

Innovation Management

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Lecture #2

Agenda :

- Creativity vs. Personality
- Ways to be CREATIVE !
- What is Framing a problem ?
- Brain Side vs. Creativity
- Motivation vs. Creativity
- Process vs. Creativity



PERSONALITY

VS

CREATIVITY





There is no such thing as
“CREATIVE PERSONALITY”

Personal Traits

Neuroticism

Extroversion

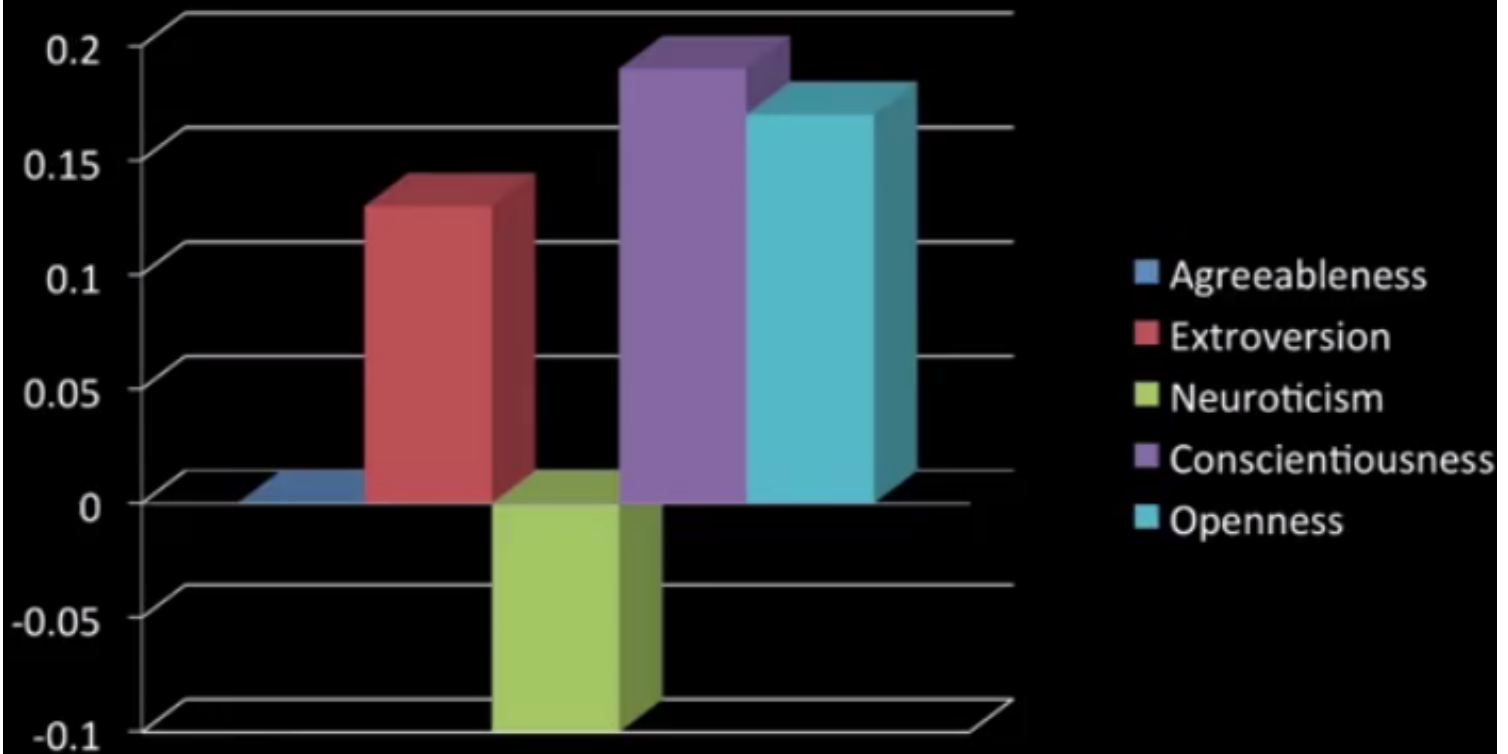
Conscientiousness

Agreeableness

Openness



Correlation: Personality Traits vs Creative Output



(R²)

Taggar, *Academy of Management Journal*, 2002

Personal Traits

Neuroticism

Extroversion

Conscientiousness

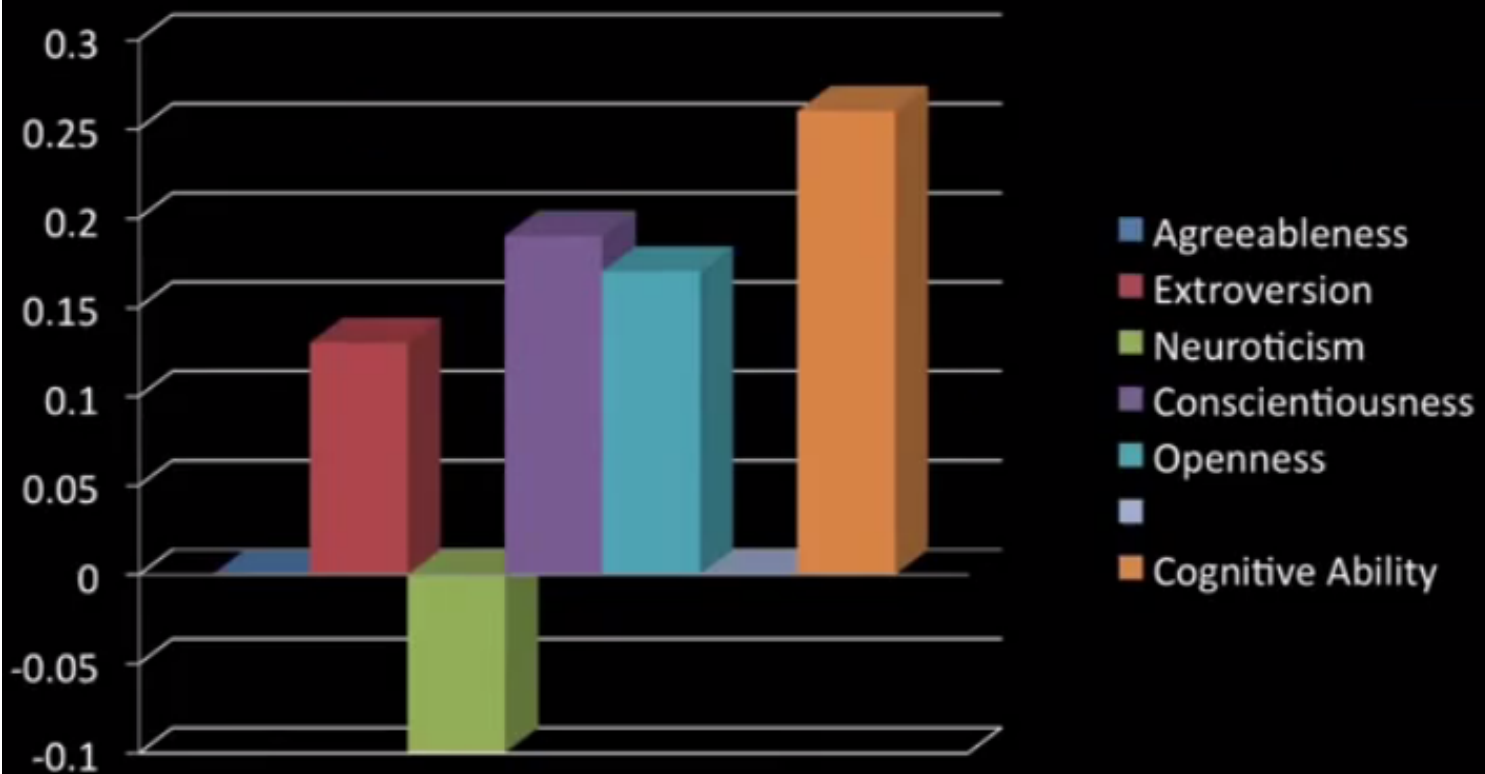
Agreeableness

Openness

Cognitive Ability



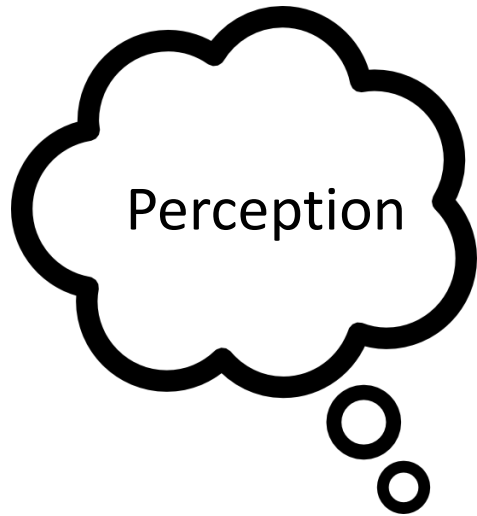
Creativity x Personality Trait Correlations



(R²)

- 
- **CREATIVITY is NOT the PERSONALITY**

Ways to be CREATIVE



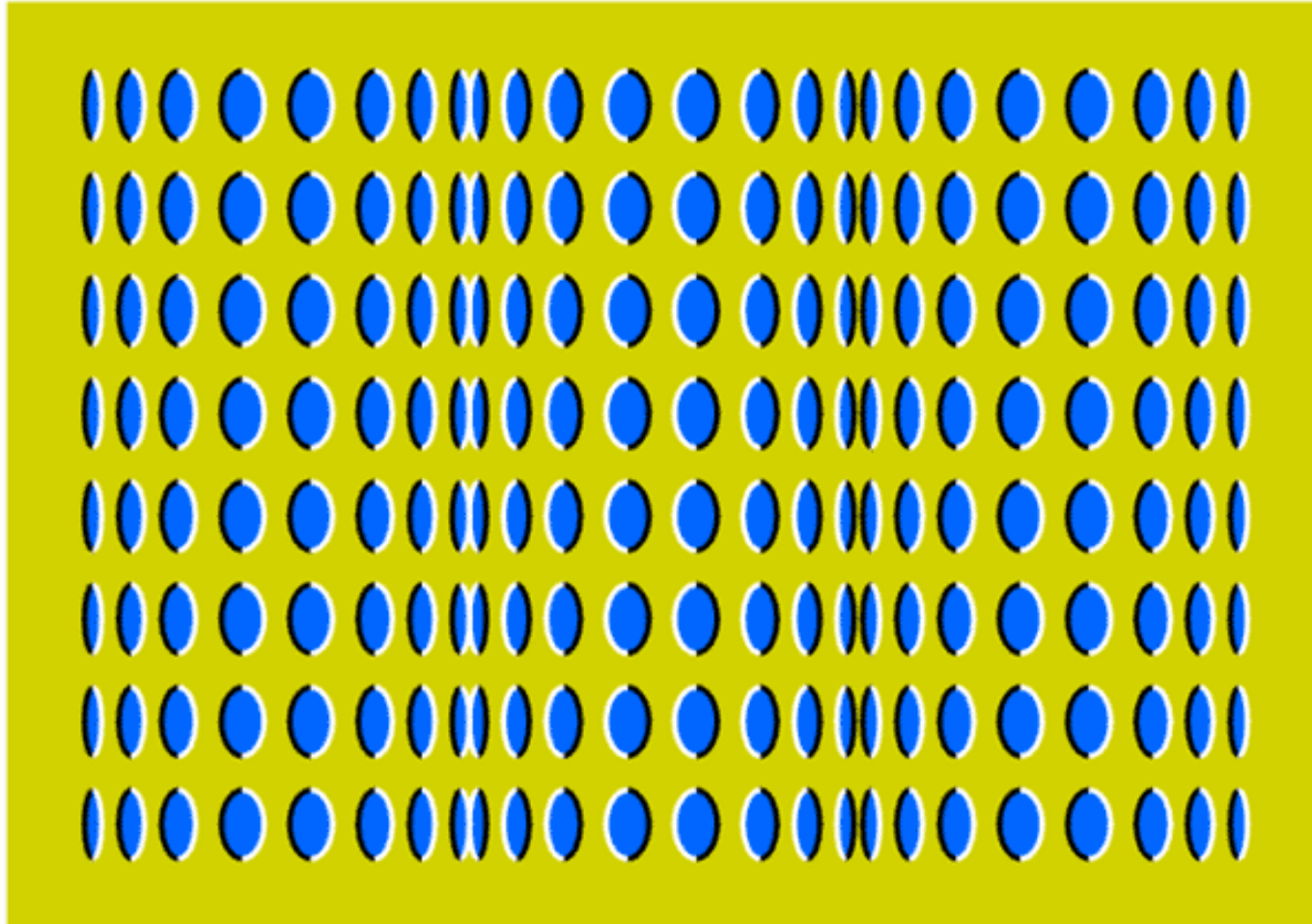
“The way we gather DATA”

How to do a proper Perception

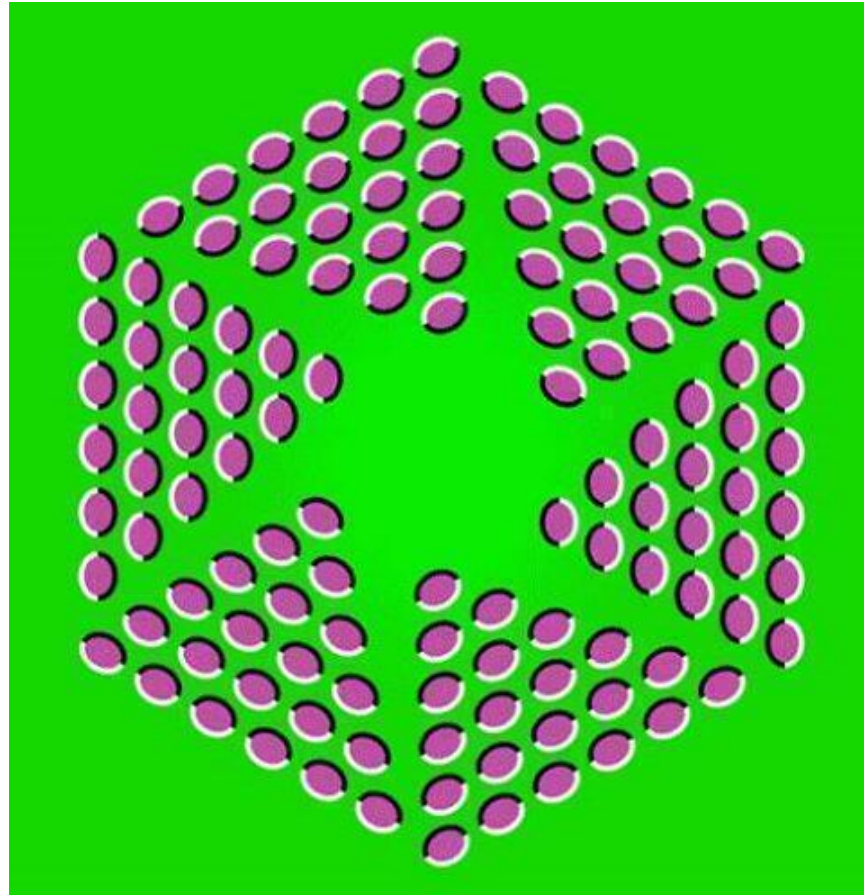
- Avoiding Selective Perception

“Looking without Seeing”

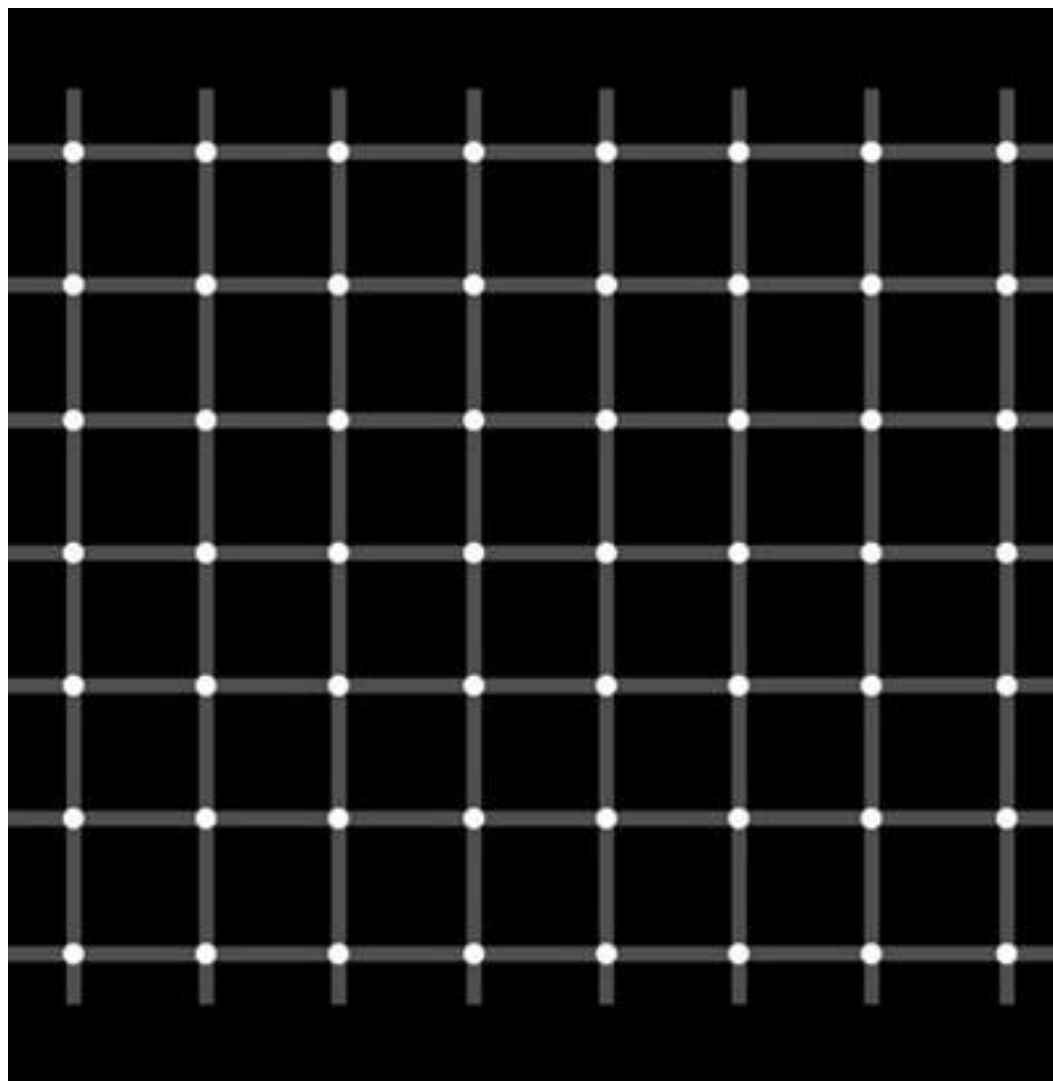
Is this Moving ?



Which one is Separating fast ?




Count the Black Dots ...



How to do a proper Perception

- Avoid Stereotyping (or Pattern Finding)

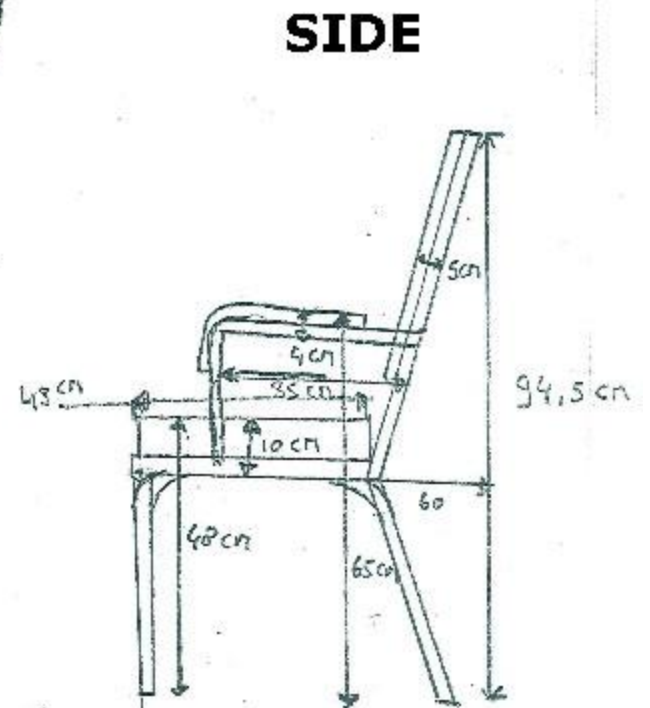
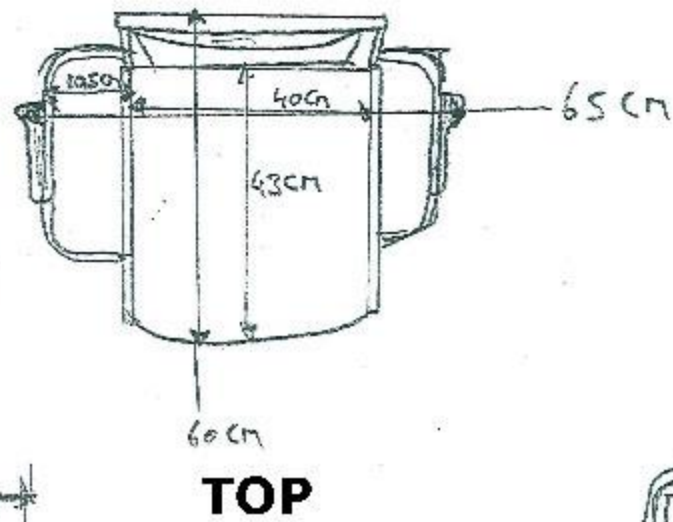
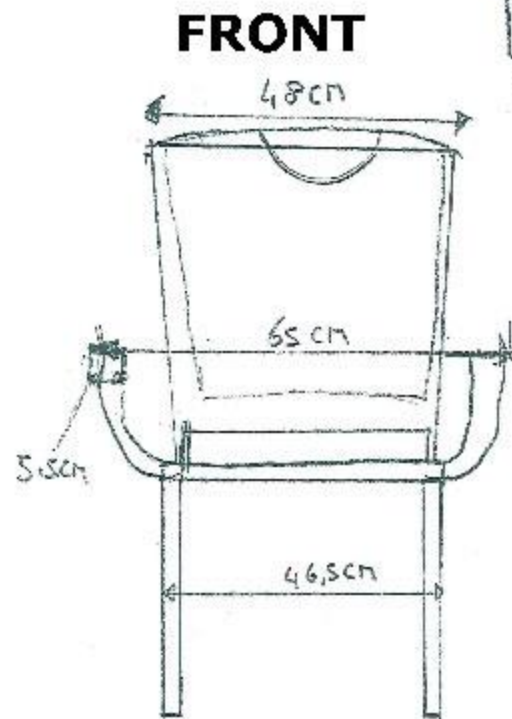
“Ignorance of the details due to cognitive limitations of the Human Brain”



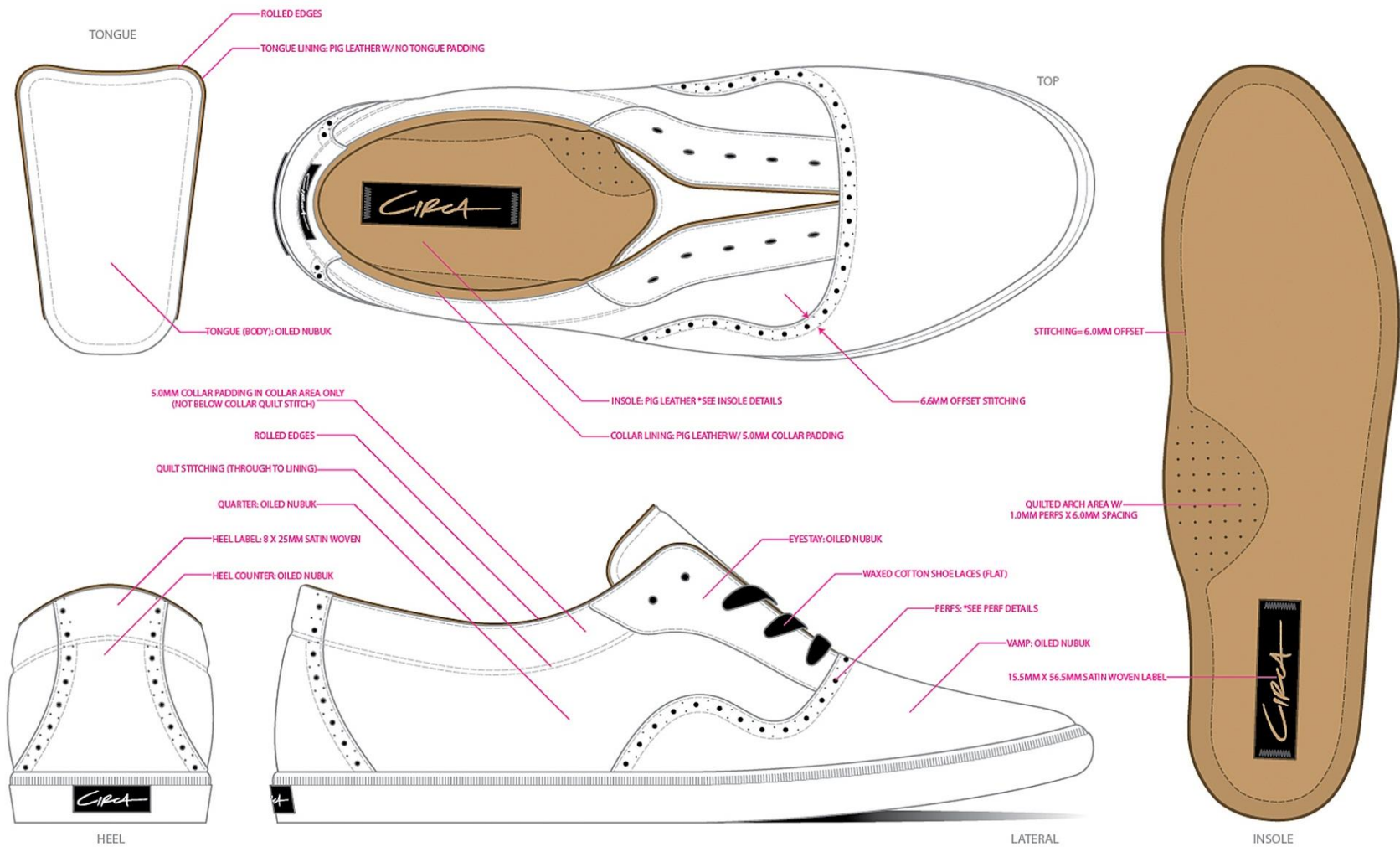
- Draw a Chair

- Draw a Shoe









How to do a proper Perception

- Avoid limiting DATA gathering

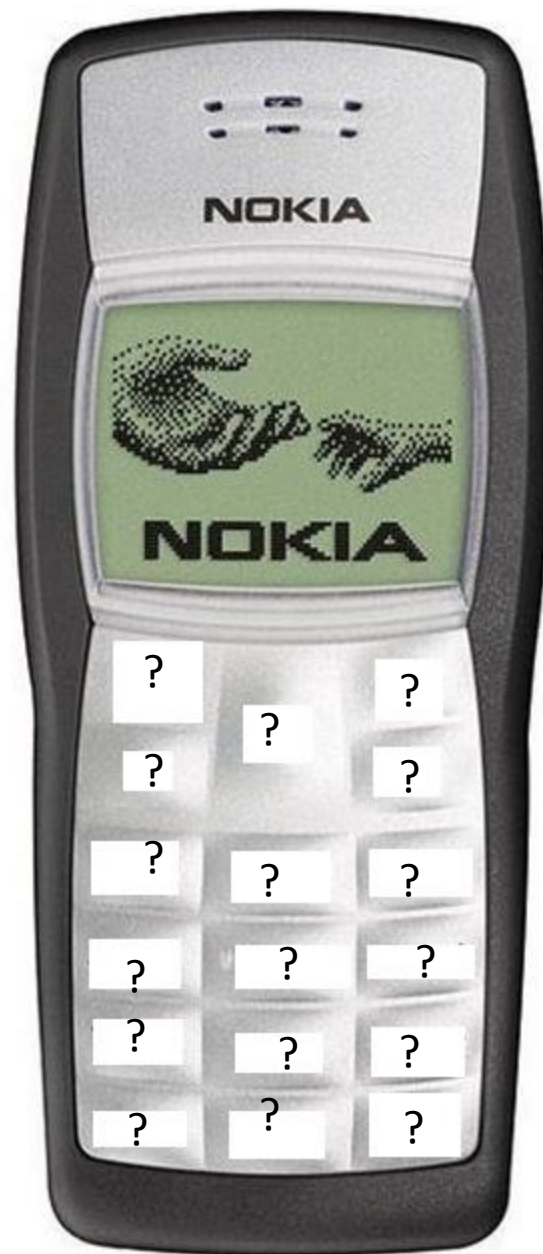
*“Short – circuiting the search for relevant
DATA”*

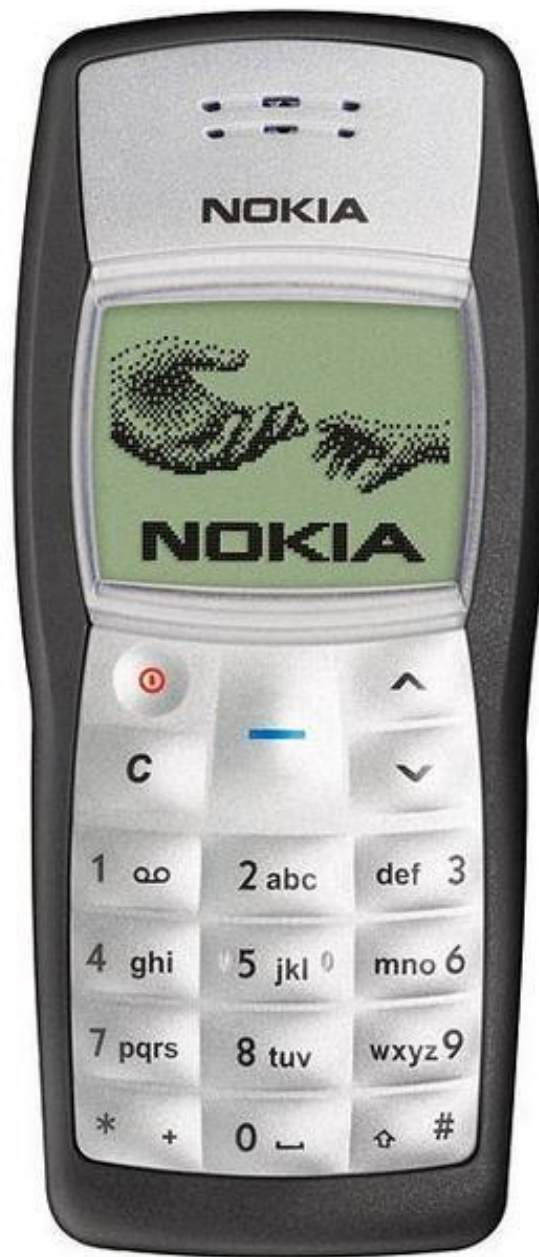
The "Door" Study

from Simons & Levin (1998)

▶ 1:37





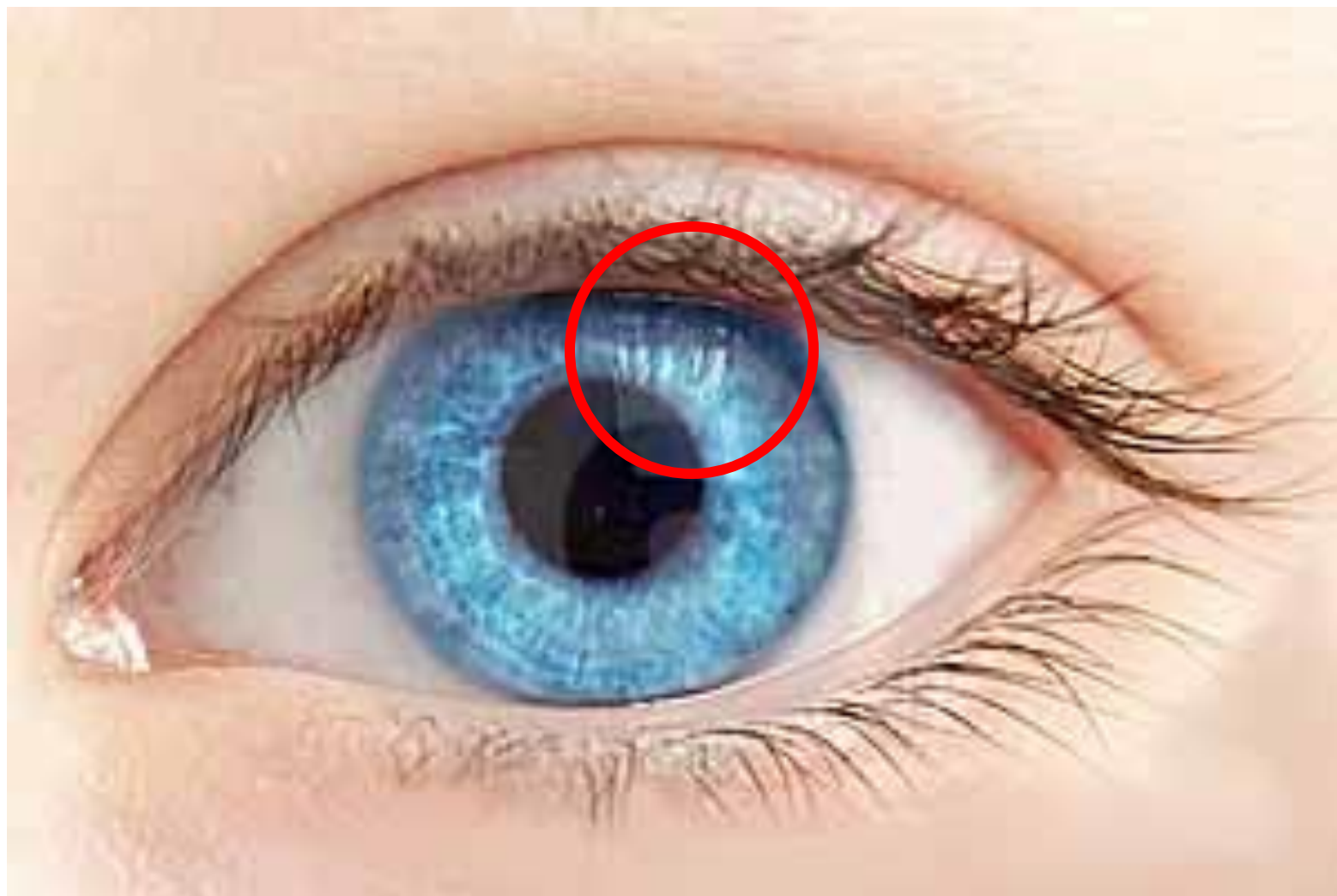


How to do a proper Perception

- Avoid Distance from Data

*“Not getting too close or too far
from data ”*









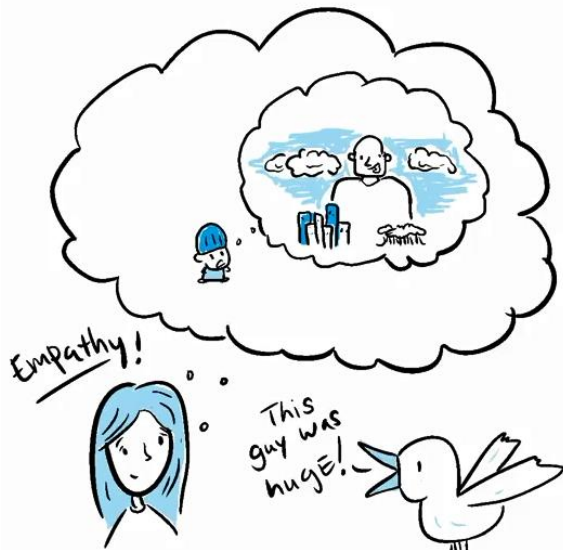


How to improve Perception ?

Find more sources of data



Practice Empathy



Enrich Input



Ways to be CREATIVE



“The way we Process DATA”

How to do a proper Intellection

- Proper Problem Framing

“Where do we draw the boundaries”

Framing a Problem



e.g. : A home alarm sales person doesn't ask you "How can you make your home safe?" but rather "Are your spouse and children worth 2000 rupees?"

How do we frame problems ?

- We frame in safe ways
- Ways that we know how to solve
- Ways that we are told to use

How to do a proper Intellection

- Proper Problem – Solving Strategies

“Don’t get seduced by prior success”

Left Brain

Integration & Expression

- Conscious
- Logic and reasoning
- Language processing
- Detailed oriented
- Upbeat state
- Slower speed of data Processing
- Factual

Right Brain

Creativity & Imagery

- Subconscious
- Intuitive senses
- Imaging ability
- Big picture oriented
- Calm and relax (alpha) state
- High speed data processing & memory retention
- Empathetic



Visualization Exercise

- Imagine a large piece of paper , the thickness of a normal sheet of paper. In your mind, fold it once so that there are two layers. Then fold it again so that there are four layers. Continue folding it over upon itself 50 times.

How thick is the 50-times folded paper ?

Answer

- **500 Sheets \approx 5 cm thick**

1 Sheet \approx 0.0001 meters

- **How many Sheets?**

$$2^{50} \text{ (not } 50 \times 2 \text{ or } 50^2)$$
$$= 1,125,899,906,842,624$$

- **Thickness = 112,589,990,684 m**

= 112,598,990 km (70,368,744 miles)

\approx $\frac{1}{2}$ way to the sun



“What is the best way to solve this problem ?”

NOT

“What Problem – Solving strategy that I am best at?”

How to do a proper Intellection

- Avoid Premature Convergence

“Don't stop at the first Solution”

Complete the Sequence

A

EF

BCD

G

ABCDEFG

AB**C**DEFG

A123**EF**45 IJK6 M

BCD GH L

A EF **HI** KLMN

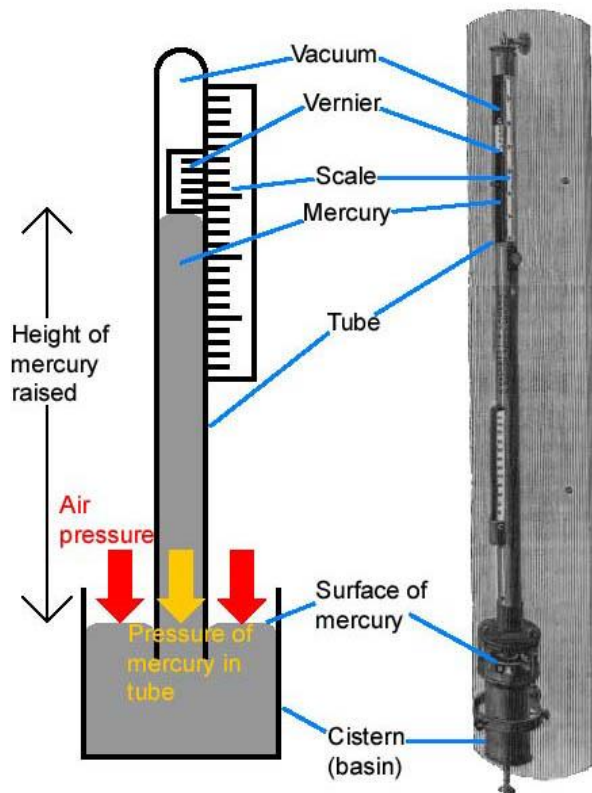
BCD **G** J O

How to do a proper Intellection

- Avoid Lack of Persistence

“Not realizing about other possibilities”

How do you measure the height of a Building using a Barometer ?

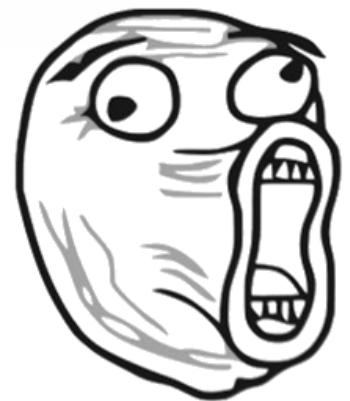


Are these wrong ?

- ✓ Take the barometer to the top of the building, attach a long rope to it, lower it to the street, and then bring it up, measuring the length of the rope.
- ✓ Drop the barometer over the edge of the roof, timing its fall with a stopwatch. Then, using the formula $x=0.5*a*t^2$, calculate the height of the building.
- ✓ Tie the barometer to the end of a string, swing it as a pendulum, and determine the value of g [gravity] at the street level and at the top of the building. From the difference between the two values of g , calculate the height of the building.
- ✓ At the top of the building attach a long rope to it, lower it to just above the street, and then swing it as a pendulum. You could then calculate the height of the building by the period of the precession.



- ✓ Measure the height of the barometer, the length of its shadow, and the length of the shadow of the building, and by the use of simple proportion, determine the height of the building.
- ✓ Walk up the stairs marking off the length of the barometer along the wall. You then count the number of marks, and this will give you the height of the building in barometer units.
- ✓ Take it to the basement and find the superintendent. Speak to him as follows: 'Mr. Superintendent, here is a fine barometer. If you will tell me the height of the building, I will give you this barometer.'



How to improve Intellection ?

Reformulate the Problem



Take multiple approaches to solve a problem



Use Tools and Cards to get help on thinking the problem



Brain Side

VS

CREATIVITY

***“Creativity is the person who can use both left
and right sides of his or her brain”***

Ideation Goal

“Setting up a goal of generating ideas”

Generating Ideas

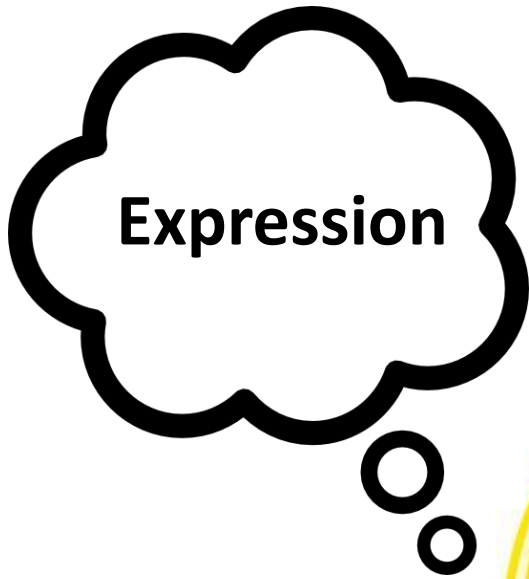
**Treat idea generation as an
exploration, not a search**

**Don't stop when you have "the
idea" Keep looking for others**

Quality vs. Quantity



Ways to be CREATIVE



“The way we Express IDEAS”

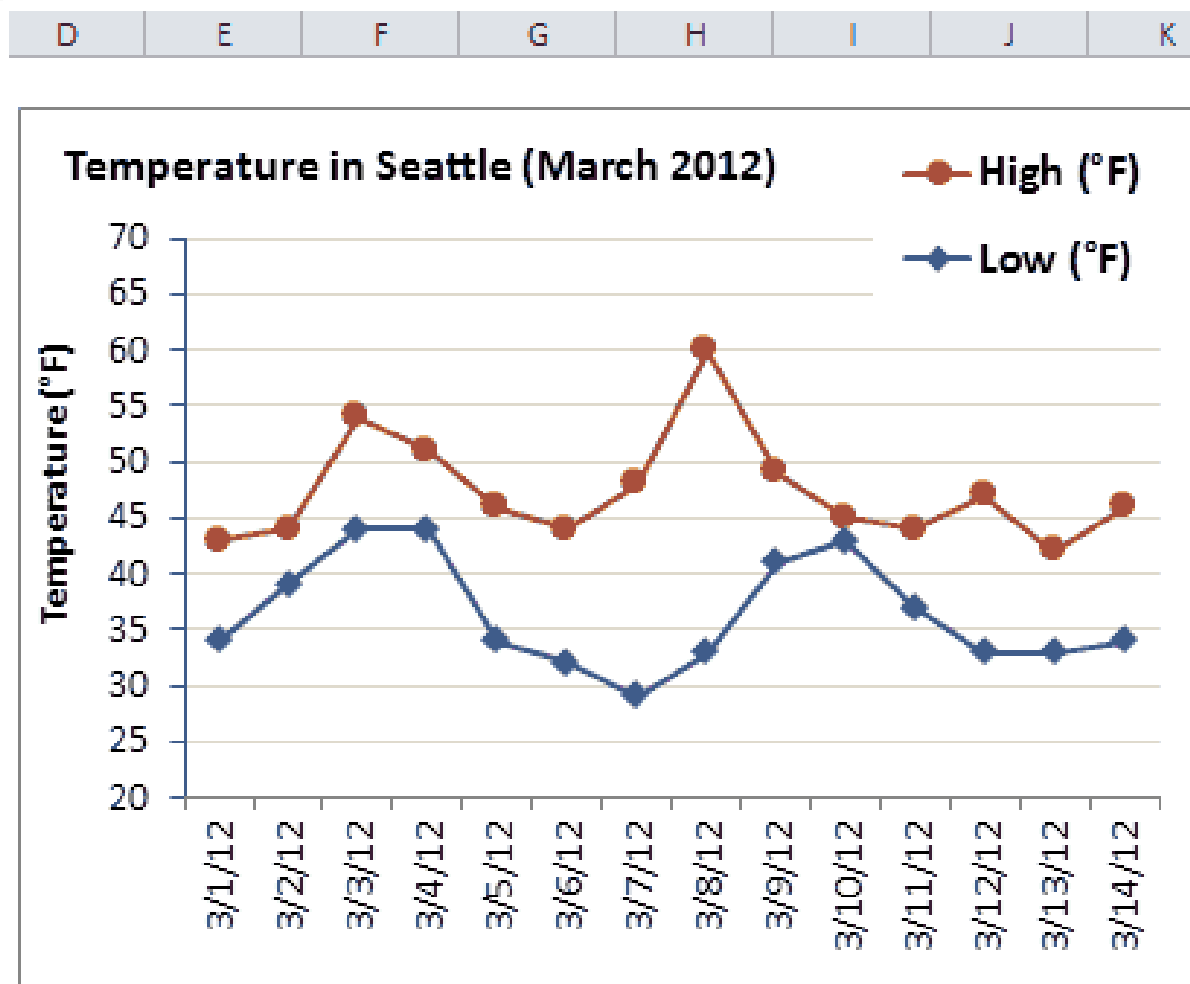
How to do a proper Expression

- Avoid Lack of Expression Language

***“How to use Language to express
IDEAS”***



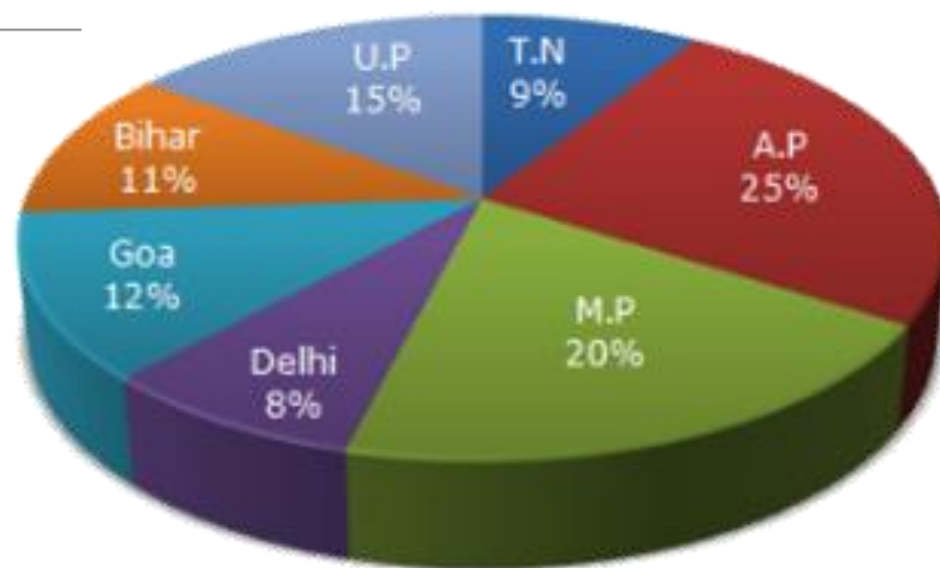
	A	B	C
1	Temperature Data for Seattle		
2	Date	High (°F)	Low (°F)
3	3/1/12	43	34
4	3/2/12	44	39
5	3/3/12	54	44
6	3/4/12	51	44
7	3/5/12	46	34
8	3/6/12	44	32
9	3/7/12	48	29
10	3/8/12	60	33
11	3/9/12	49	41
12	3/10/12	45	43
13	3/11/12	44	37
14	3/12/12	47	33
15	3/13/12	42	33
16	3/14/12	46	34
34			
35	Chart type		
36	in Excel:		



Data of different states regarding population of states in the year 1998

Total population of the given States = 3276000.

States	Sex and Literacy wise Population Ratio			
	Sex		Literacy	
	M	F	Literate	Illiterate
A.P	5	3	2	7
M.P	3	1	1	4
Delhi	2	3	2	1
Goa	3	5	3	2
Bihar	3	4	4	1
U.P.	3	2	7	2
T.N.	3	4	9	4



How to do a proper Expression

- Avoid Limited Vocabulary

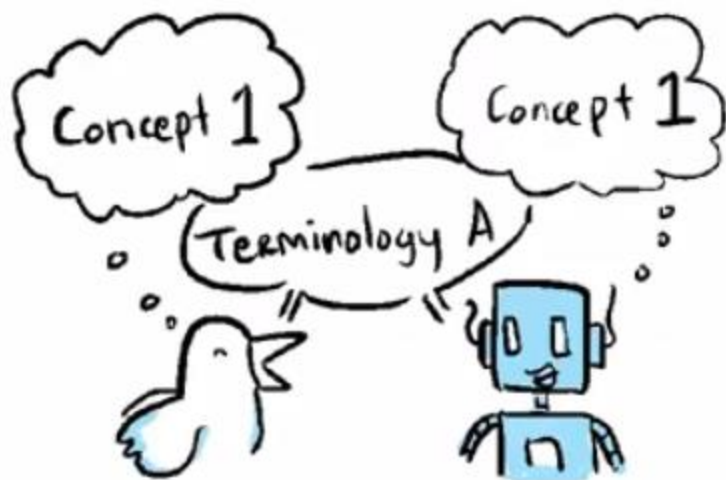
“How to use Symbols to express IDEAS”



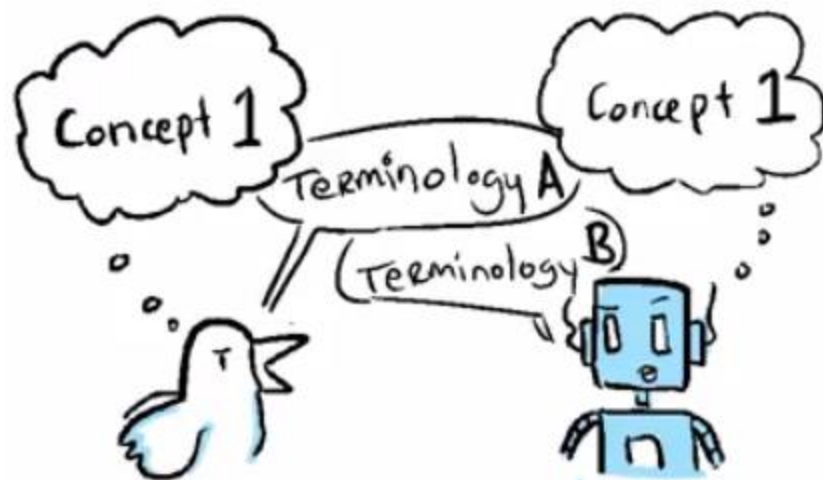
How to do a proper Expression

- Avoid Miscommunication

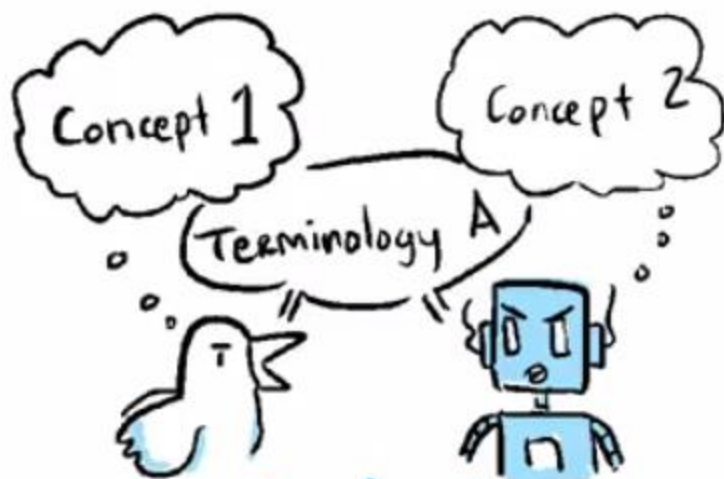
“How to have a proper communication mechanism to express IDEAS”



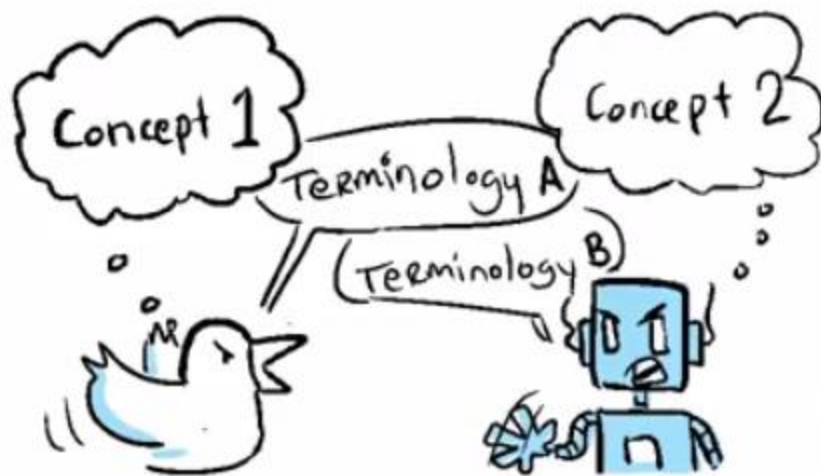
Consensus



Correspondence



Conflict



Contrast

How to improve Expression ?

**Be good at visual Expression /
Drawing**



Sell your Ideas



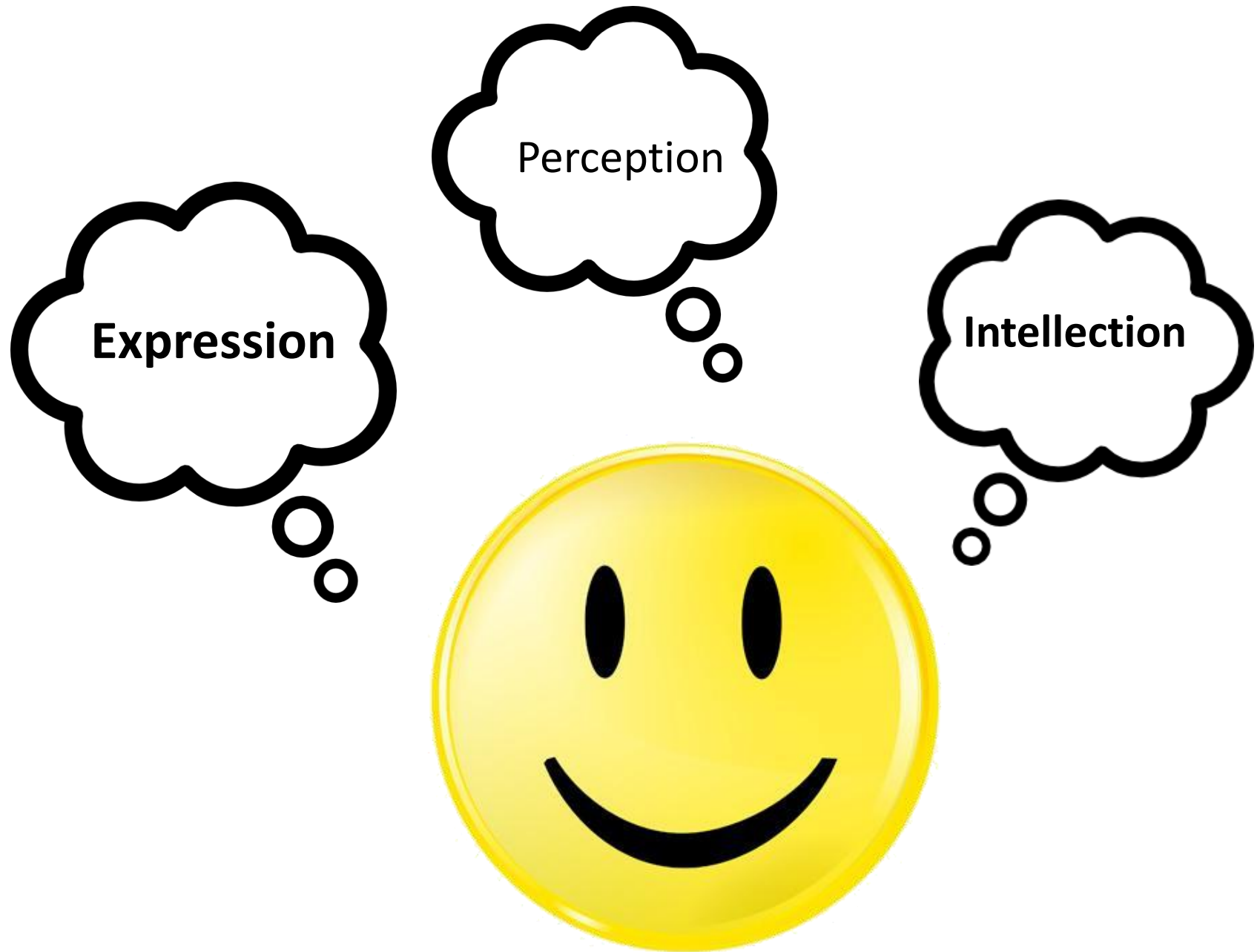
New ways of talking



**Work hard on
presentations**



Ways to be CREATIVE

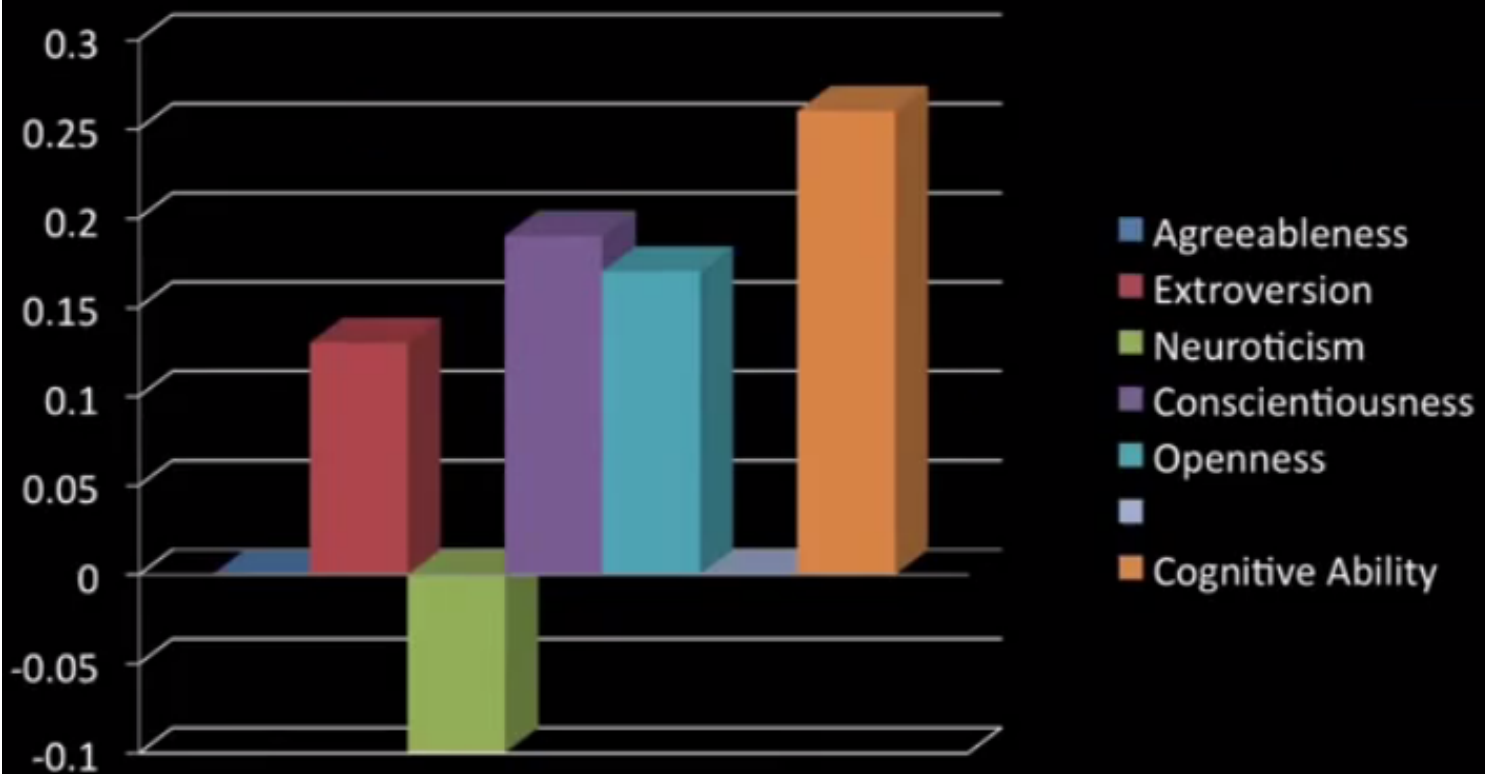




VS



Creativity x Personality Trait Correlations



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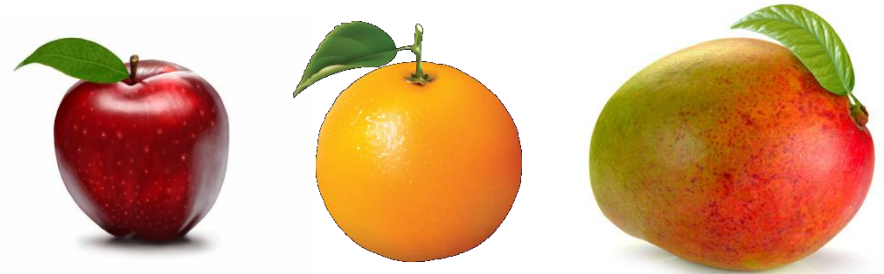
VS



How to have a *INNOVATIVE PROCESS*

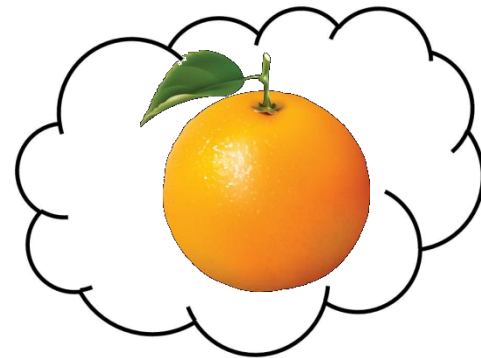
- **Generate Ideas**

- *Lots of Ideas*



- **Access Your Concept**

- *Choose the Best One*

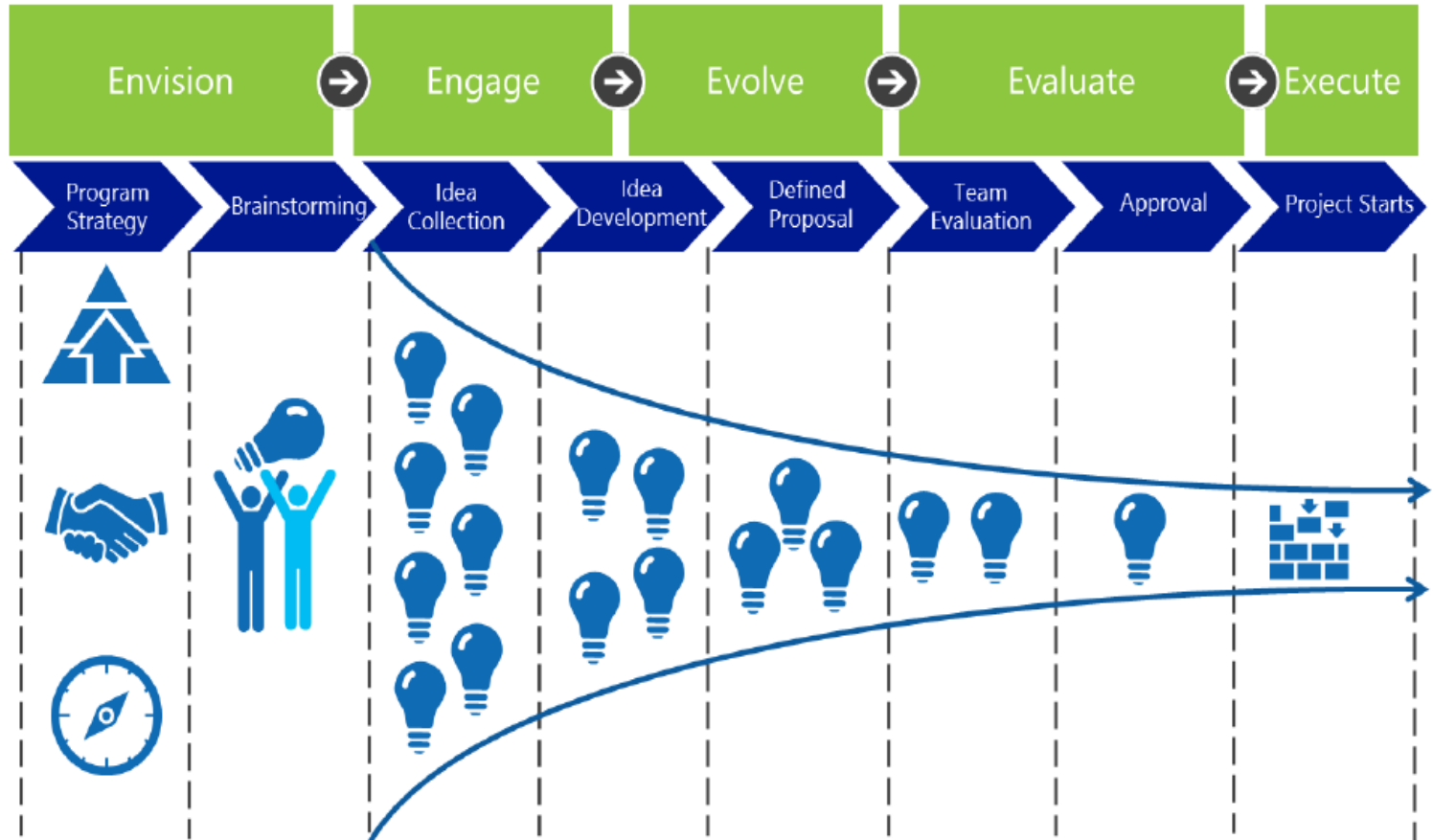


- **Implement Concept**

- *Do that One !*



Innovation Management Framework (IMF)



Hence, to be CREATIVE

Intellectual

- Avoid , overusing the single problem – solving strategy
- Avoid, lack of persistence

Perception

- Avoid difficulties of getting information
- Avoid ,looking in to familiar places

Expression

- Avoid ,inability to record ideas for sharing with others



Motivation

- Avoid , apathy and lack of interest on problems

Process

- Avoid , not generating, accessing and implementing of ideas,

References

- <https://www.coursera.org/course/Innovation>
- <https://www.youtube.com/watch?v=FWsXSQsspiQ>
- <https://www.youtube.com/watch?v=b7LuvAM6XLg>
- <http://www.wikipedia.org/>
- <https://www.google.lk/>




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Nimesh Pollwaththage



THANK
You