

# Generating Ideas



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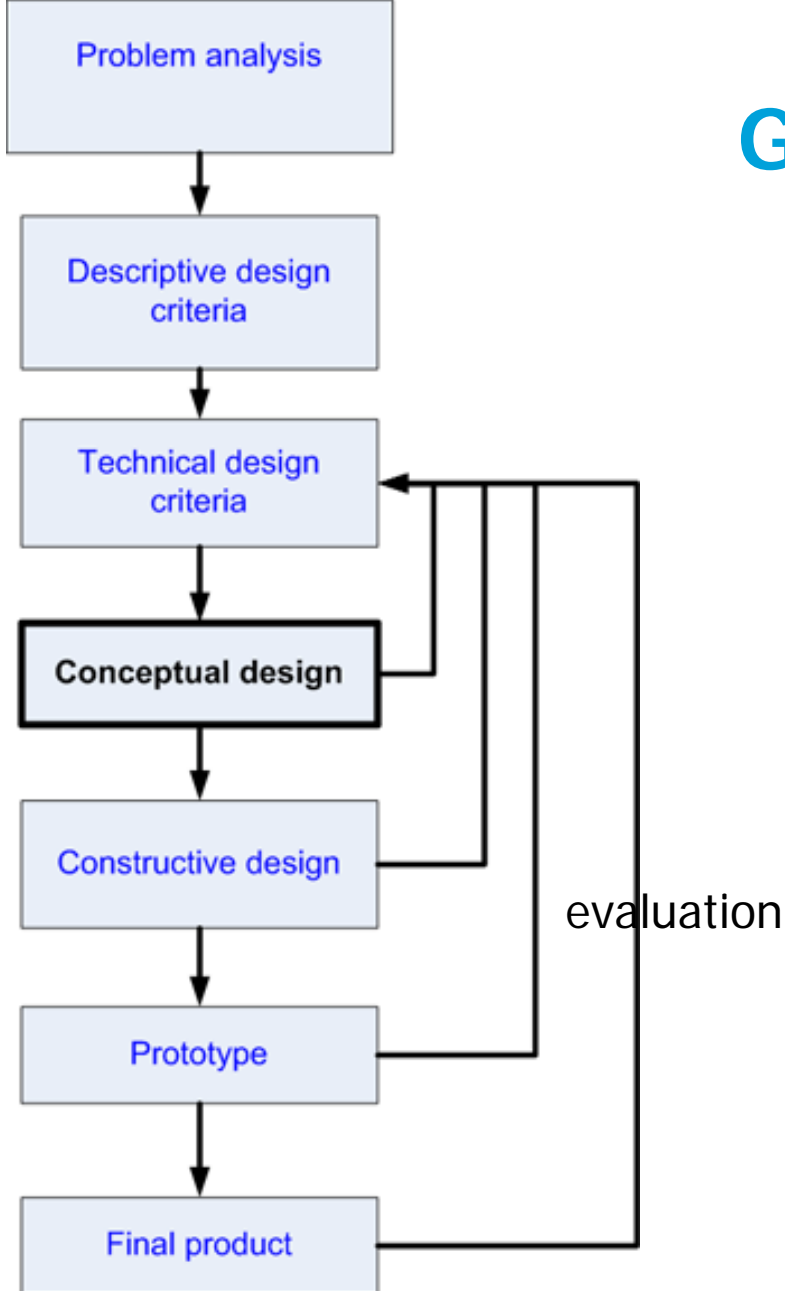


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# General design process



**Focus: conceptual design**



**Generating ideas**

Question: who is creative?  
What characteristics?

# Learning objectives of this lecture

- Create a (safe) environment to generate ideas
- Apply several techniques to generate ideas
- Classify and structure ideas

# Structure today's lecture

## First hour

- Theory
- Create (safe) environment (Do's and don'ts)
- Guidelines/techniques to keep process going
- Warming up exercise(s)

## Second hour

- Two idea generating sessions in groups

# Theory: creative process

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Socrates: Ideas are gifts from the Gods delivered  
by the Muses



Gradually changing towards sense of free will

# Theory: approaches to creativity

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Brainstorming:

- Diverging
  - Associating on ideas of others
  - Postponing judgement
  - Quantity, not quality
- Inventorising & grouping ideas
- Converging: choosing

**Brainstorming**



Osborn (1953)

Parnes (1992)

# Theory: approaches to creativity

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Biomimetics [1992]:

- Understanding biological principles
- Translation to original problem
- Improving existing technologies

Example: Velcro (inspired by seeds of plants seemingly glued to clothing)

**Biomimetics**



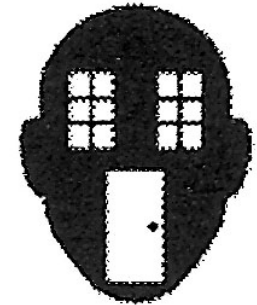
"The abstraction of good design from nature"

# Theory: approaches to creativity

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Synectics™

Synectics [Gordon,1976]:



Gordon (1976)

Prince (1970)

Extensive analysis of the situation

- Identifying critical bottlenecks
- Using analogies to break free from existing train of thought
- Forced fit: apply analogies to the original problem



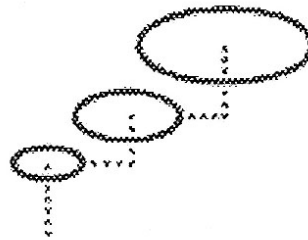
# Theory: approaches to creativity

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Lateral thinking/Random stimulus [DeBono,1970]:

- Escaping from an obvious thinking rut

**Lateral Thinking/  
Random Stimulus**



DeBono (1970)

- Possible techniques: random stimulation, identifying and breaking presumptions, absurd queries

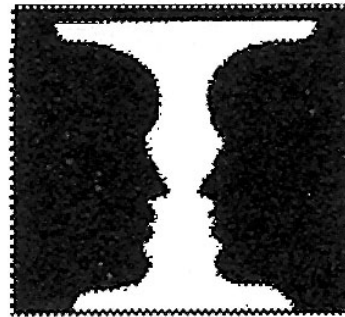
# Theory: approaches to creativity

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Gestalt [Lewin,1951]:

- About how an image can separate itself from its background

**Gestalt**



Lewin (1951)

Wertheimer (1945)<sup>11</sup>

- Possible techniques: making collages, using symbols, guided fantasy

Question: summary?

# Exercise

Divide this pie with three cuts in 8 pieces



# Exercise

Five slides will be shown

For each slide react immediately and shout what color is shown

# Exercise

**Brown**

# Exercise

**Yellow**

# Exercise

# Green

# Exercise

Blue



# Exercise

**Black**

# Exercise

**Brown Blue**

**Yellow Green**

**Black**

Lateral thinking: breaking presumptions

# Preparation: Accept differences

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

## Culture:

- Web of meaning, uses, stories, signs, language
- Determines our way of observation and interpretation

## Differences amongst people

- Extrovert vs. introvert

# Preparation

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

## Problem owner:

Describes problem and which aspect(s) are to be solved

## Preconditions:

- Express oneself's freely within the group
- No judging of people

# Preparation: DON'TS/Idea killers

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Isn't that a little too creative?

What will it cost?

Interesting thought, but now seriously...

You should have been in advertising!

Isn't it time to go back to work?

# Preparation

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

## Facilitator:

- Takes care the rules are obeyed
- Keeps the idea generating process going
- Monitors the process
- Everybody should be heard
- Keeps track of time

**Technique:** Decide on technique

# Idea generating techniques

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

## Associative

- Associate on each other's ideas, dare to go for the absurd
- Ordinary brainstorming
- Brainwriting (post its and basket)
- Brainwriting pool (round table, switching or post its)

# Idea generating techniques

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

## Provocative

- What if ..?
- What else ..?
- What if upside down, or inside out, or no gravity, or superhero?
- Reversed thinking how to prevent the solution?
- Other circumstances etc...



# Idea generating techniques

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

## Confrontative: Random stimulus

1. Start with a problem statement

Example: Improving the security of bicycles

2. Pick a random number between 1 and 20 and look up the corresponding word in the table :

1. weed	6. rust	11. arm	16. magnify
2. foam	7. gold	12. frame	17. hole
3. diagonally	8. vacuum	13. stem	18. doll
4. nose	9. devious	14. drift	19. duty
5. portrait	10. cheese	15. chocolate	20. coal

3. Generate ideas starting from this term

Example term: 'drift'

4. Apply this to the original issue

Example: 'drift' as a lateral movement - as a cyclist gets knocked over by a car, it might be handy to be able to make a side movement to avoid the car

5. Elaborate the idea

Example: one might make side wheels that stand perpendicular to the driving direction, at a certain angle to the road surface, a cyclist would move sideways without falling (these wheels do exist !)

# Idea generating techniques

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Intuitive:

- Use more senses (sound, touch, feel)
- Letting go in order to achieve a eureka moment
- Guided fantasy what if you were the person to undergo the process
- Working with art and images: collages

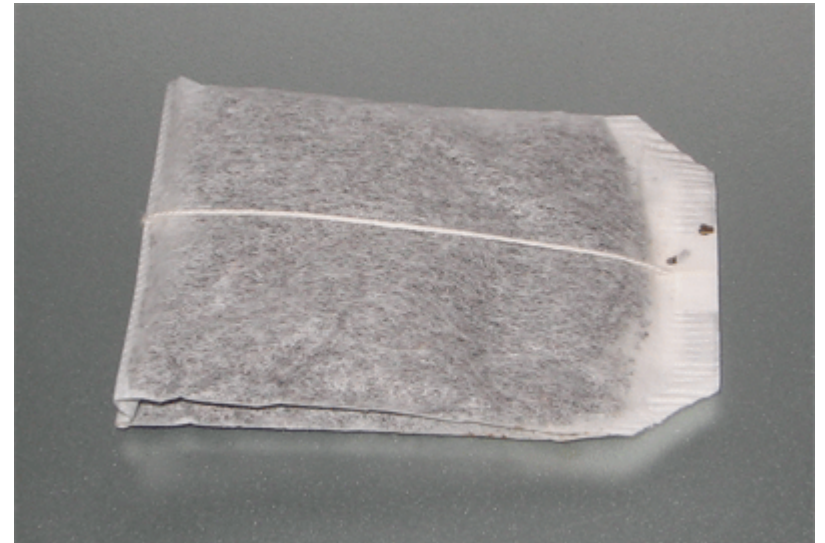
Question: summary?

# Exercise

Company that produces tea-bags

New markets

Groups of 6 persons



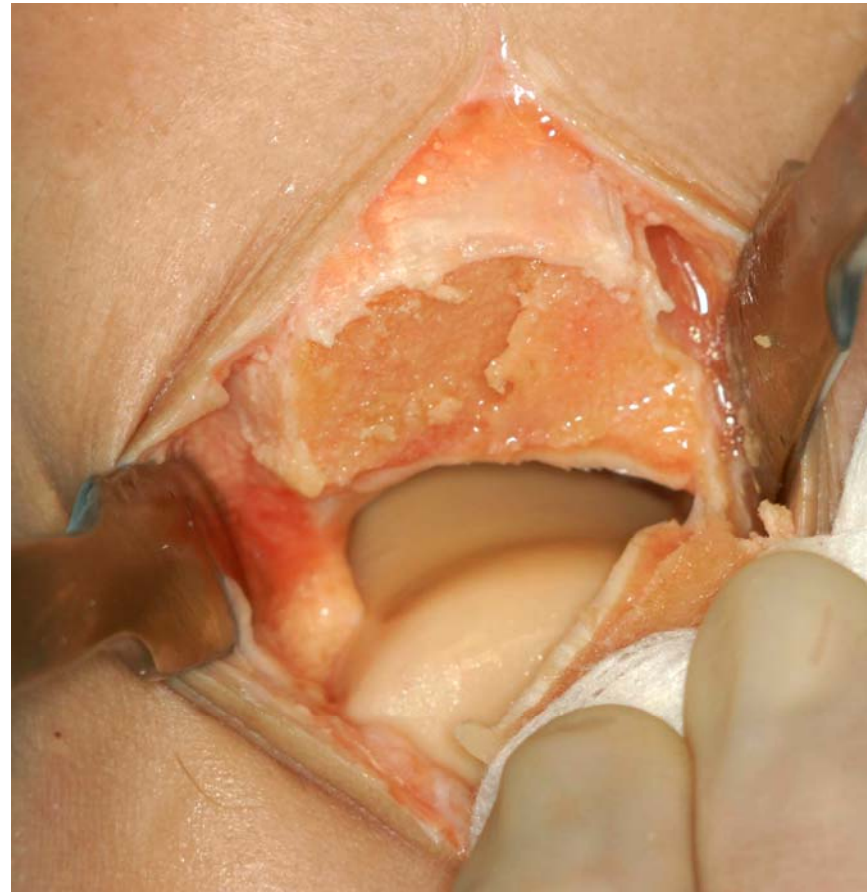
You have three minutes to come up with 60 ideas

# Exercise

Switch groups, again formulate three groups

Tennisball

Ways to cut bone tissue



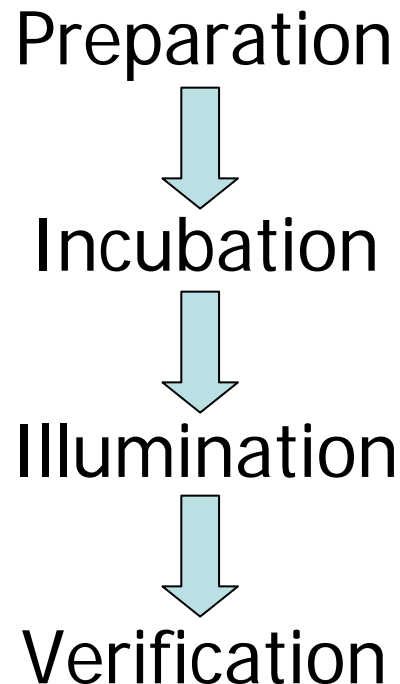
# Preparation generating ideas

- Two assignment groups that have different assignments (total of 6 persons)
- Indicate a facilitator (first session)
- Determine which technique will be used and prepare, set up the rules
- Prepare problem description
- Repeat all for second session
  
- Summary of the session in your final report

# Theory: creative process

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Wallas, 1926: 'The Art of Thoughts'



# Theory: creative process

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Parnes & Osborne, 1992: CPS model

Creative diamond: **scannen**

# Theory: creative process

[based on Creative facilitation by M. Tassoul, IDE, VSSD]

Isaksen, Puccio & Treffinger, 1999: Ecological  
Approach

scannen

Quality through quantity