine connections, and identifying patterns are all related to the same area of the brain that is activated when people are engaged in the visual and performing arts.

# HOW PLAYING AN INSTRUMENT BENEFITS YOUR BRAIN





- Faster and more diverse pathways
- Higher level executive function (planning, strategy, details, emotional intelligence)
- Enhanced memory





Heath et al (1999) found that students who participate in after school arts programs are **5x** more likely to use “if-then,” “what if,” and “how about” questions.

# Design and Improvisation



GRO: DVD bike demo

Arizona State University

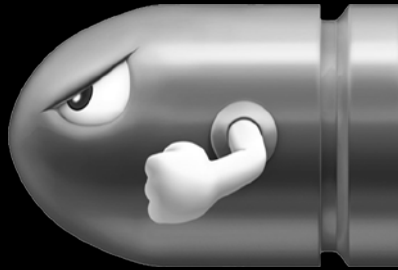
© Scott Gentry/ASU 11.04

ts

- Science majors earn an average of \$66,000
- When they **add** an arts degree they earn \$72,000

“People who play instruments make better engineers”  
— Wayne Clough, former president of Georgia Tech

# AND...



# AND...Evidence shows that arts participation can...

- Increase college **retention**
- **Reduce pain** for chronic illness
- Improve **memory** in aging
- Associated with higher **quality of life** and general subjective wellbeing
- Improve feelings of **safety** in neighborhoods
- Associated with higher levels of **tolerance**
- Associated with higher levels of **civic participation**
- Heightened **empathy**
- Gains in **confidence** (self-concept)
- **Reduced stress** for kids in poverty
- Increased **school engagement** and persistence

Given the pace of change, society needs the arts more now than ever...

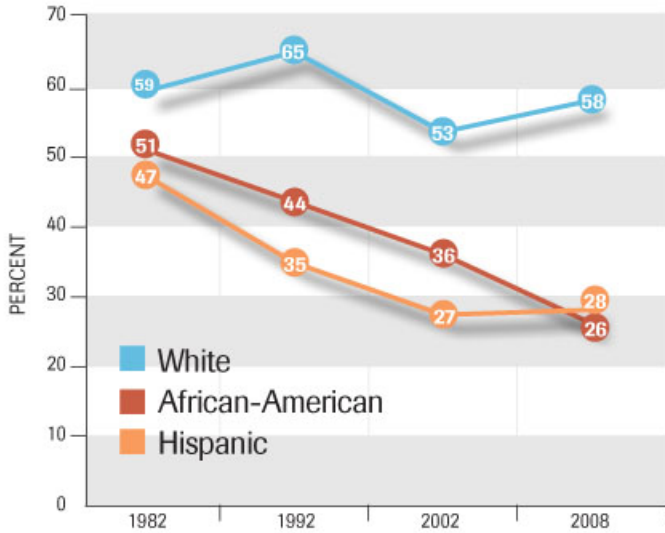
Given public priorities and perceptions, the arts need champions now more than ever...



Opinions

# Abolish the National Endowment for the Arts





## Art-Less Generation

A new survey finds that 18- to 24-year-olds received significantly less arts education than did the previous generation of young people.

Note: Numbers are rounded.

SOURCE: National Endowment for the Arts

The decline of arts education among white children is relatively insignificant, while the declines for **African American** and **Hispanic** children are **49%** and **40%** respectively.

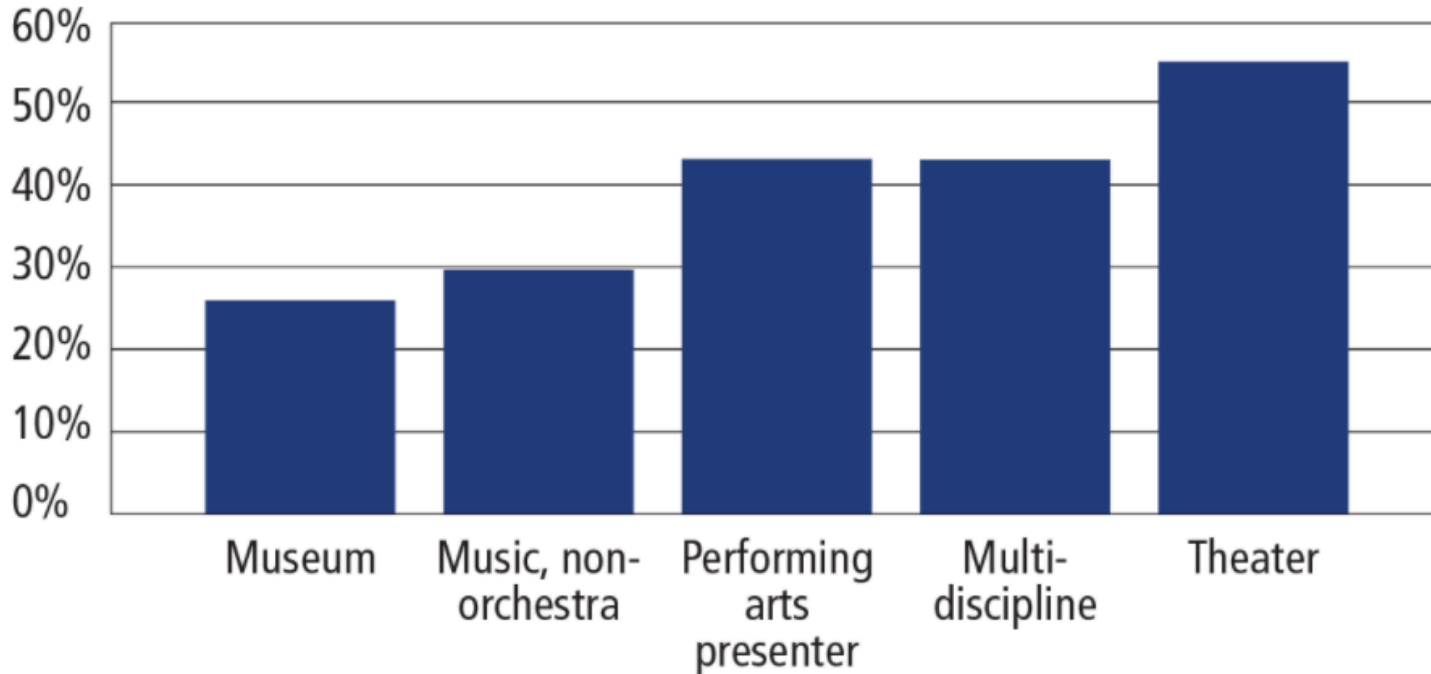
26% of the general U.S. population still say that artists contribute a little or nothing to the general good of society

American Perceptions of Artists Survey 2002

# The Nonprofit Arts on the Edge

(Nonprofit Finance Fund)

## Percentage of respondents reporting less than 3 months of cash (by organization type)



# Metrics can stifle creativity

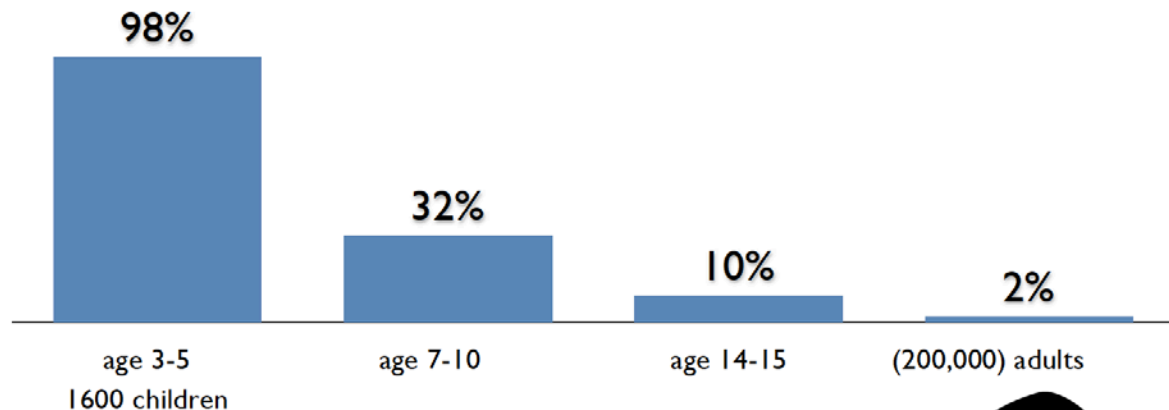
- The U.S. spends \$1.7 billion every year in administering standardized tests in schools
- By the time students graduate from a public school in Texas, they will have spent 34 full school days taking examinations.

Source: Luzer, 2013, Pacific Standard

# divergent thinking and age

land and jarman, 1998

percentage of age group having “genius” scores in divergent thinking



we are all capable of  
being creative.

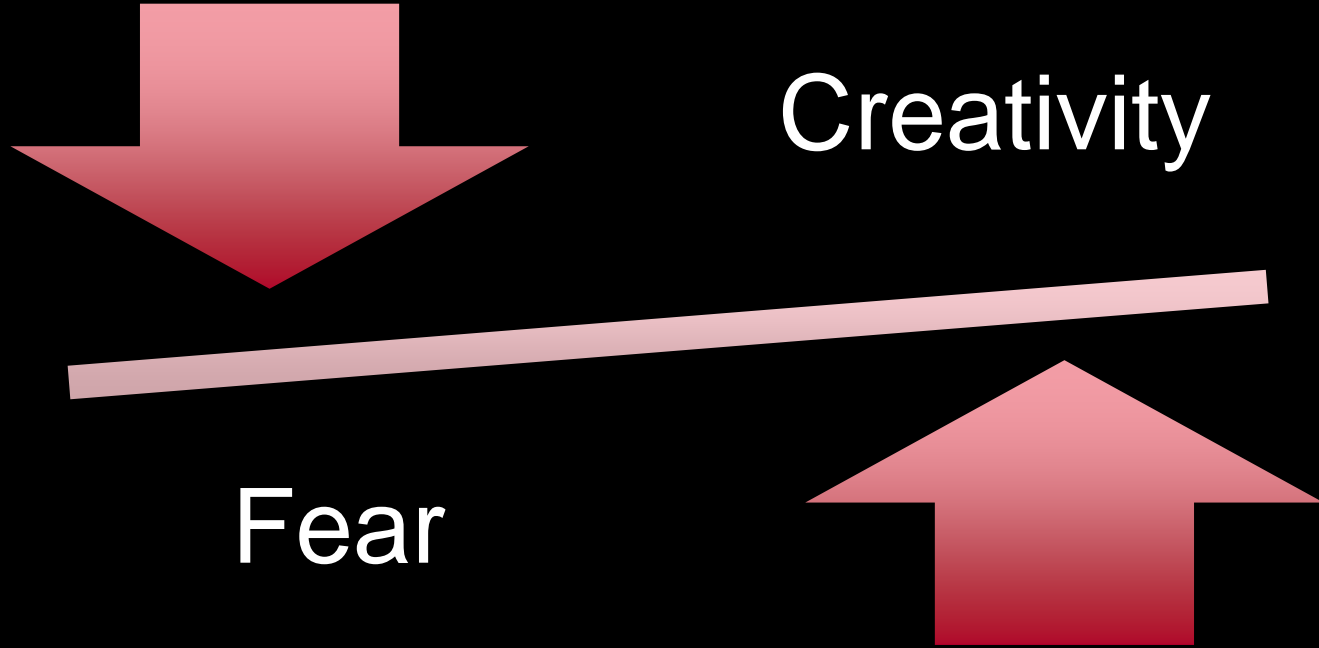
“we are educating people out  
of their creativity”  
-sir ken robinson 2006



# Creativity Slump

“Since 1990, American creativity scores have been declining, even as IQ scores are going up.”

— Kyung Hee Kim, College of William & Mary







We are called to be architects of the  
future, not its victims.

— Buckminster Fuller

**This is the final slide.**

(applause or throw blunt objects)