

Creativity: A multivariate approach

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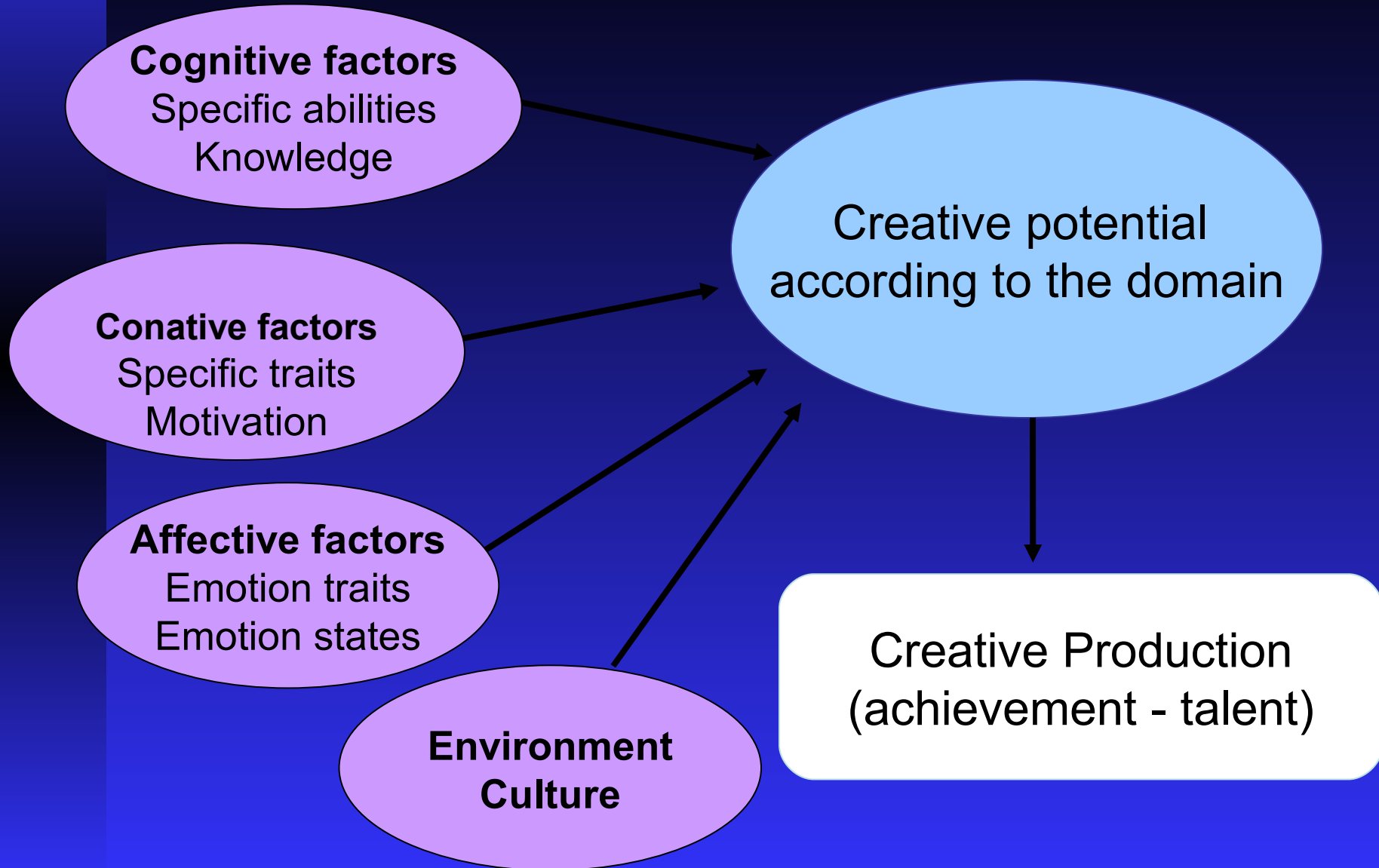
Paris Descartes University



Working Definitions

- Creativity is the ability to produce work that is both:
 - ◆ novel
 - ◆ context appropriate
- Creative process: the sequence of thoughts and actions leading to the production of novel, context appropriate work

Multivariate approach



A Look at the Factors

- Cognition: « Insight » abilities –
 - ◆ Selective encoding (new perception), comparison (metaphors), combination (synthesis), flexibility – mobility (divergence),
- Conation: Risk taking, openness, individuality, intrinsic task-focused motivation
- Affect: Emotional involvement (motivation), emotional sensitivity
- Environment: resources, support, barriers, social judgment, multiple levels(family, school, culture)

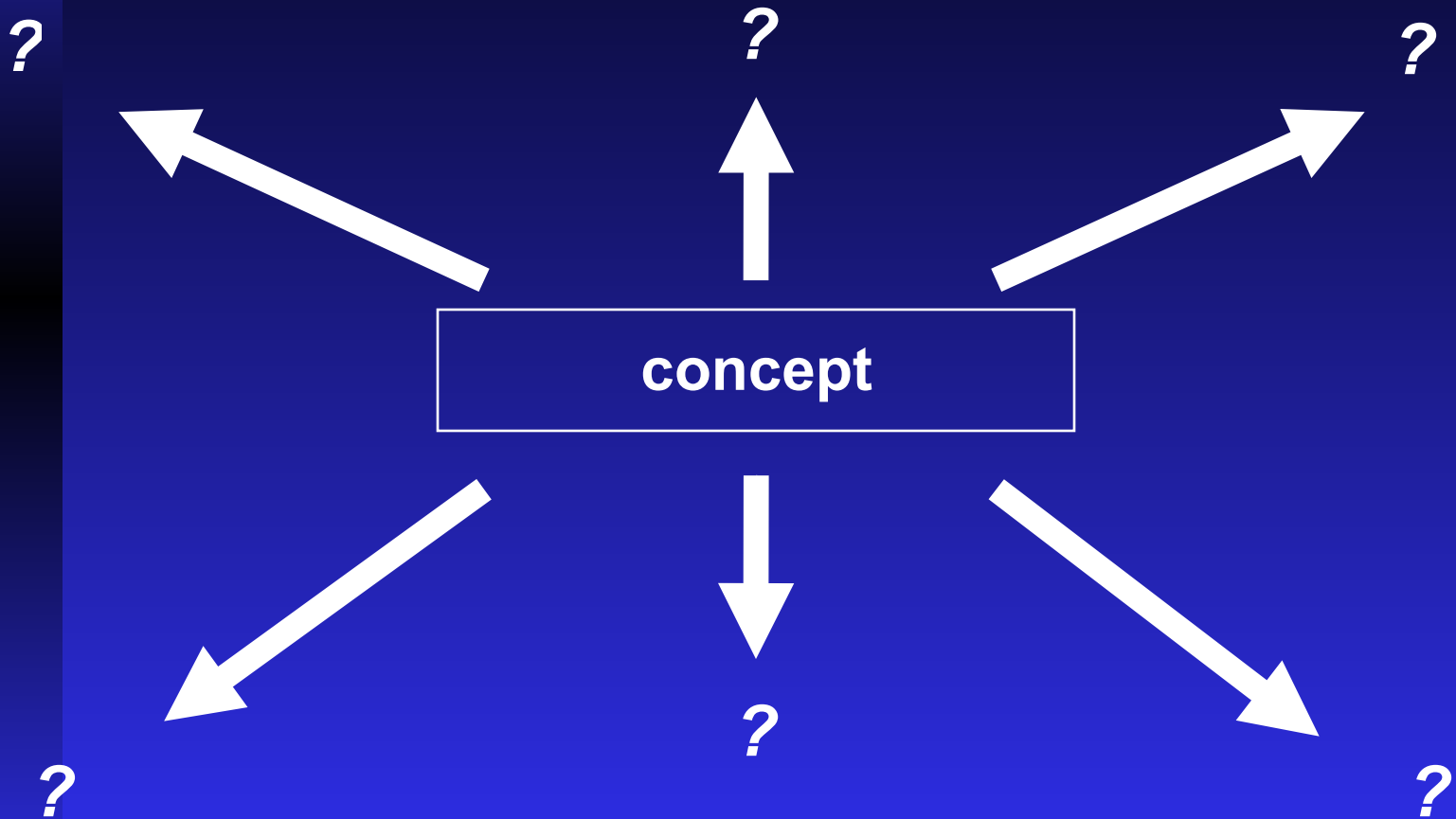
Multivariate conception

- ... but creativity is more than the sum of these factors
 - ◆ Thresholds for factors
 - ◆ Partial compensation between factors
 - ◆ Interactions between factors

The Quartet

- A look at the four factors for creativity
 - ◆ Cognition
 - ◆ Personality
 - ◆ Emotion
 - ◆ Environment

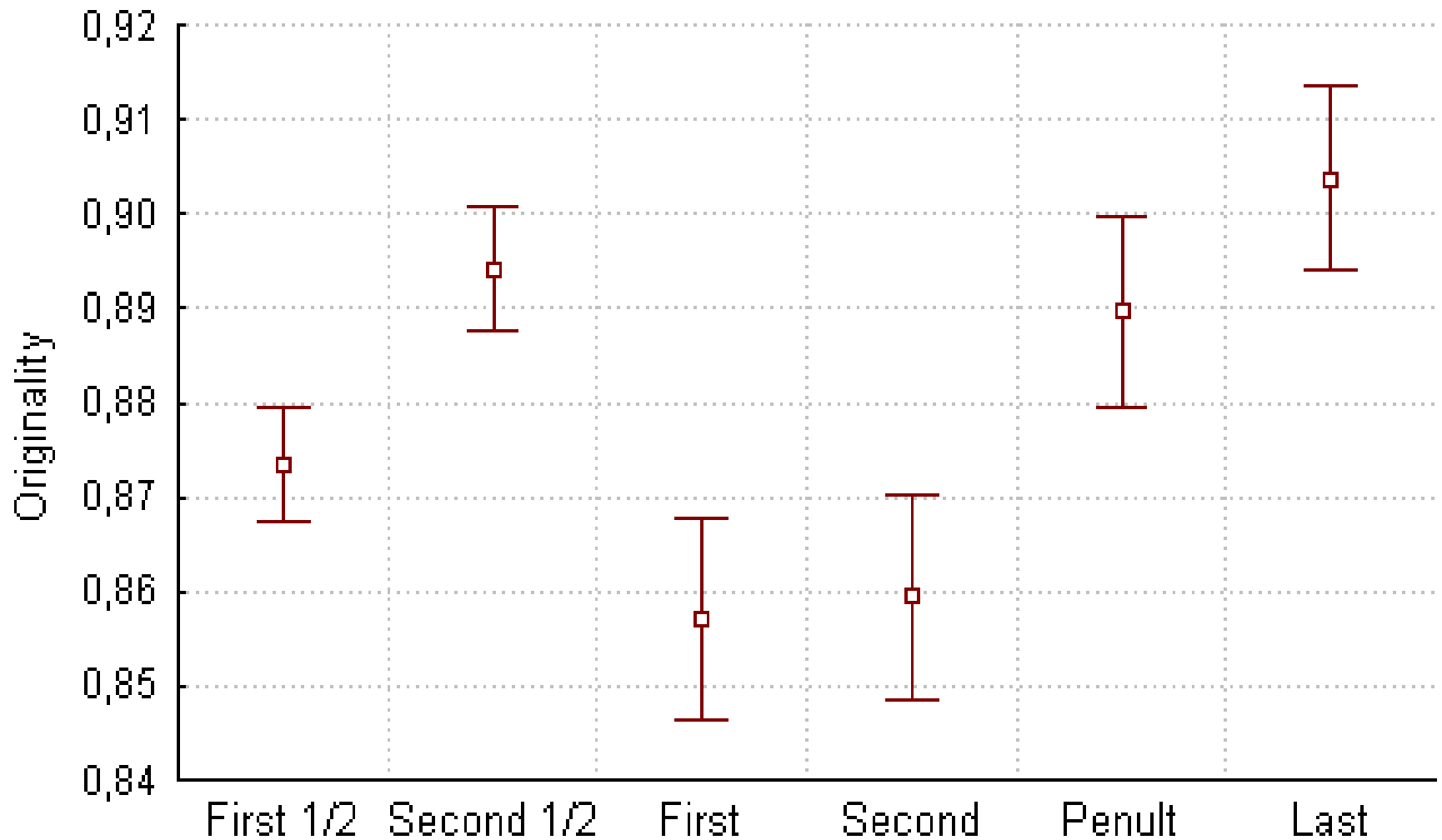
Divergent Thinking



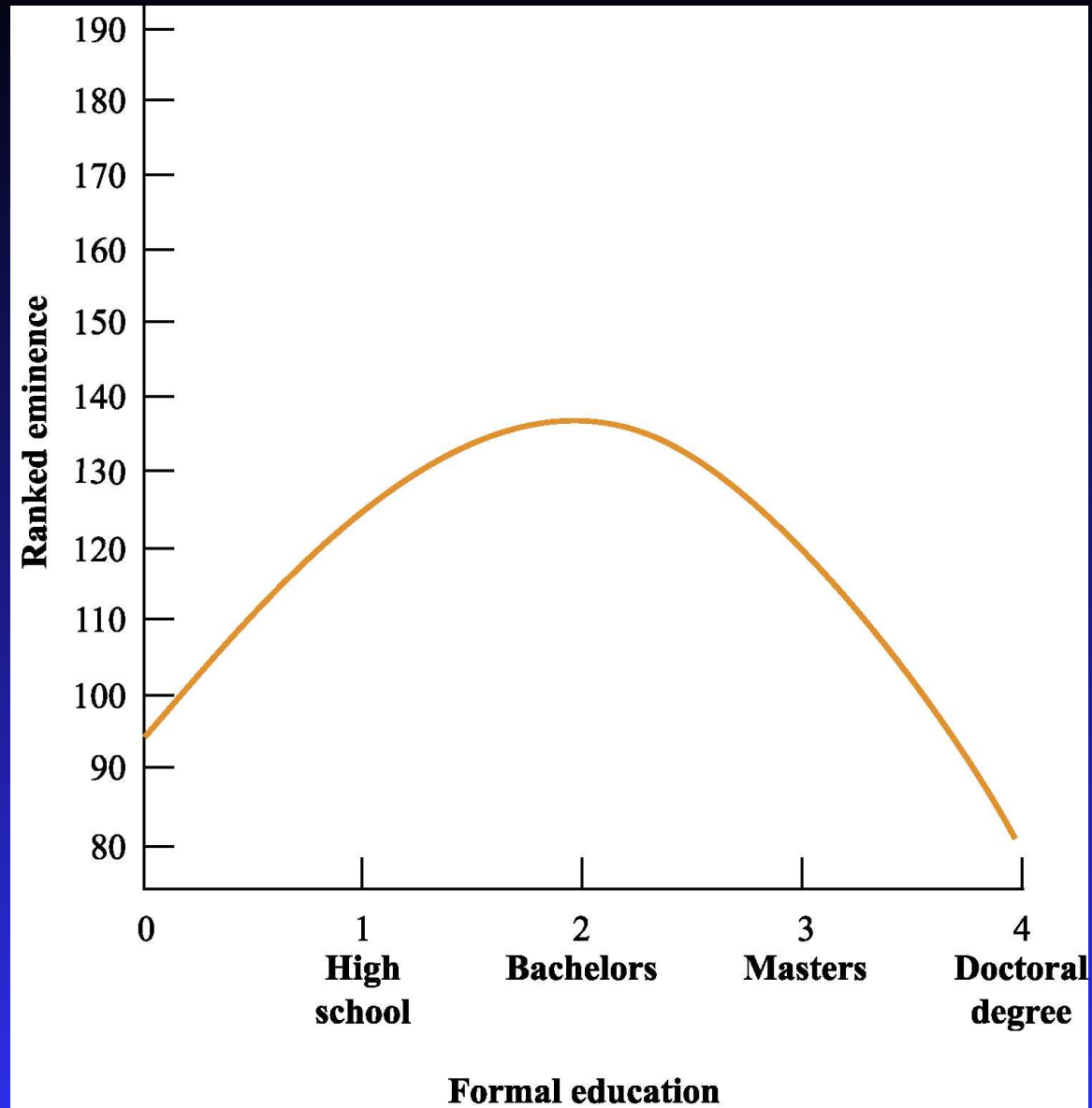
Example of a series of answers

rank	responses	f	originality
1	make a nest of boxes	1	.98
2	make a shed	6	.90
3	make a shelf	3	.95
4	make a chair	5	.92
5	cage	6	.90
6	cut out shapes	3	.95
7	store games	12	.81
8	store books	13	.79
9	grow plants inside	1	.98

Mean originality as a function of rank in the sequence
(N = 197)



Knowledge



With an unlimited quantity of water and three glasses of different capacities, how can we obtain the desired quantities ?

Problem	Capacity of glass A	Capacity of glass B	Capacity of glass C	Exact quantity to obtain
1	21	127	3	100 cl
2	14	163	25	99 cl
3	18	43	10	5 cl
4	23	49	3	20 cl

Conation

- Cognitive Styles

- ◆ Example : intuition

- Personality traits

- ◆ Examples : risk taking, individuality

- Motivation

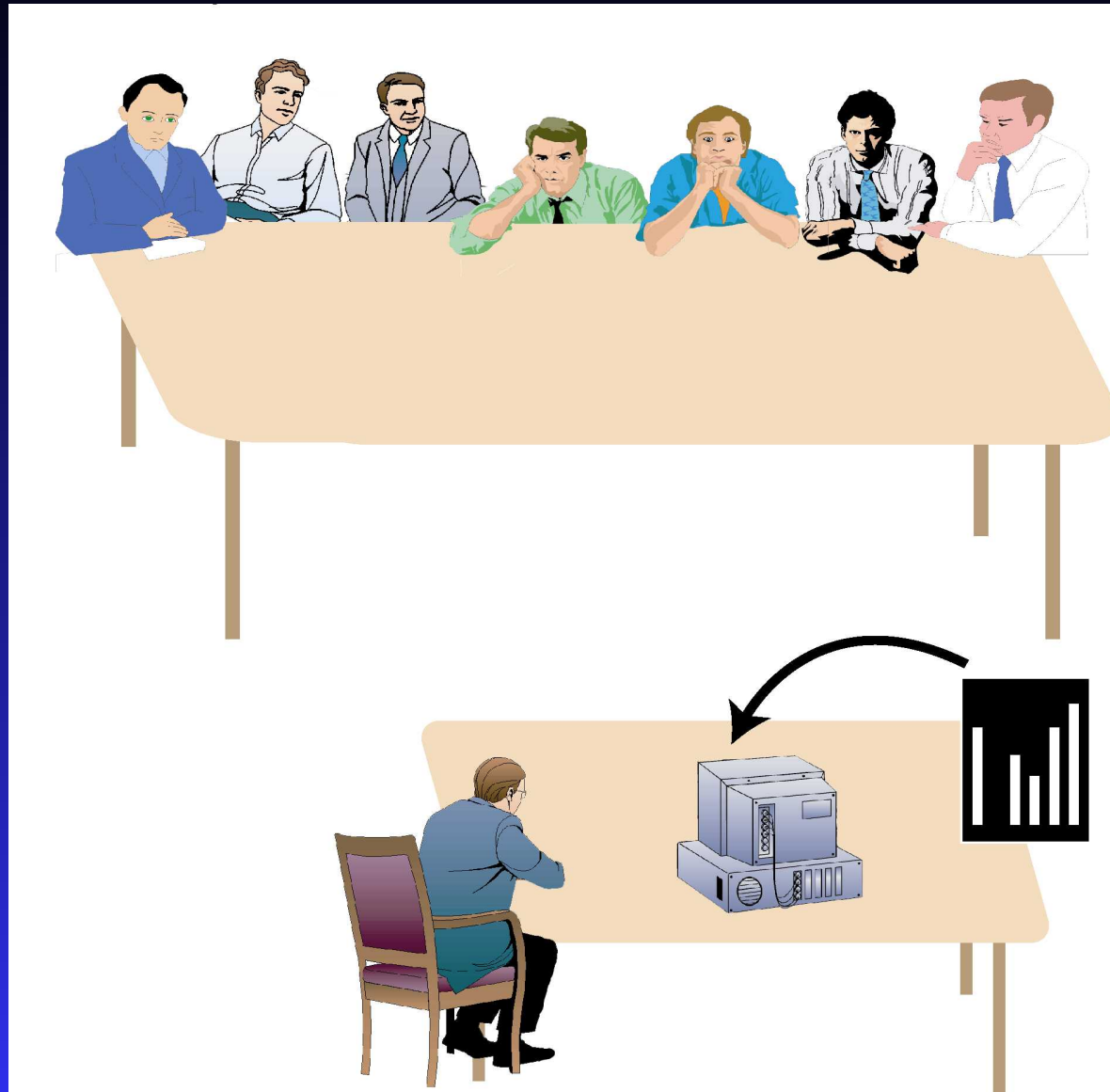
- ◆ Examples : Intrinsic, extrinsic

Buying low and selling high : Risk taking and creativity

- **Sample risk taking scenario (Lubart & Sternberg, 1995) :**
 - ◆ **Imagine that you are an artist who will illustrate a children's book. You may use two styles for a story about a fire :**
 - ◆ **A) classic rendering of fire engines, or**
 - ◆ **B) unusual, cubist-inspired rendering.**
- Style B may be a great success or a big failure;
Style A will be acceptable but not more.**

**What is the lowest probability of success that you consider acceptable in order to pursue Style B ?
90%, 70%, 50 %, 30%, 10%**

Pressure to conform and it's links to creativity



Emotion

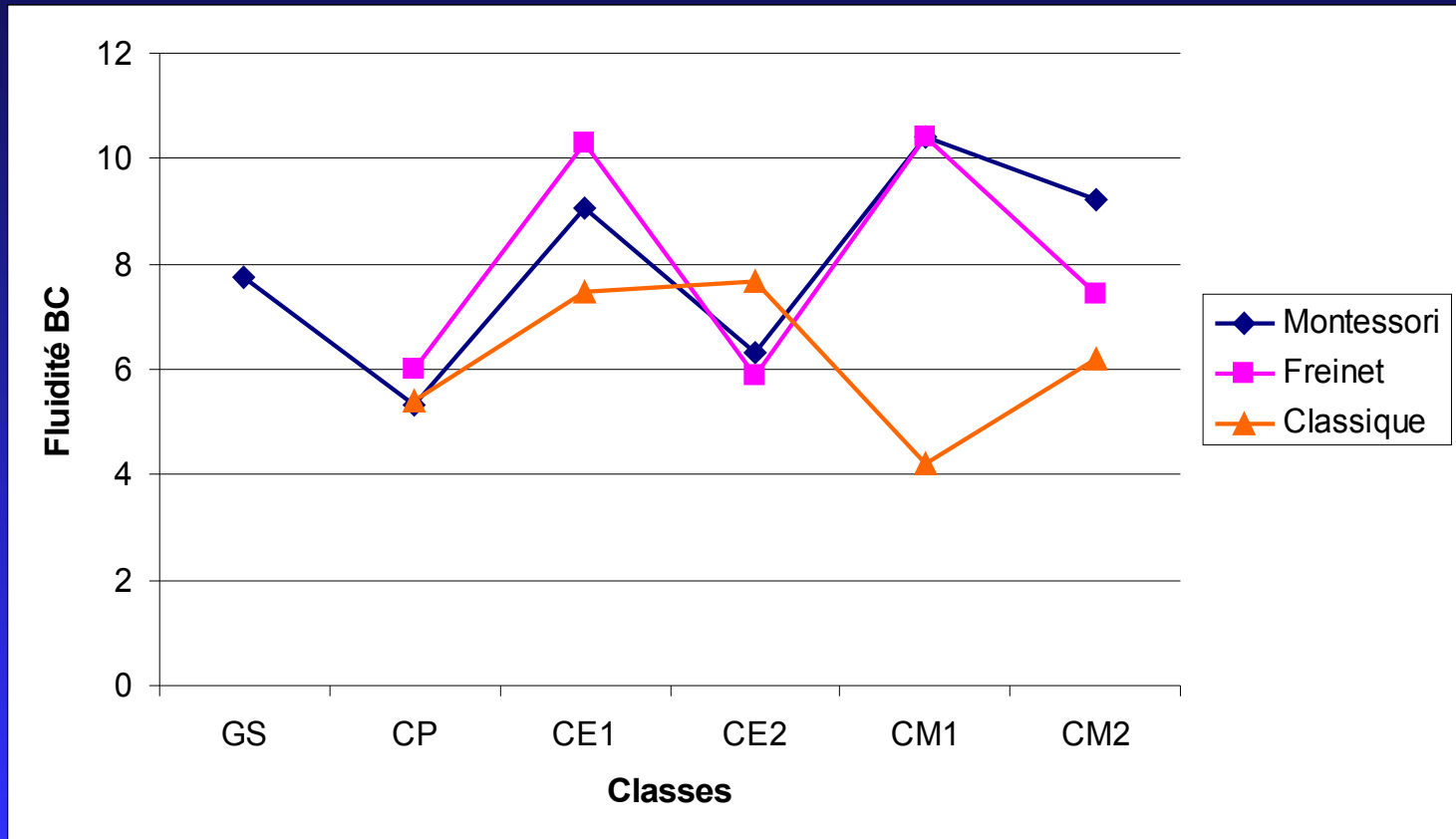
- Emotional states
 - ◆ Transitory
 - ◆ Positive and negative moods
- Emotional traits and styles
 - ◆ Idiosyncrasy, affect intensity
- Emotional intelligence

Environment

- Fostering or Hindering creativity
 - ◆ Constraints
 - ◆ Resources
- Evaluating creativity
- Levels of Environment
 - ◆ Home, school, Work, Community, National, International



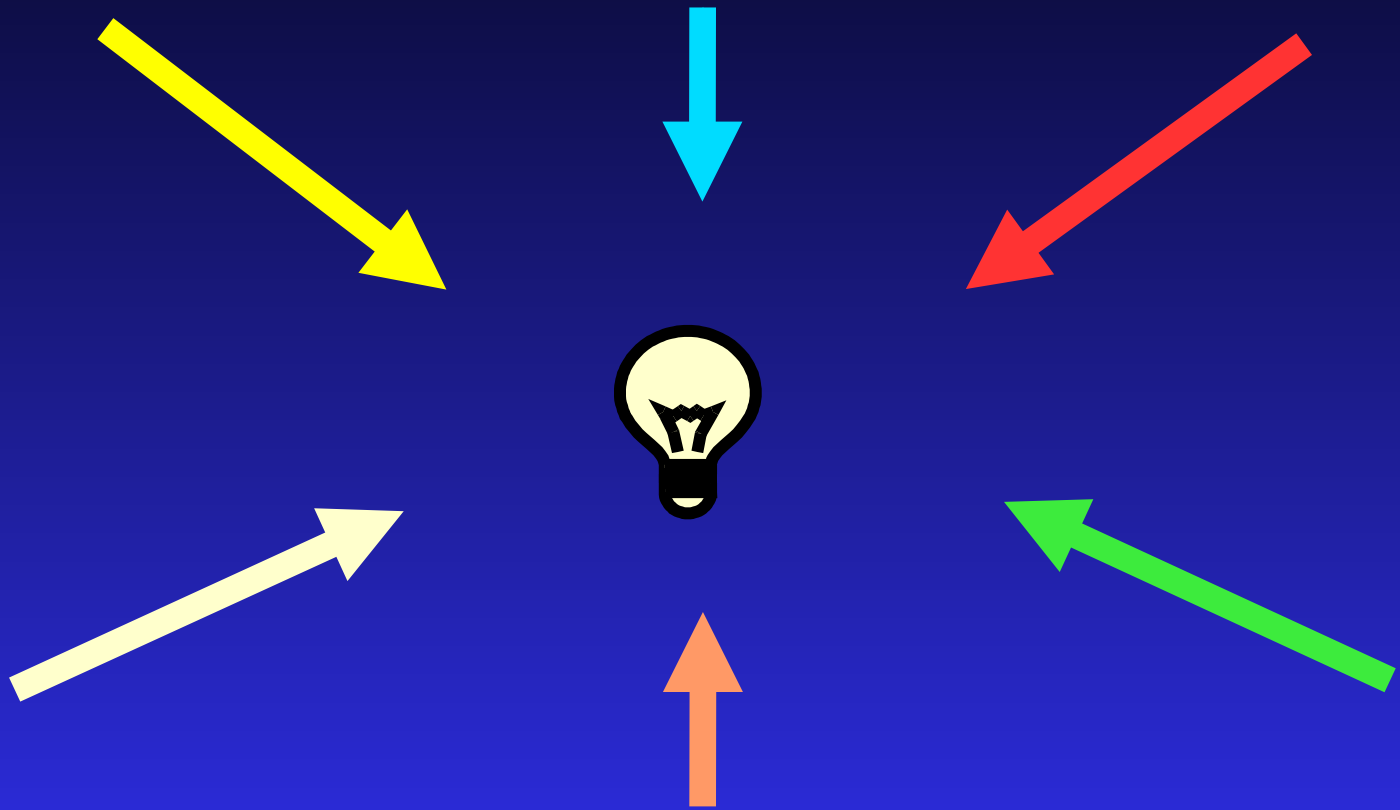
Pedagogy and creativity: an example of effects on divergent thinking (Besançon & Lubart)





Context : source of stimulation
The Millet --- Van Gogh Case

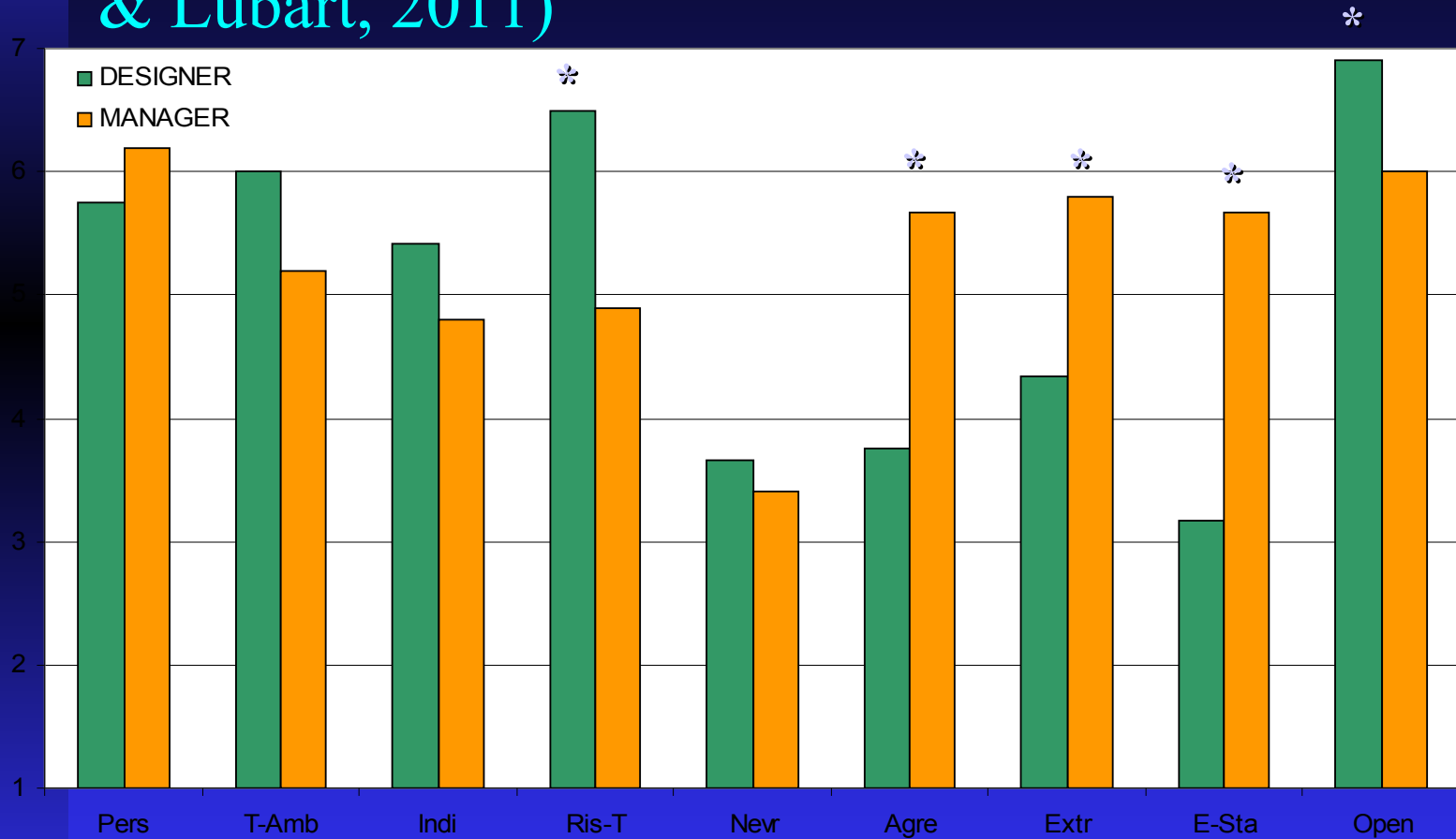
Convergent -integrative thinking



Applications of the multivariate approach: Measurement and selection

- Measures of multiple factors – cognitive ability tests, personality questionnaires, environment questionnaire
- Selection based on matching individuals' profiles to task requirements

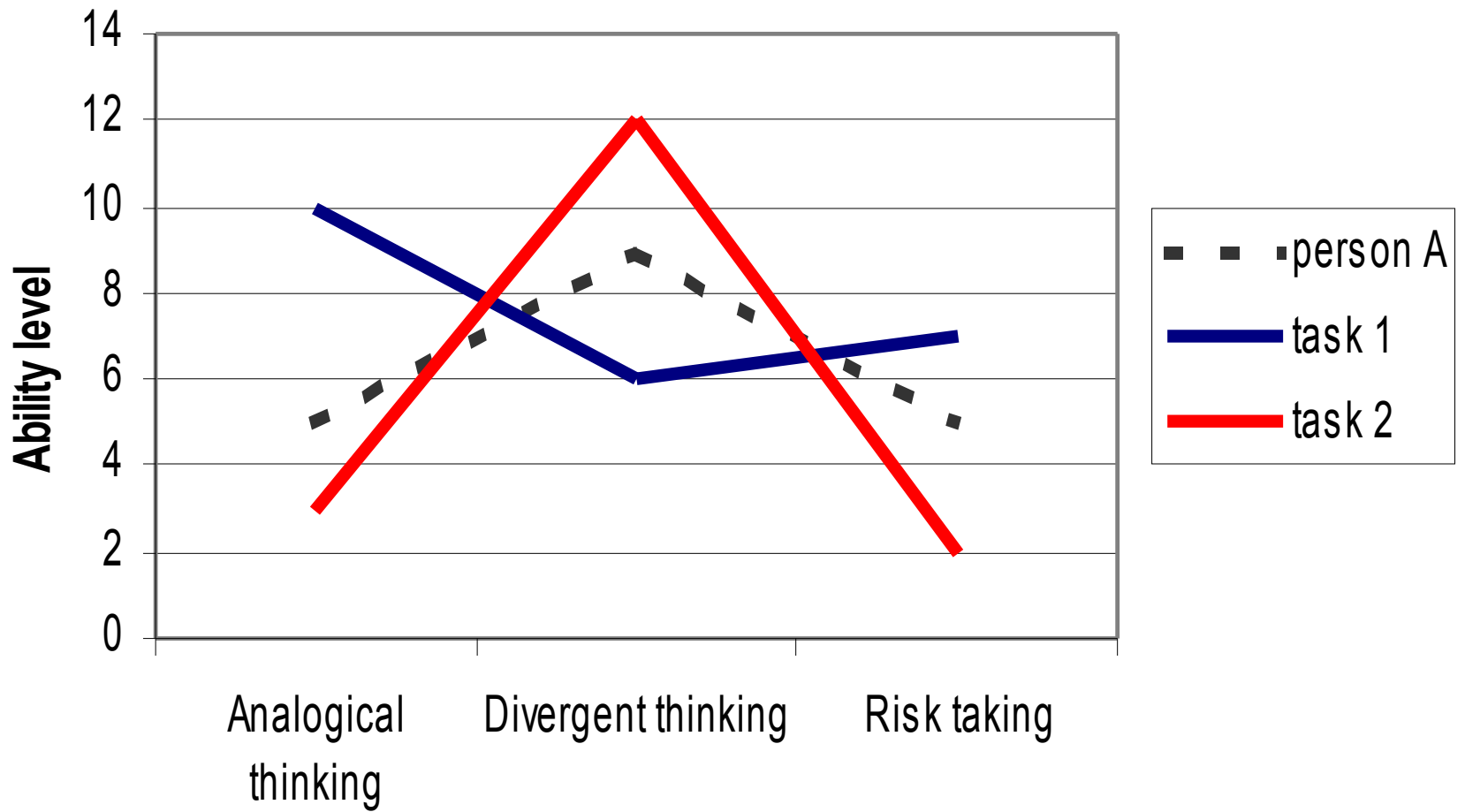
Rated importance of personality traits for creativity in two jobs (Caroff & Lubart, 2011)



Creativity training

Training should focus on multiple factors

Training includes
enhancing abilities
and learning when
to use them during
the creative process



Conclusions and Extensions

- Creativity is a multivariate phenomenon
 - ◆ Creativity appreciation and judgment
 - ◆ Cognition, conation, emotion
 - ◆ Environment
 - ◆ Personnel selection
 - ◆ Training : capacities, styles and process

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