

Enterprise Collaboration and Innovation Support Systems (GE/IE 498 ECI): Creativity and Innovation

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Where did we leave it?

- Course structure and grading
- I want to learn about your background
- Two innocent exercises
- Something to watch



What will be do today?

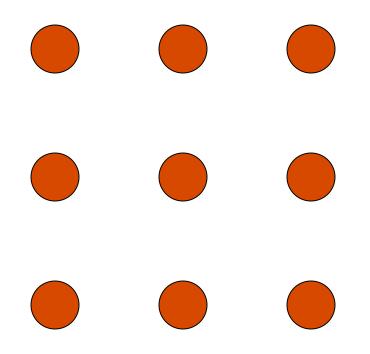
- Review the lessons we learned from the exercises of the previous lecture
- Explore creativity blocks
- What were your answers to the open questions?
- Creativity and innovation
- Some homework



Two innocent exercises (I/II)

• Exercise 1:

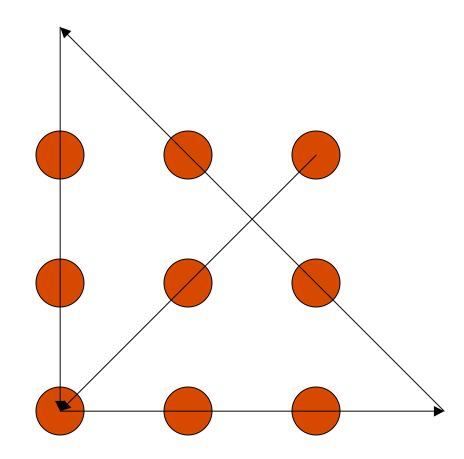
Using only four strokes, and without lifting the pen, connect all the dots



(Michal Michalko (1994). Thinkertoys, Ten Speed Press, 1994)

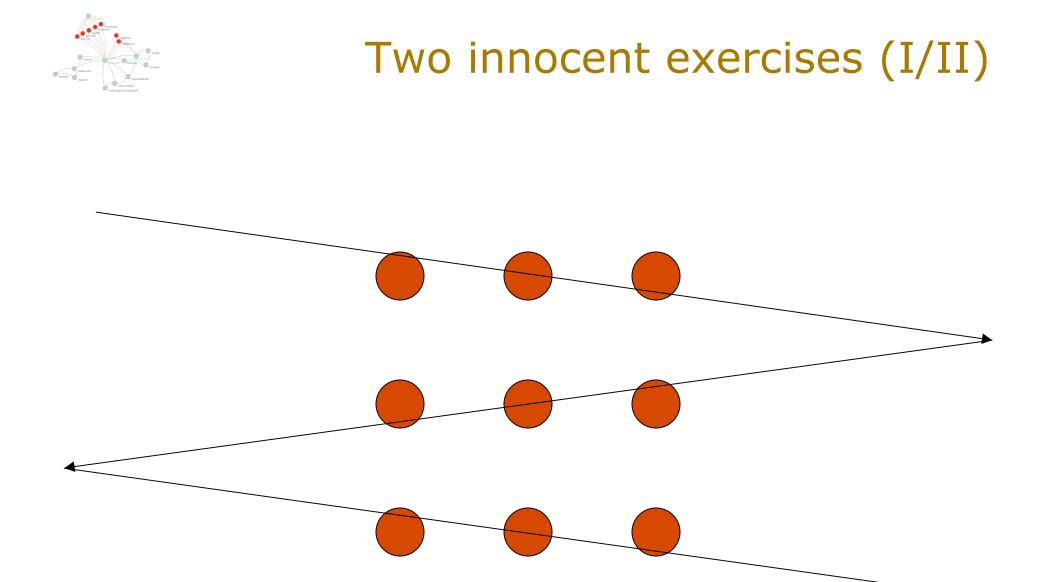


Two innocent exercises (I/II)



Can you do it again only with 3 strokes?

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Why was this exercise tricky?

- Adams, J.L.(1986). "*Conceptual blockbusting: A guide to better ideas*". Reading, MA:Adisson-Wesley.
- Creativity blocks
 - Perceptual
 - Emotional
 - Cultural/environmental
 - Intellectual/expressive

- ...



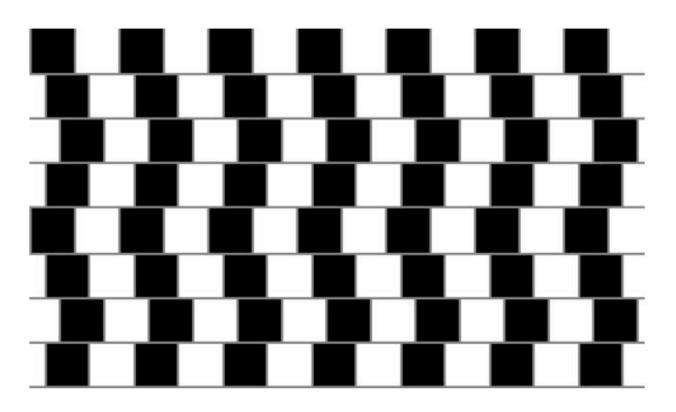
Perceptual blocks

- Types of blocks
 - Stereotypes: seeing what is familiar
 - Isolating the problem
 - Delimiting the problem too closely
 - Inability to have multiple views of the problem
 - Saturation

- ...



Perception Tricks



Are the horizontal lines parallel or do they slope?

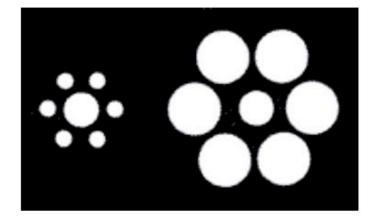
http://www.washburn.edu/cas/psychology/pmacdonald/perceptiontricks.html

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Perception Tricks

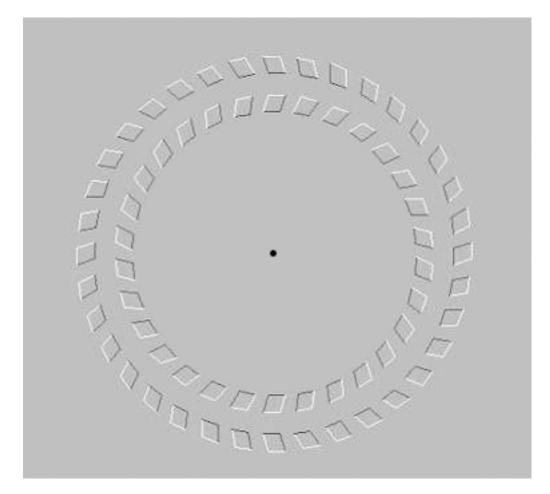
Is the left center circle bigger?



http://www.washburn.edu/cas/psychology/pmacdonald/perceptiontricks.html







http://en.wikipedia.org/wiki/Optical_illusion

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Emotional blocks

• Sigmund Freud

(May 6, 1856-September 23, 1939) Austrian neurologist and the co-founder of the psychoanalytic school of psychology. Key elements:

- Unconscious
- Repression
- Transference
- Dream interpretation
- Sexual desire
- Freud
 - (1 minute, oversimplified explanation)
 - Id: instinctive part
 - Ego: Social aware
 - Superego: moral referee
 - Repression or neurosis





Emotional blocks

- Types of blocks
 - Fear of mistakes
 - Inability to tolerate ambiguity
 - Premature judgment
 - Inability to incubate
 - Change as a problem or an addiction
 - Relation between fantasy and reality



Cultural and environmental blocks

- Taboos (language usage, people interaction...)
- Fantasy and reflections as marginal poor-valued activities
- Children can play, adults cannot
- Social pressure (remember your high school times?)
- Plato acknowledge intuition; Descartes swiped it under the rug (too much brain, no heart)
- Tradition is good (change is evil)
- Capitalism (money can fix anything)

• ...



Intellectual and expressive blocks

- Language (visual, rhetoric, formal...)
- Language as responsible for the wiring of your brain (Feral children, François Truffaut's 1970 film *L'Enfant Sauvage*)
- Language and it expressive boundaries
- Assumptions for free (remember the bounding box in the dots exercise?)
- Catastrophic: "The exact formulation is the only way to go"

• ...



Two innocent exercises (II/II)

- Exercise 2: Write down your answers to
 - Creativity is...
 - Innovation is...
 - What do I do to be more creative/innovative?
- BTW, did you entry your thoughts about the talks?
- So, what is your take on the questions above?



Two real-examples

- Text production
 - By hand (middle ages monks)
 - Revolution (Gutenberg's press)
 - Typewriter
 - Digital computers
 - Word processors and PCs
- Automobile: Henry Ford
 - "If I had asked people what they wanted, they would have said faster horses."



What is creativity?

- Definitions:
 - My Mac: "The use of imagination or original ideas, especially in the production of artistic work."
 - Wikipidea: "Creativity (or creativeness) is a mental process involving the generation of new ideas or concepts, or new associations between existing ideas or concepts."
 - Google:
 - "Creativity is the ability to solve problems that are worth solving. It is the ability to create knowledge. Creativity is subject-specific: it is the meta-knowledge of how to solve a specific class of problems. So there is no such thing as raw, undifferentiated creativity."



What is creativity?

- Definitions:
 - Google:
 - "Generating and sharing ideas is everyone's job."
 - "The production of previously non-existent information. All new items of information are based on preceding ones, and they are *new* because they restructure the preceding items and/or insert foreign informational elements ("noises") into them."
 - "The fact that endlessly the past is blended with the possible in order to make new units of reality."
 - "A measure of an artist's command over the tension in an artwork."
 - "An increasingly rare crime."



Let's break it down in to pieces

- Imagination
- Mental process
- Ideas (original ideas)
- New associations among existing ideas
- Problem solving oriented (What about Jackson Pollock, Salvador Dalí, Edgar Degas?)
- Problems worth to solve (Who decides?)
- Only possible in presence of a problem (What about activities?)
- Sharing! (social process)
- Iterative process (old gets revamp into something new)
- Reality construction
- A criminal activity!
- Diversity!!! (dancing and tomato chunks)





- Individual activity
 - How we can boost individuals creativity
- Group activity
 - If it can be boosted in individuals, why not to boost it in groups
- Social component
 - Creativity and its diffusion processes



Creativity and innovation?

- Let's make one distinction
- Creativity:

Create a new idea, concept, or association, from preexisting or specifically created ones.

• Innovation:

"Creativity + commercialization = innovation"



What will we do in the next lecture?

- Explore some models of creativity and innovation
- Run a group brainstorming to define your projects
- Review this week question



Something to think about

- Read the definitions of creativity again. Think about blockbusting.
- *Homework:* Discus in the DISCUS communities system the post about what assumptions can you identify in each of these definitions. Feel free to bring other definitions to the table for discussion.