

# Cracking the Creativity Code

Arie Ruttenberg & Shlomo Maital



**Week Four**



# Week Four

- 4.1 Creativity exercises: Are you working out?**
- 4.2 What Scholars Know about Creativity: Research you can use;**
- 4.3 On Being Walter Mitty. Is creativity fun, or painful?**
- 4.4 Life take two: On reinventing yourself and your career.**
- 4.5 Secrets of Einstein, da Vinci and Edison.**
- 4.6 Humble masterpieces: Stories of creative breakthroughs.**
- 4.7 More masterpieces: Creativity in action.**
- 4.8 Ideas proposed by students for the 7 Challenges**
- 4.9 Torrance Test for Creative Thinking: Have you improved?**
- 4.10 Course summary: What have you learned? What have you implemented?  
How have you changed?**

**Introduction to Cracking the Creativity Code Part Two: Delivering Ideas**



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## Week Four

### Session #1

### Creativity Exercises: Are You Working Out?



# Creativity Exercises: 1 to 5

- 1. Act don't just gripe.**
- 2. Break the rules (intelligently).**
- 3. Change Your Habits.**
- 4. Develop Resilience: Embrace Failure.**
- 5. Explore Dark Corners, Experiment Everywhere.**



# Creativity Exercises: 6 to 10

- 6. Learn to focus.**
- 7. Grow your persistence.**
- 8. Hear, Listen, Teach.**
- 9. Individualize: It's always Personal.**
- 10. Become Who You Are (Join Yourself).**
- 10 + 1. Microscope Joined to Telescope: Zoom in, Zoom out, become expert at microscopic/telescopic vision.**



# Action Learning

## Build Your Own Personal Workout

***Can you create a favorite exercise that gives your creative brain a regular workout?***

***Example: The “What if” exercise? (“if pigs could fly”...). Start with a ‘what if...’ sentence. Then... dream what things would be like if it were true.***



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**Week Four**

**End of Session #1**



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## Week Four

### Session #2

**What Scholars Know about  
Creativity: Research you can  
use**





# How does the creative process resemble 'evolution' (natural selection)?



Charles Darwin

**Simonton (1999): creative people are good at generating new options, new choices, even randomly tossing them up into the air before evaluating them.**

**A strong creativity process should help people generate an endless stream of 'genetic mutations'. Failure is a key aspect.**

"NSRW Charles Robert Darwin" Licensed under Public Domain via Wikimedia Commons



# Beware of what/how you measure!

## Divergent vs. Convergent Thinking

How many uses can you think of  
for a spoon?

You have two minutes... Go!

***Zoom Out***

***Divergent***

*Which can be implemented to  
change the world?*

***Zoom In***

***Convergent***



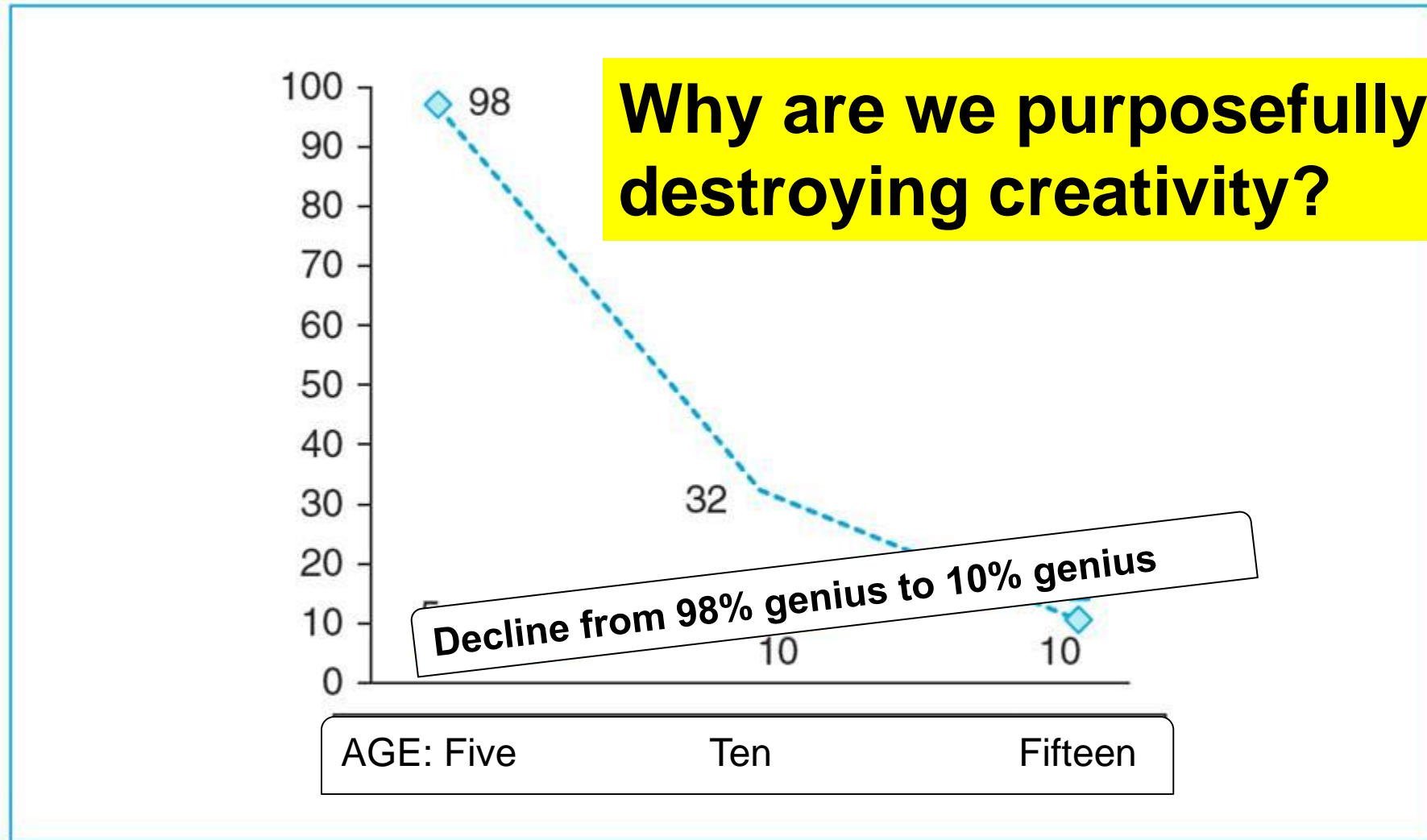
# Creativity in children?

**If creativity is “breaking the rules intelligently –  
*how can we teach children to master the  
‘rules’ (physics, math) and at the same time  
challenge them? How do we combine  
Confucius and Rebellion (C+R = ideas)?***

***How do we manage the  
paradoxical conflict between  
learning old knowledge and  
creating our own new knowledge?***



## Decline of Creativity, by Age: 5 To 10 To 15



Two decades ago, Carnegie Mellon University researcher John Hayes summarized “cognitive processes in creativity.” (1990) He sought to answer the question, “what are creative people like?”

His answer: **Creative people work very hard, strive for originality, are more flexible than others, and are very independent.** They do not have higher IQ's, or get better school grades. He adds: “No cognitive abilities have been identified which reliably distinguish between creative and non-creative people ... the surprising is that all of the variables which discriminate between creative and non-creative people are **motivational.**”

What is the optimal manner to instil motivation for creativity within organizations ?

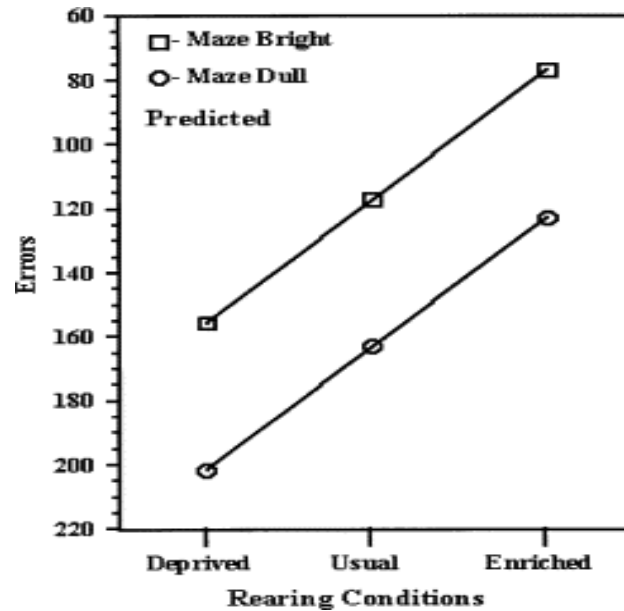


# Is creativity linked to IQ?

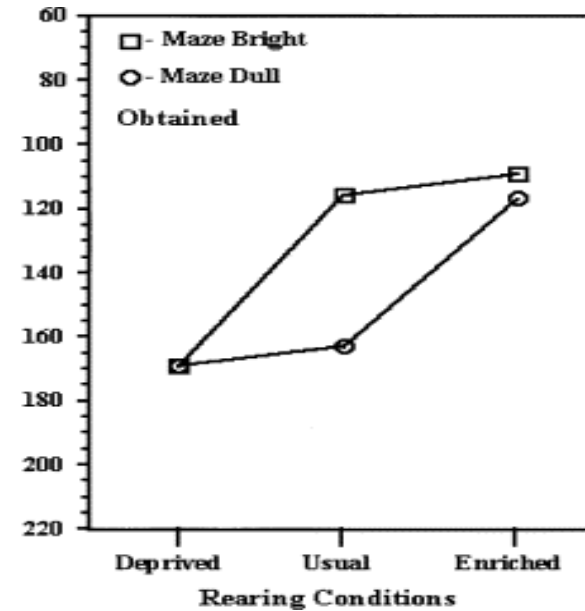
## Seek Stimulation

Cooper & Zubeck (1958)

“Dumb rats improved massively compared to the smart rats when their environment was enriched.” .



Theory



Reality

# Creativity & Ethics?

**Ariely: Creative people may be more dishonest – creative people tell stories about why they are doing the right thing, even when they aren't...(2012)**



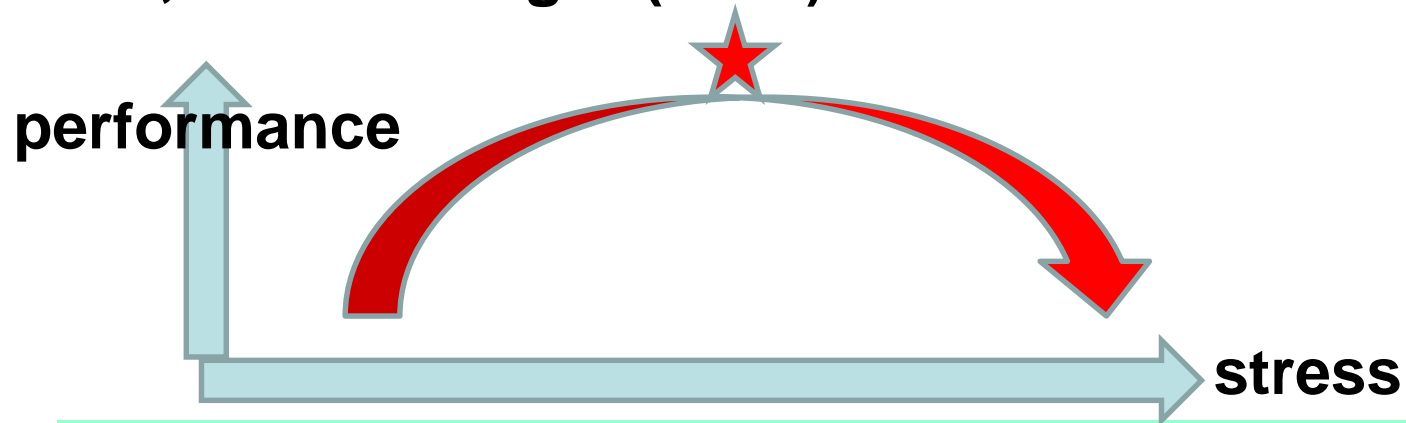
**If creative people invent stories:  
will they also invent lies?**

# Creativity as Thinking IN the Box?

Creative thinking always occurs within the constraints of limited time, resources, technology, etc. Often creativity is stimulated, not hindered, by very tight constraints (boxes).



Glick, Ernst & Unger (2002) “ask the horse’s mouth”



What is the optimal degree of in-the-box crisis urgency, for stimulating creative thought?



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**Week Four**

**End of Session #2**



# Cracking the Creativity Code

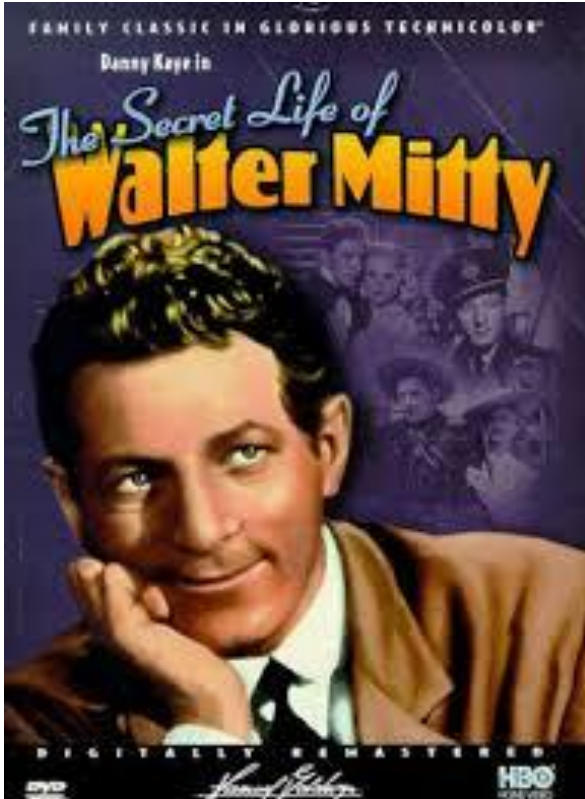
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## Week Four

### Session #3

**On Being Walter Mitty.  
Is creativity fun, or painful?**





RKO Radio Pictures Inc.

**In James Thurber's *New Yorker* short Story: Mitty dreams he is a pilot, a surgeon, a spy.... All heroes.**

**What constructive role does dreaming play, for truly creative people? When is dreaming destructive?**

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**Week Four**

**End of Session #3**



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## Week Four

### Session #4

**Life take two: On reinventing yourself and your career.**



**Your life and your career are your own  
creative design projects.**

**Is this true?**

**Or -- are others designing your life and career for you?**



**Carlo Strenger & Arie Ruttenberg.**

**“The Existential Necessity of Midlife Change”**

**Harvard Business Review February 2008**

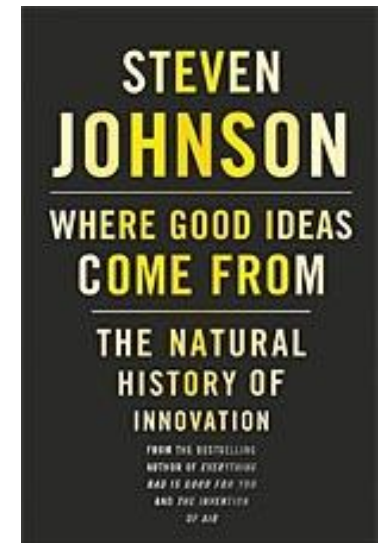
**“To be productive, dreams must be connected to our potential. Otherwise they are idle fantasies.”**

**The method of the ‘adjacent possible’**



# Steven Johnson: Where Good Ideas Come From: a Natural History of Innovation.

When you're searching for the best ideas (for your career, or for your business), seek the ideas that are *adjacent* to existing concepts. Two steps away is too far and will never happen; one step away and you're nearly there.  
**Find the optimal 'distance' of your imagination.**





**Johnson: “Evolution & innovation thrive in networks where serendipitous connections exist.**

**Great discoveries evolve as slow hunches, maturing and connecting to other ideas over time.”**

**Case study: Tim Berners-Lee, World Wide Web**



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**Week Four**

**End of Session #4**



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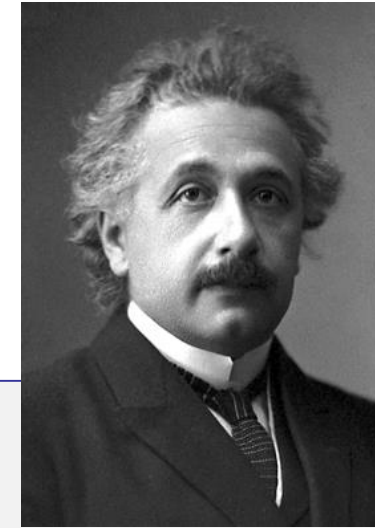
## Week Four

### Session #5

**Secrets of Einstein, da Vinci  
and Edison.**



**Birth : March 14, 1879. Death: April 18, 1955**



"Albert Einstein (Nobel)" Licensed under Public Domain via Wikimedia Commons

## **Einstein's Miracle Year (1905): at age 26**

- **submits dissertation for publication**
- **photoelectric effect (light as a particle) (Brownian motion)**
- **special theory of relativity**
- **$E = mc^2$**



## **A Few of Einstein's Wise Sayings:**

**Education is that which remains, when you forget everything you learned in school.**

**You cannot solve a problem with the same level of thinking that created it.**

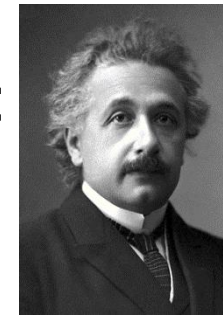
**Simplify as much as possible...! \***

**\* ...but ...not more so !**

**“Wisdom is not a product of schooling, but rather of the lifelong attempt to acquire it.”**



# How to be an Einstein business innovator:



"Albert Einstein (Nobel)"  
Licensed under Public  
Domain via Wikimedia  
Commons

1. Get low grades in school \*

\* Einstein's high school average was 4.91/6 (below average)

2. Have someone say: "nothing will ever come of you!" \*

\* Joseph Degenhart, Einstein's high school teacher

3. Always look for grand "big picture" linkages;  
"connect the unconnected" \*

\* energy; mass; speed of light  $E = mc^2$

\* source: David Bodanis:  $E = mc^2$  : A biography...Walker, NY 2000.



Michael Gelb. *How to Think Like Leonardo da Vinci*. 1998.

***da Vinci's 7 Key Design-Your-Life Principles***

***Curiosita***

***Dimostrazione***

***Connessione***

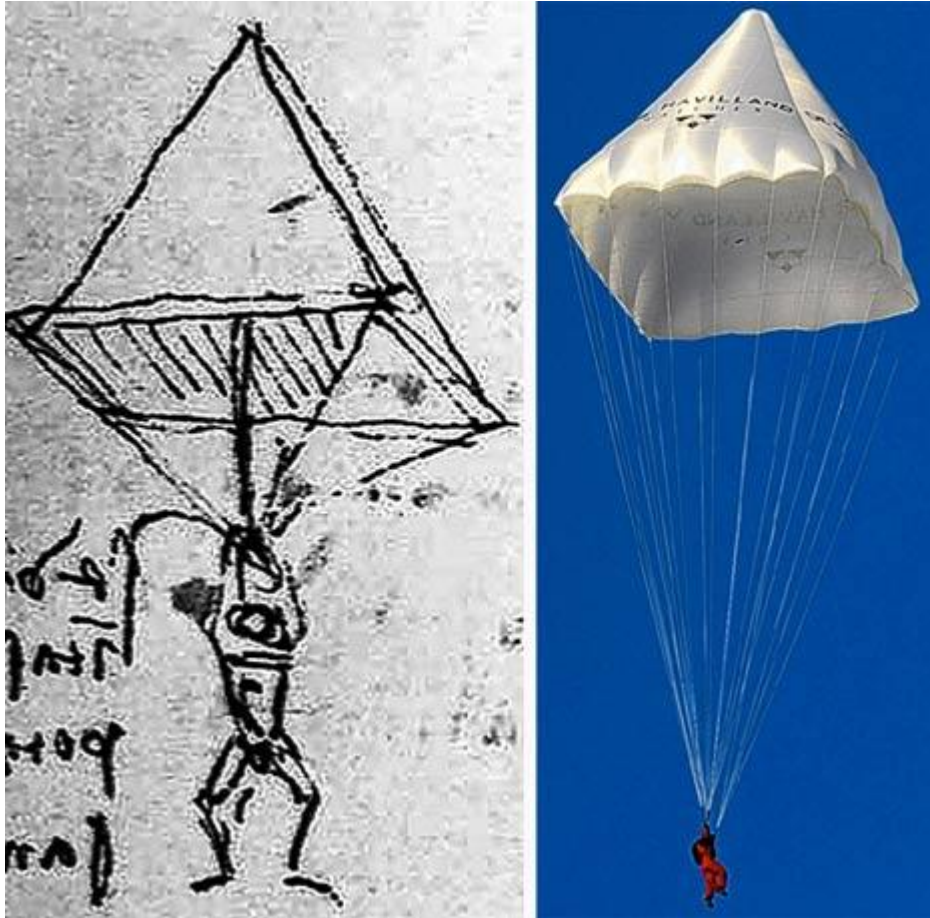
***Sensazione***



***Sfumato***

***Corporalita***

***Arte/Scienza***



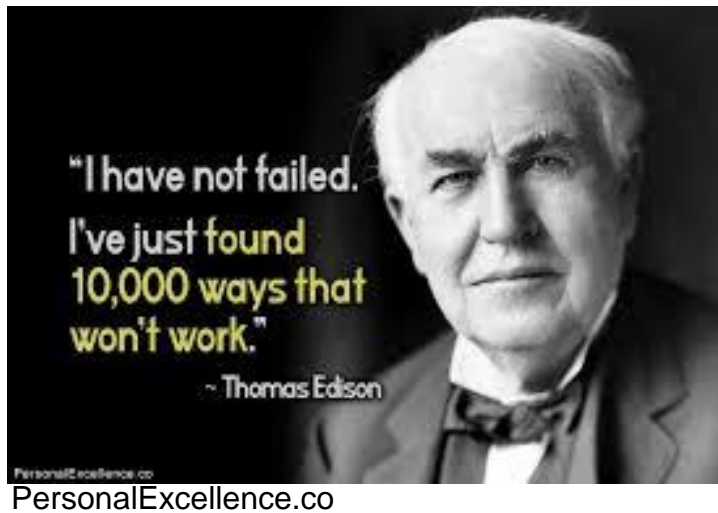
da Vinci's parachute



Used da Vinci' parachute: Olivier Vietta-Teppa

PHOTO: ČTK / AP: Olivier Vietta-Teppa





**Michael J. Gelb and Sarah Miller Caldicott.**  
***Innovate Like Edison. 2007***

## **Edison's Five Innovation Competencies**

- 1. Solution-centered Mindset**
- 2. Kaleidoscopic Thinking**
- 3. Full-spectrum Engagement**
- 4. Master-mind Collaboration**
- 5. Super-value Creation**

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**Week Four**

**End of Session #5**



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**Week Four**

**Session #6**

**Humble masterpieces:  
Stories of creative  
breakthroughs.**

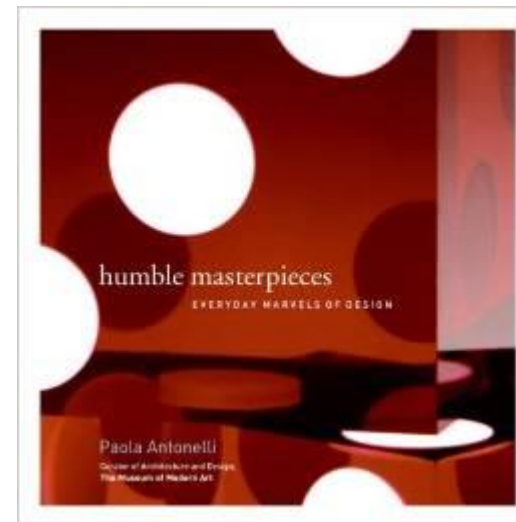


# HUMBLE MASTERPIECES

April 8–September 27, 2004

**MoMAQNS**  
**The Museum of Modern Art, Queens**

PAOLA ANTONELLI, CURATOR, DEPARTMENT OF ARCHITECTURE AND DESIGN





**The story of the safety pin  
(Walter Hunt 1849)**



**The story of the lipstick tube  
(Maurice Levy, 1915)**



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**Week Four**

**End of Session #6**



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## Week Four

### Session #7

### More Masterpieces: Creativity in Action





## **The story of the bar code (Norman Woodland & Bernard Silver, 1948)**



## **The story of the Frisbee (Wham-O, 1948)**



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**Week Four**

**End of Session #7**



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## Week Two

### Session #8

**Ideas proposed by students  
for the 7 Challenges**



# The Seven Unmet Needs Challenges

Each participant is asked to choose one of the following seven unmet needs. At the onset of the course, participants will record and submit ideas for solving or meeting one or more of these unmet needs:

- **Create a new kind of restaurant.**
- **Find a way to bring the Internet to 4.5 billion people who currently lack it.** At present, 2.4 billion people are connected to the Internet; 44.8 percent of them are in Asia.  
That means that 4.6 billion people have NO Internet connection.  
How can this pressing need best be met?
- **Find a way to save millions of lives, lost through inhalation of smoke from indoor cooking fires.** At present, 2.8 billion people in the world cook over openfires; 4.3 million people die each year due to indoor air pollution, caused by open fires used for cooking. Most of the deaths are women and children.



- **Find a way to bring electricity to the 1.3 billion people in the world who have no access to it.** Half the world's children go to schools without electricity.
- **Find a way to prevent babies and small children from being forgotten in locked cars.** Between 1998 and 2010, 463 children have died of overheating or hyperthermia in cars in the United States, the majority of whom were accidentally left behind by caregivers.
- **Find a new, healthy, tasty and popular beverage, in an eco-friendly package.**

*60 million plastic water bottles are used annually in the United States alone*



- **Find a way to foster creativity in elementary and secondary schools, while improving basic skills and knowledge in math, reading, and science.**

**According to a study by Land & Jarman, 98 percent of 5-year-olds score “genius” on a creativity test; at age 10, 32 per cent score “genius”, and at age 15, 10 per cent. By adulthood, only 2 per cent score “genius”. The precious resource, “creative thinking”, is being massively destroyed, in part by the schooling process. How can this be halted?**

**OR**

**Find a practical way to ‘recycle’ food to feed the hungry.**

**An enormous amount of food is wasted, when it is discarded by wedding halls, restaurants and hotels, sometimes as a legal requirement to protect customers. Some NGO’s organize to collect unused food and deliver it to homeless shelters, etc. Can you find a scalable, sustainable, practical and legal way to get unused food to those who need it, in a manner that meets the needs of the hotels and restaurants as well as those of the hungry?**



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**Week Four**

**End of Session #8**



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## Week Four

### Session #9

**Torrance Test for Creative  
Thinking: Have you  
improved?**



# Torrance Test of Creative Thinking

## Torrance Tests of Creative Thinking—Figural and Verbal Demonstrator

**Directions: Do not begin until you are told to do so.**

- \* Try to think of things that no one else will think of.**
- \* Try to think of as many ideas as possible.**
- \* Add details to your ideas to make them complete.**
- \* If you finish before time is up, you may continue to add details or sit quietly.**

**Please do not go to the next activity until told to do so.**



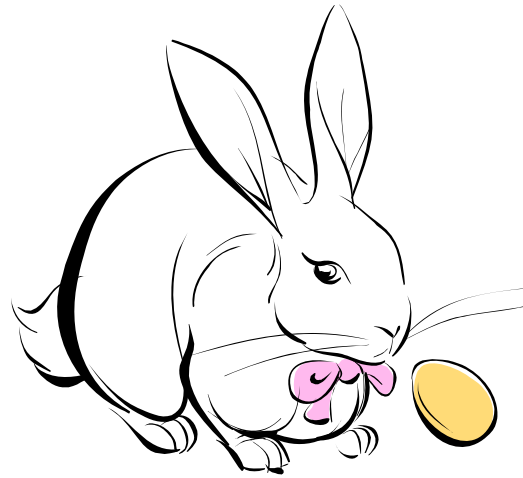


**Activity 1: Try to improve this stuffed toy rabbit so that it will be more fun to play with. You have 3 minutes.**

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**Activity 2: Just suppose that people could transport themselves from place to place with just a wink of the eye or a twitch of the nose. What might be some things that would happen as a result? You have 3 minutes.**

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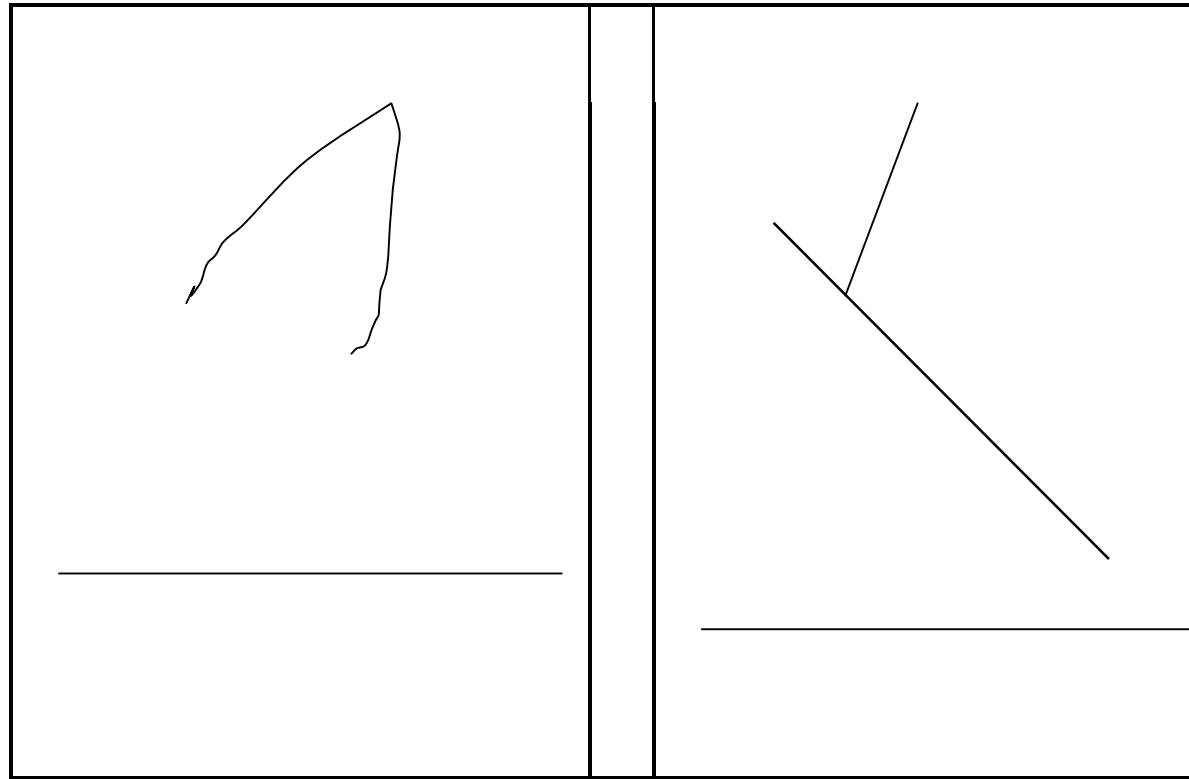
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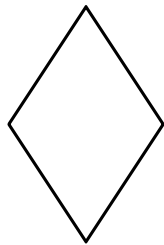
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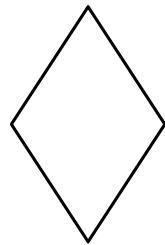
**Activity 3: Add lines to the incomplete figures below to make pictures out of them. Try to tell complete stories with your pictures. Give your pictures titles. You have 3 minutes.**



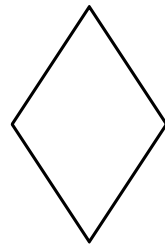
**Activity 4: Add details to the shapes below to make pictures out of them. Make the diamond a part of any picture you make. Try to think of pictures no one else will think of. Add details to tell complete stories with your pictures. Give your pictures titles. You have 3 minutes.**



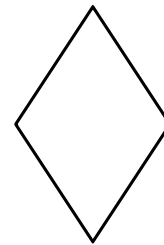
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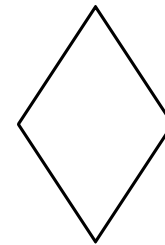
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**Week Four**

**End of Session #9**



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## Week Four

### Session #10

**Course summary: What have you learned? What have you implemented? How have you changed?**



Creativity is an acquired skill, that *improves with practice*.  
This course aims to empower individuals who believe they have lost their innate creativity - because their employers or teachers prefer replication and rote to innovation – *to re-ignite their creative powers*.

Students will learn a proven structured method for generating and implementing world-changing ideas known as '*Zoom in, Zoom out, Zoom in*' that makes creativity more accessible to everyone. They will practice the method with fellow students and use it to tackle challenging real-world needs.



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## Week Four

## End of Session #10





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## Part Two. Delivering Ideas

### Preview



- **The 3 key numbers: Price Cost and VALUE;**
- **Managing tradeoffs**
- **What is competitive strategy?**
- **How to build a learning organization**
- **How to build scale**
- **What you need to know about financial reports**
- **Social entrepreneurship (not for profit)**
- **How to visualize your value proposition**

