The different approaches to creativity.

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A few definitions :

when we talk about «creativity» we are talking about «creativity of ideas»

- With the term ideas, we mean : « a solution to a given problem », meaning, a new way, an original way, unheard of way to solve a problem or to satisfy a concrete need.

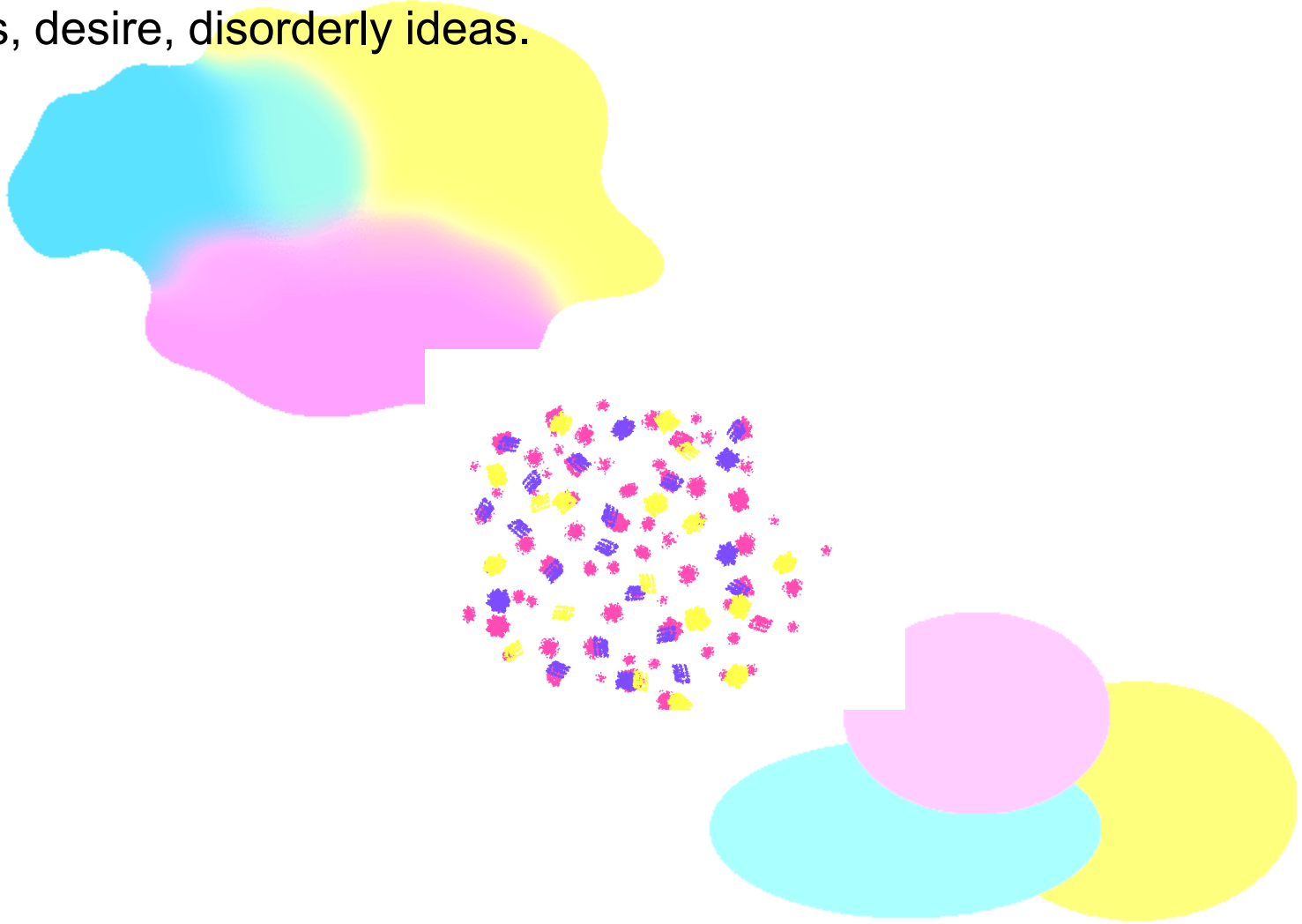
- Creativity is:

  « the capacity to achieve something which is both new and adapted to the context in which it is taking place ».

- The aim of creativity techniques is to encourage the production of ideas.

Between the imaginary

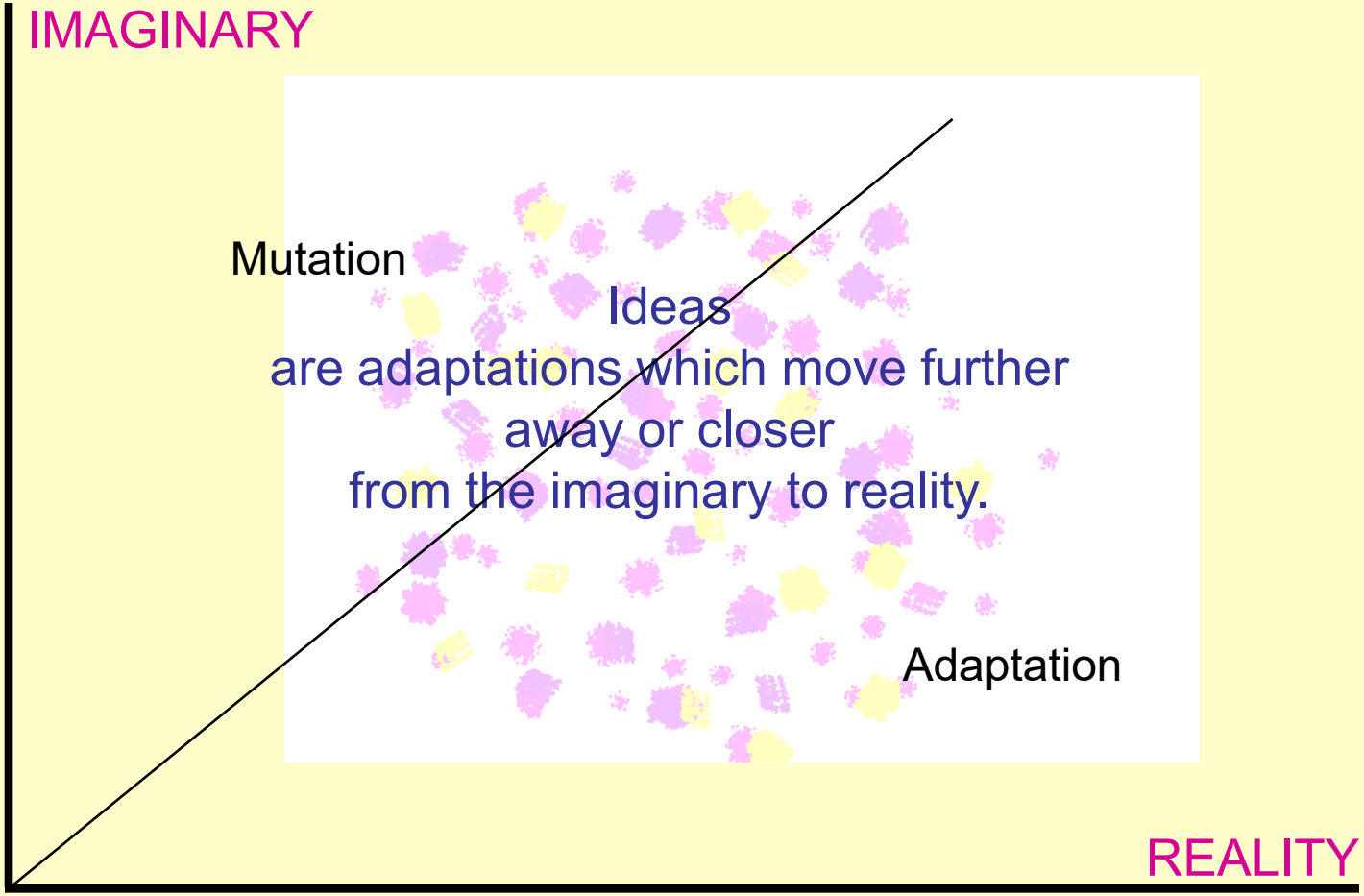
Dreams, desire, disorderly ideas.



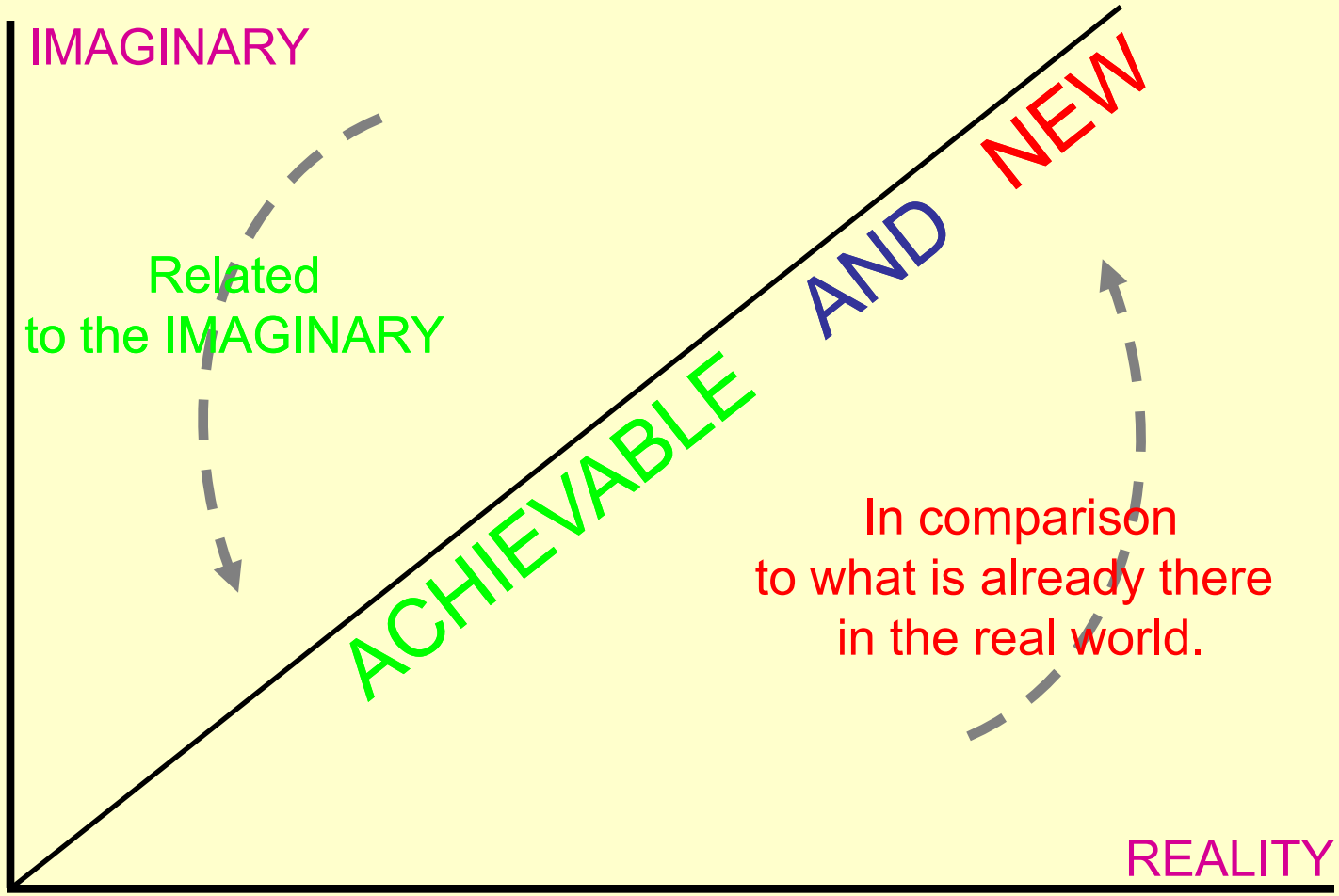
And reality

Objective constraints, everyday « life », what already exists.

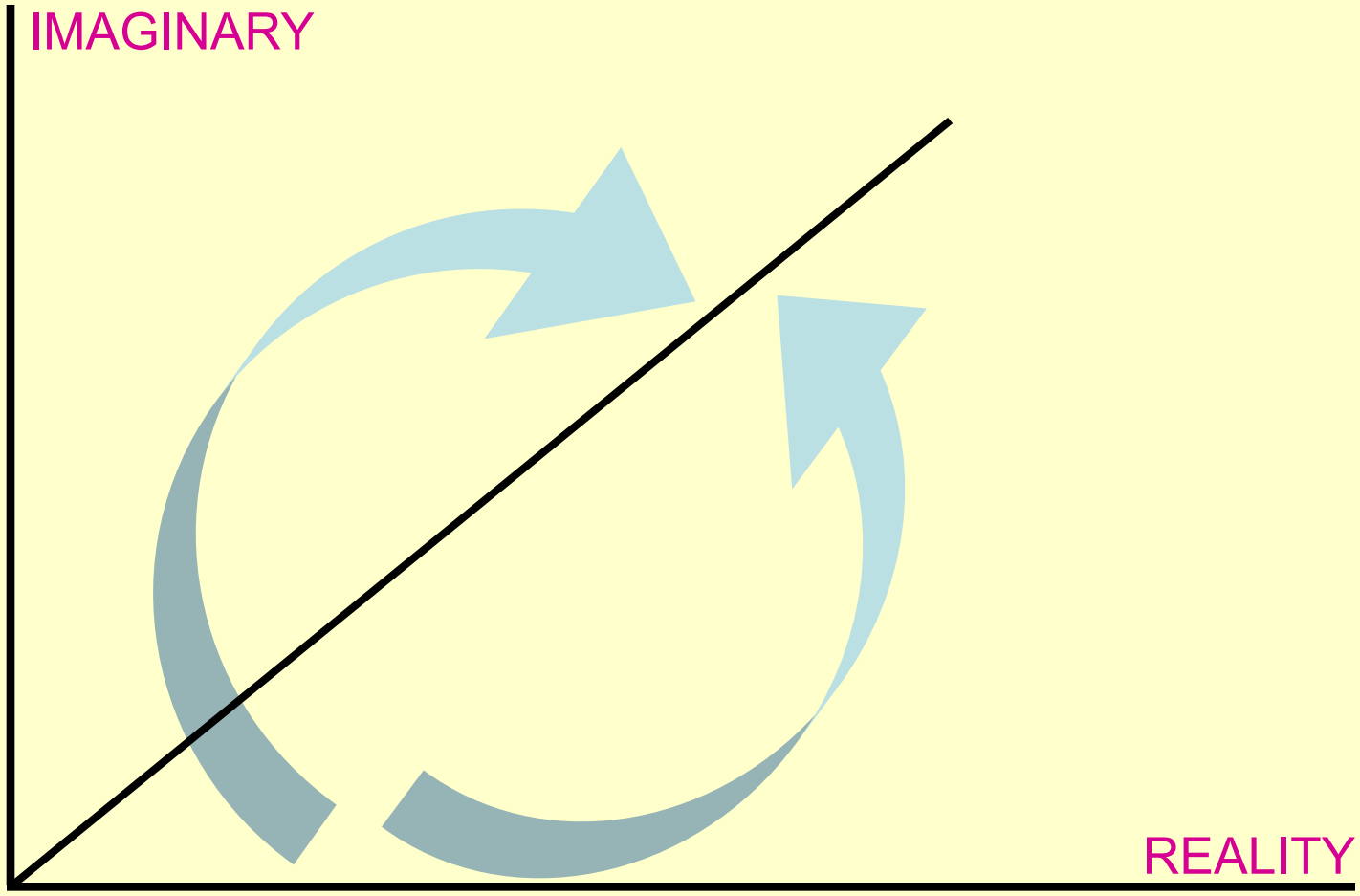
When we are « being creative »,
we aim to achieve a space which is half-way between the IMAGINARY and the constraints that we have set.



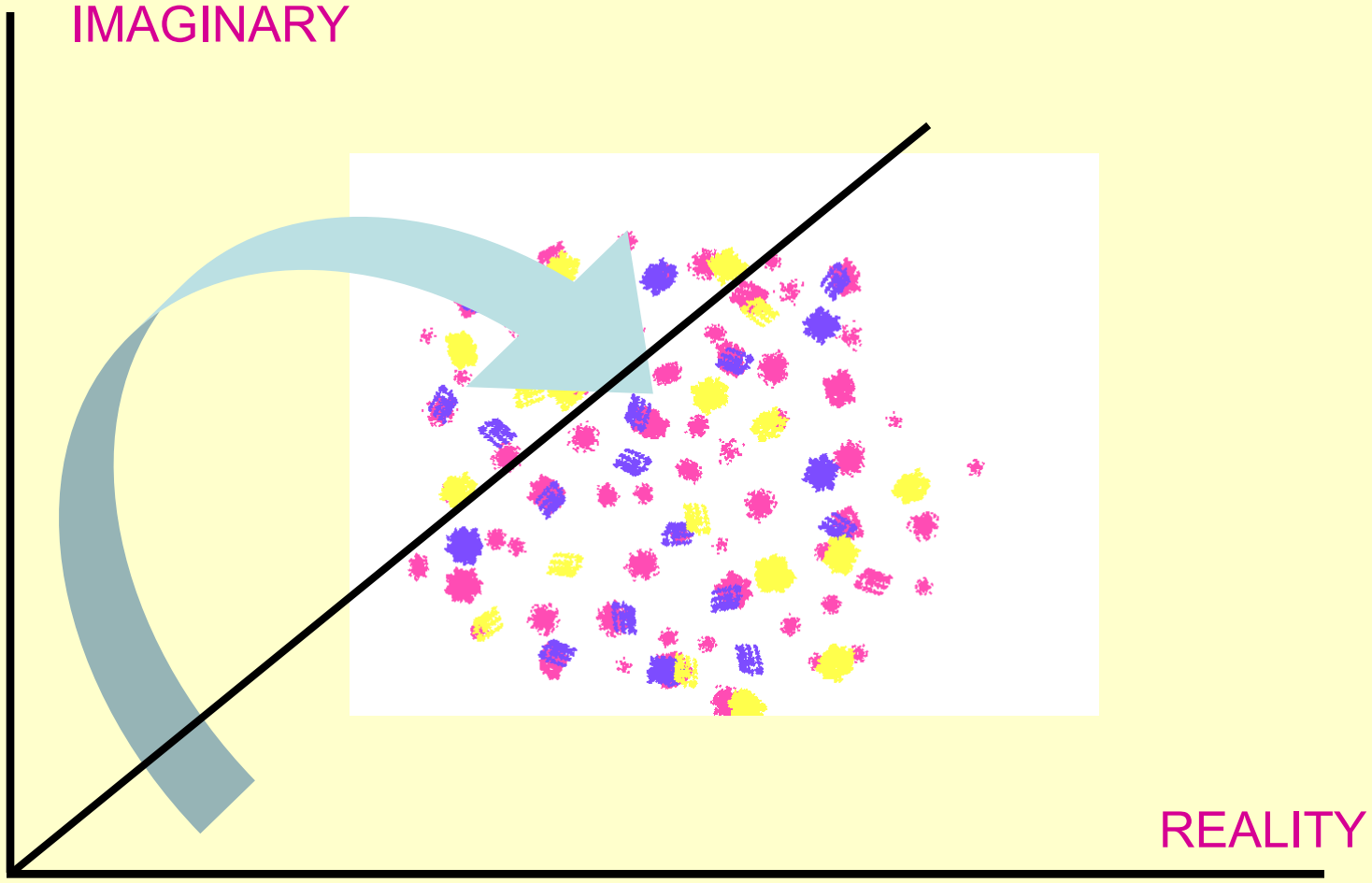
We are looking for ideas



To reach this space, there are 2 different routes :



On one hand, a route where we will take a temporary leap into the irrational , calling for the emotional dynamic coming out of a group..



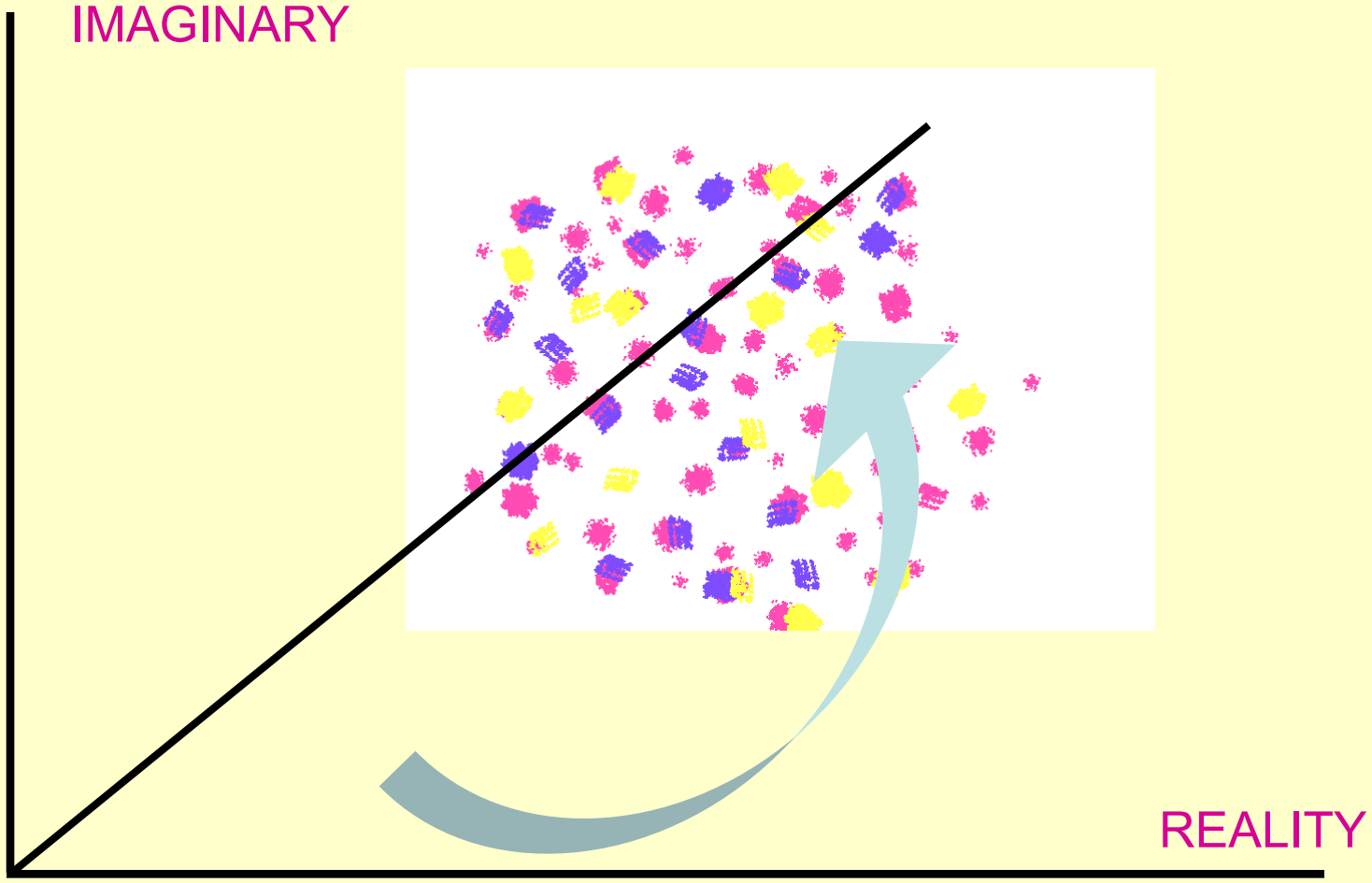
With the help of techniques, such as :

- **Mainly, techniques of detour,**
  such as techniques :
  - *of distortion*
  - *force-fit,*
  - *«day dreaming »,*
  - *projective techniques,*
  - *with graphics .*

- some **techniques of analogy,**

- the **« authentic » brainstorming.**

On the other hand, a route which will gradually stray away from logic without taking a detour into the irrational,
(hence without calling upon the group's dynamic)



With a narrow organized approach,
With techniques such as :

- Rational discovery matrix
- Some techniques of analogy
- Techniques of « lateral thinking »
- Techniques of individual idea collecting
  (« idea harvesting, «participative innovation »)
- The Triz problem solving method

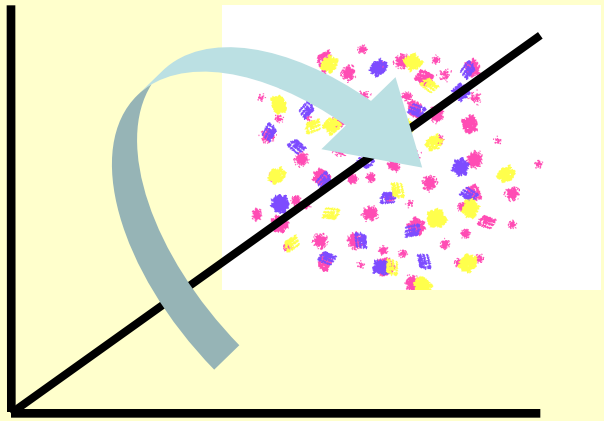
Two complementary routes

Those 2 families of techniques :

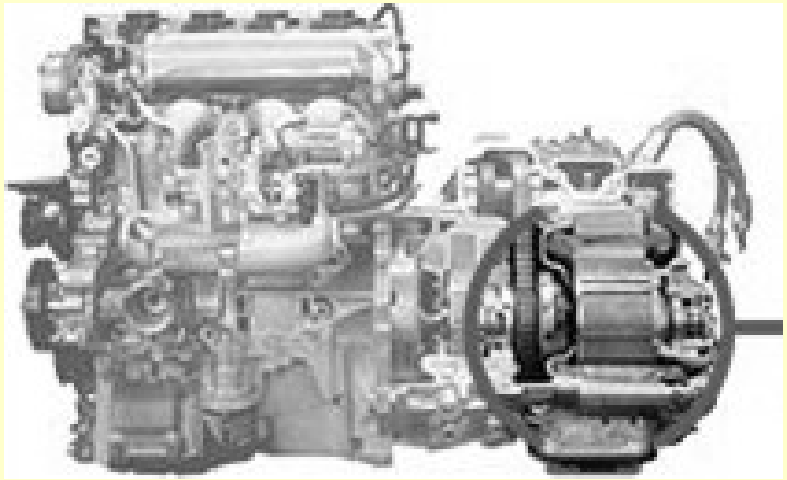
- Are not competing but are complementary,
- They can be adapted to different stages of the innovation process,
- They correspond to different types of problems
- They correspond to different types of creative personalities,

Let’s first, talk about techniques, which need in order to find realistic ideas

to take a temporary leap into the irrational by calling upon the emotional dynamic of a group



To take a leap into the irrational , you need :



Intellectual tools

Creativity techniques
(A number of approaches that aim at destroying old configurations to create new ones)

An emotional driver

(motivation, desire, passion, anxiety, desire)
The emotional dynamic of a creative group

What do all creative techniques have in common? :

1) The language of associations

2) Temporary suspension of judgment

- The language used by a group must not be rigid
- The language used in a group, is a sentence where everyone has contributed something.

Participants must learn to associate :

- Associations :
  - semantically
  - subjectively.
  - phonetically
  - By using reversals
  - Through metaphors
- Breaking words down
- Inventing words

Temporary suspension of judgement

- Guildford's « Invention »
- The most important element of creativity : the « why not? » element.
- Judgment is re introduced later on, in a separate sequence .

Why use an emotional driver ?

Because :

- An intellectual « risk » exists.
- To help us move away from rigid automatisms
  - **To capture** individual energies
  - To help give **confidence**
  - **To allow yourself** to express private fantasies

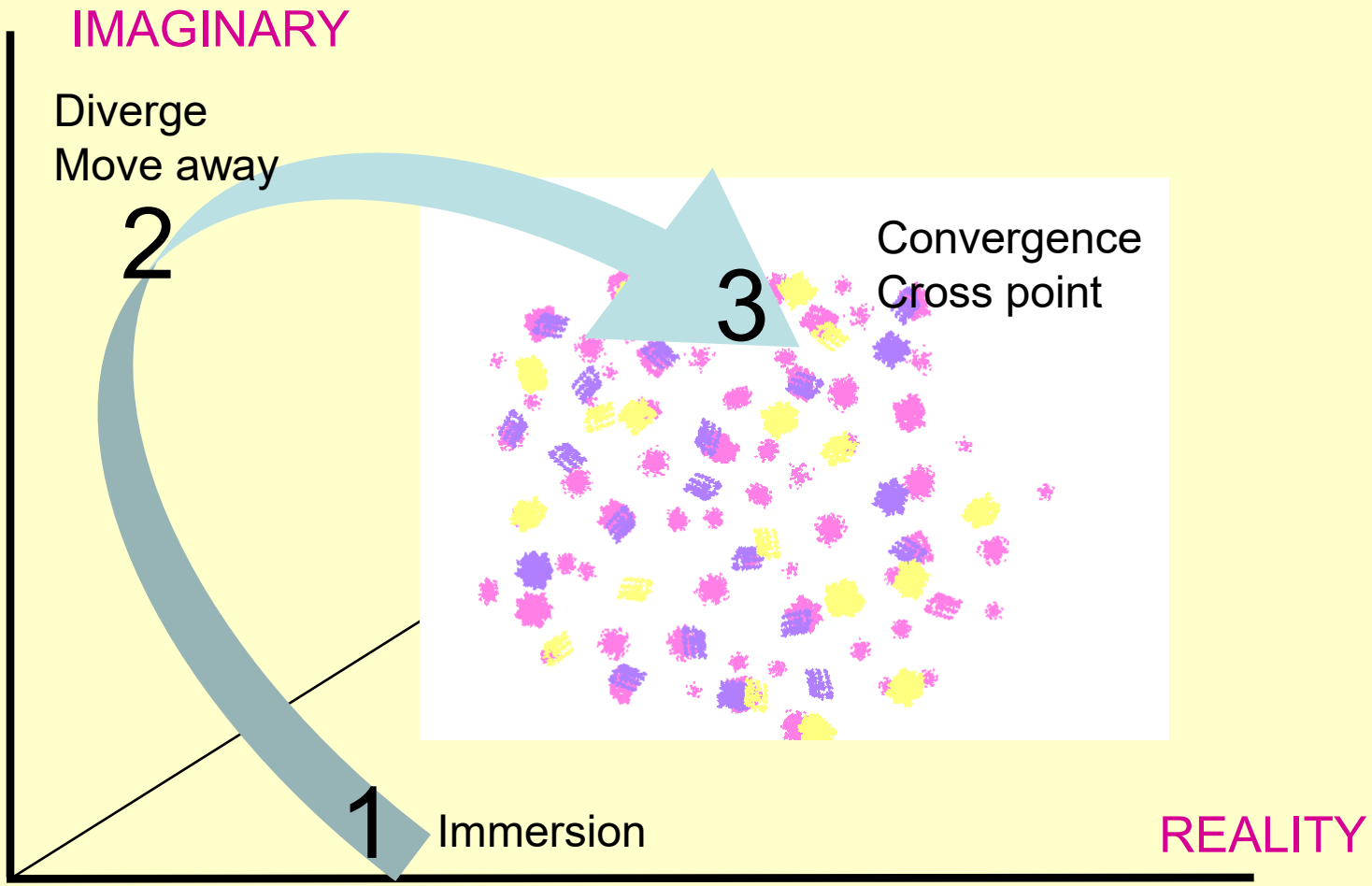
How to activate the emotional driver ?
The main driver is the group

- There are group moderating techniques
- We aim for personal implication
- Body expression is often used in training courses.

3 families of techniques

- 1) The techniques of detour family
- 2) The techniques of analogies family
- 3) The « real » brainstorming

1) The techniques of detour family



Phase 1 : Immersion

- **To immerse oneself, is to become obsessed by the problem**

  - **Step 1 : start by asking the person who requested your help to express the problem objectively :**
  - **Step 2 : Subjective immersion : The idea is to not only understand the problem with your mind , but « to get inside the problem »**

Phase 2 : Moving away (or divergence)

- **Is necessary to produce :**
  - **Stimuli for the imaginary, matrix of ideas, analogies**,
  - **« vague ideas »**

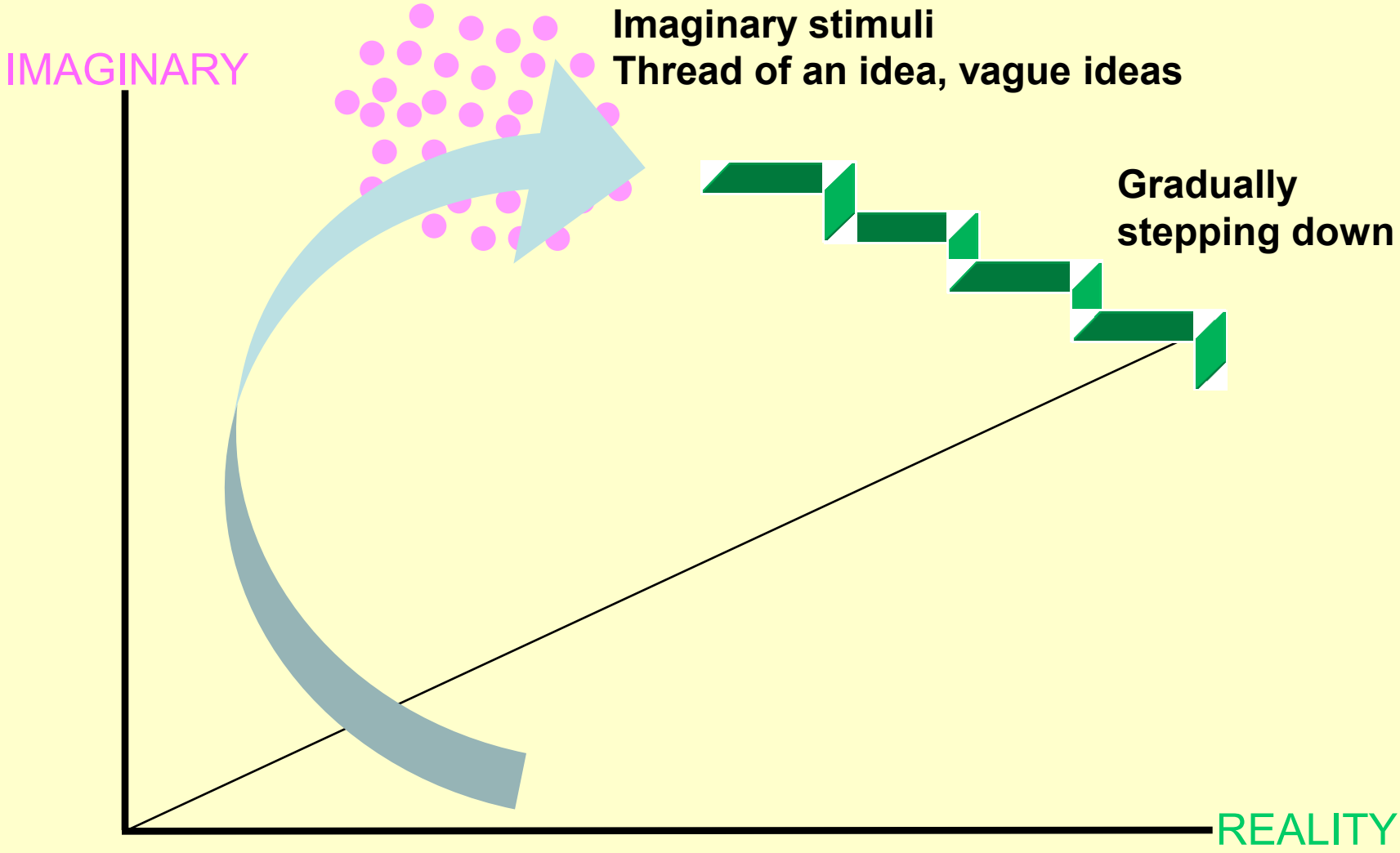
    which will be used afterwards to produce realistic ideas.
- **We diverge more or less further away, depending on the type of problems.**

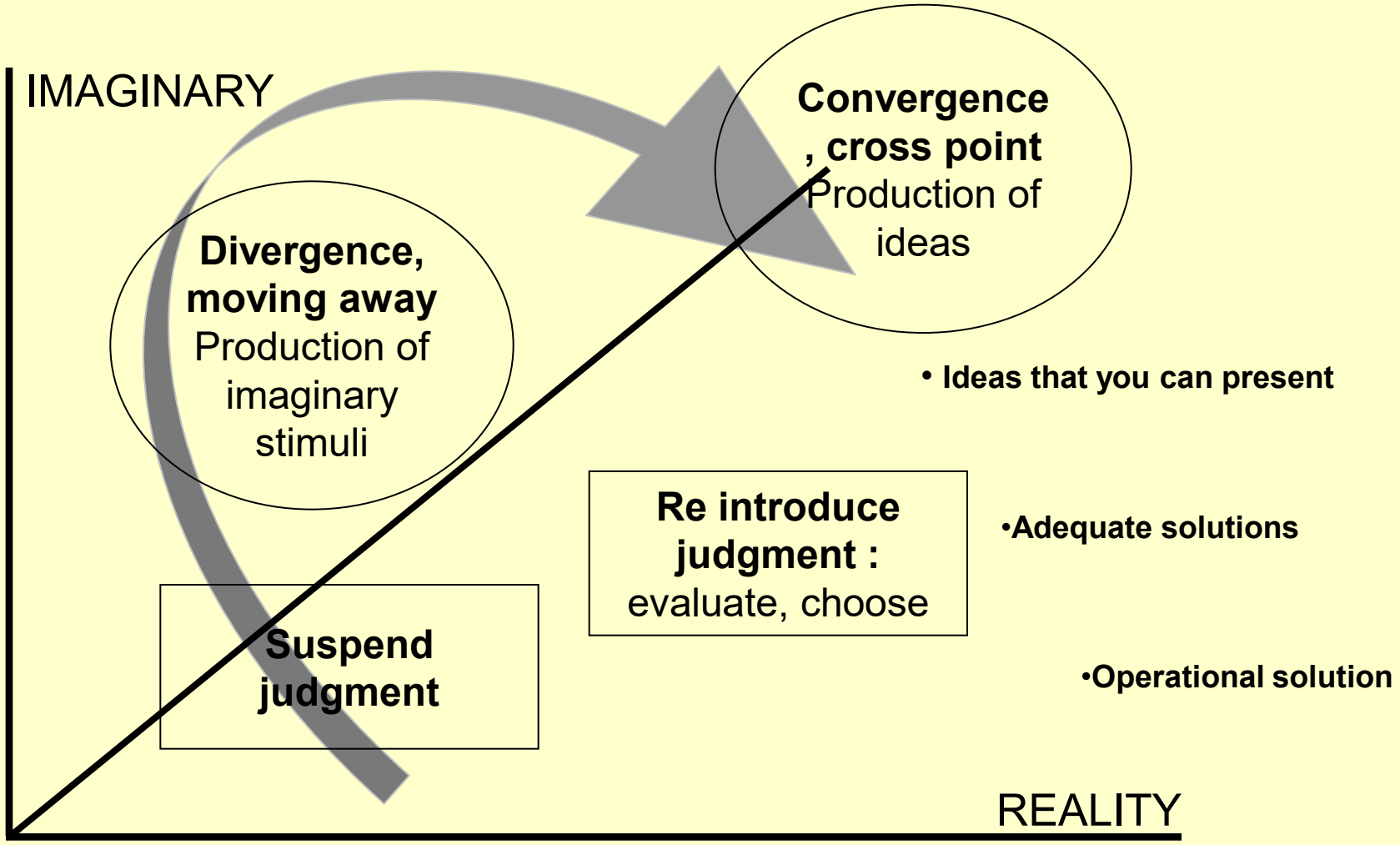
Phase 3 : The cross point, or convergence.

- The term « cross point », quite clearly evokes the dialectical encounter between the imaginary and reality.

- The most difficult, is to converge, to « cross » imagination with reality, knowing that deep down : « to create is to cross things with each other ».

A series of « steps » from which we gradually come down.
Each « step » represents an idea that we are looking for.




IMAGINARY
Convergence , cross point
Production of ideas
Divergence, moving away
Production of imaginary stimuli
• Ideas that you can present
Re introduce judgment :
evaluate, choose
•Adequate solutions
Suspend judgment
•Operational solution
REALITY

The main techniques of detour :

- Distortion techniques
- Force-fit techniques
- Projective techniques
- « Day dreaming » techniques
- Techniques with graphics and non verbal techniques.

1.1 Distortion techniques

➢ Aims :

- **Systematical data distortion, dissociation of elements, organized divergence.**

➢ How to carry it out :

- **Stage 1 : Breaking the problem up**
  - *The elements*
  - *Objectives functions,*
  - *The context,*
  - *Users*

- **<u>Stage 2) : Break the problem down from different « angles of attack »</u>**

  Increase ◆ Diminish ◆ Combine ◆ Change your way of dealing with the problem ◆ Save up ◆ Isolate a factor ◆ Get rid of a factor ◆ Reverse the problem ◆ take the opposite into consideration ◆ Reconsider ◆ Get rid of the problem ◆ Look for contradictions ◆ Swarm the problem up with verbs ◆ Go back up to the abstract ◆ Go back down to the concrete ◆ Change your way of looking at things ◆ Play with the problem ◆ etc…

1.2 Force-fit techniques

- **The aim :**

  produces a shock, a confrontation, between two worlds of reference.

➢ How to carry it out :

A) Draw a double entry matrix (for example)

- **With the elements and the functions**
- ***Between two families of objects that are not correlated***
- **From key words**

B) Force-fit with associations that are remote from the departure point.

- **The idea tree**

  Random force-fit associations

1.3 Projective Techniques

- **Aim :**
  - To project yourself inside the problem by identifying yourself to one element of the problem or by projecting the problem on an image.

- **How to do it :**
  - Through identification
  - Project with the aid of visual material :
    - **drawings,**
    - **Various figurative or non figurative elements,**
    - **Abstract photographies.**

1.4 Day dreaming techniques

- **Aim :**
  - Day dreaming is a privileged form of creativity for a person that is really immersed in the problem.

- **How to carry it out :**
  - Collective day dreaming : a collective sharing of the imaginary.
  - The individual dreaming, with group support.
  - Dreaming in writing.
  - The scenario method.

1.5 Techniques with graphics

- **The aim :**
  - Short circuit language, direct expression from the imaginary.

- **How to carry it out :**
  - The use of drawing and and of all forms of graphical expressions like :
    - Individual drawing , individual drawing that you pass around.
    - Collective drawing
    - A drawing from analogies.
    - Collages
    - Moulding, sculptures, painted masks
    - Modeling clay or plasticine is recommended for all shape studies.
    - Photography

Evaluating techniques of detour.

- **Strong points :**
  - Emphasizing dissociation between the phases of divergence and convergence allows to move « further away » and gives more time for converging.
  - They can solve complex problems, (contradictions), marketing or technical ones.
  - They train participants, and give creative reflexes.

➢ **Weak points :**

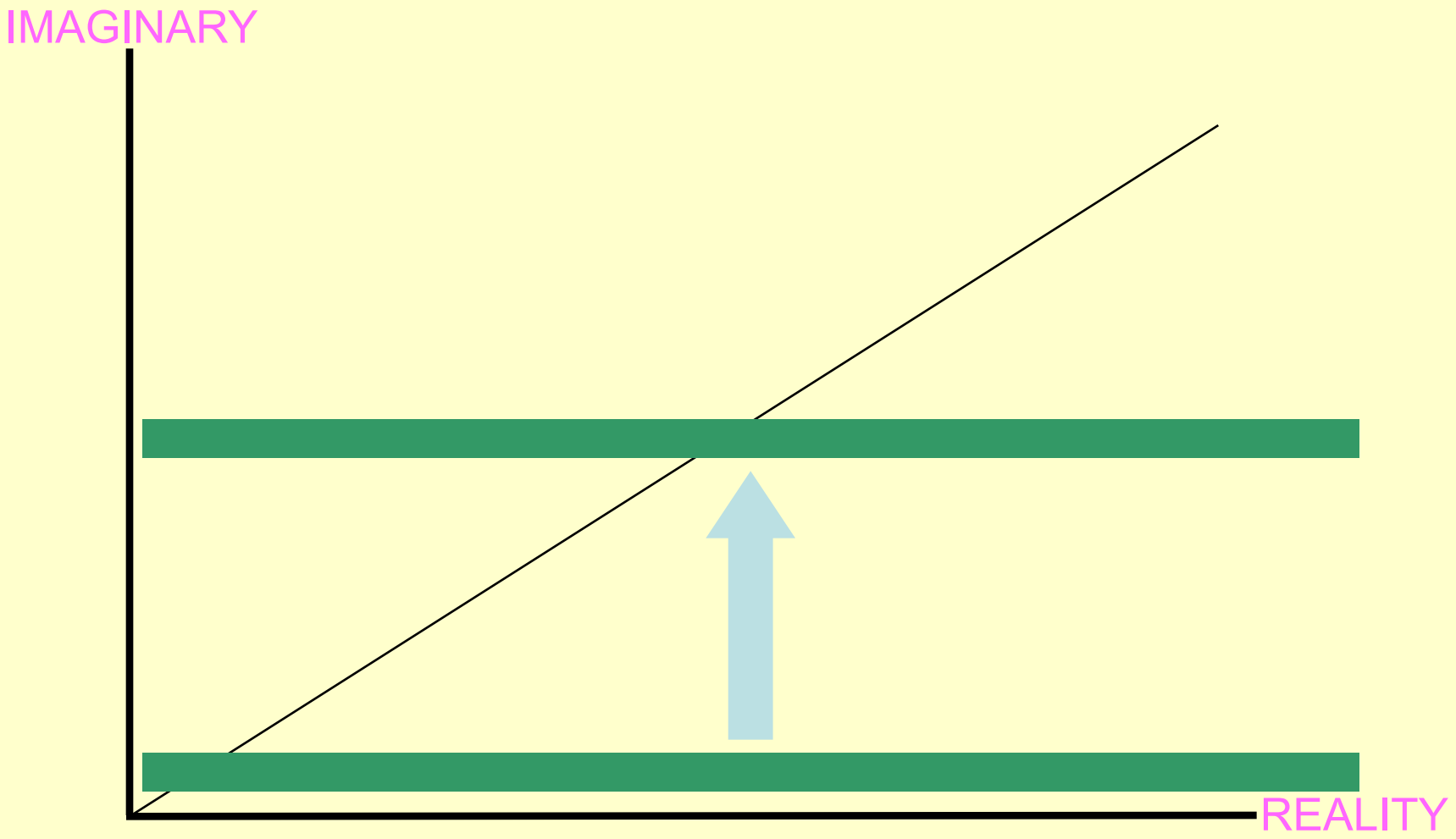
- **These techniques are** less quantitative than qualitative

- You have to go through a training phase which is longer and you need to rely on people that have already have a lot of practice.

- They imply that you have longer sessions, less improvised.

- You need to be demanding with your moderating ability to avoid losing yourself into the imaginary;

2) The techniques of analogies family



Techniques of analogies

- **Aim :**
  - You transfer the problem to another field of reference, nature for example (synectics). The « it's like… » principle

- **How to carry it out :**
  - **2 types of analogies :**
    - logical, rational analogies
    - intuitive, subjective analogies :
      - *Symbolic analogies, or metaphorical, parables*
      - *Graphical analogies, using the body.*
  - Softwares do exists, (« creative animals ») that facilitate group analogies.

Evaluation of the technique of analogies

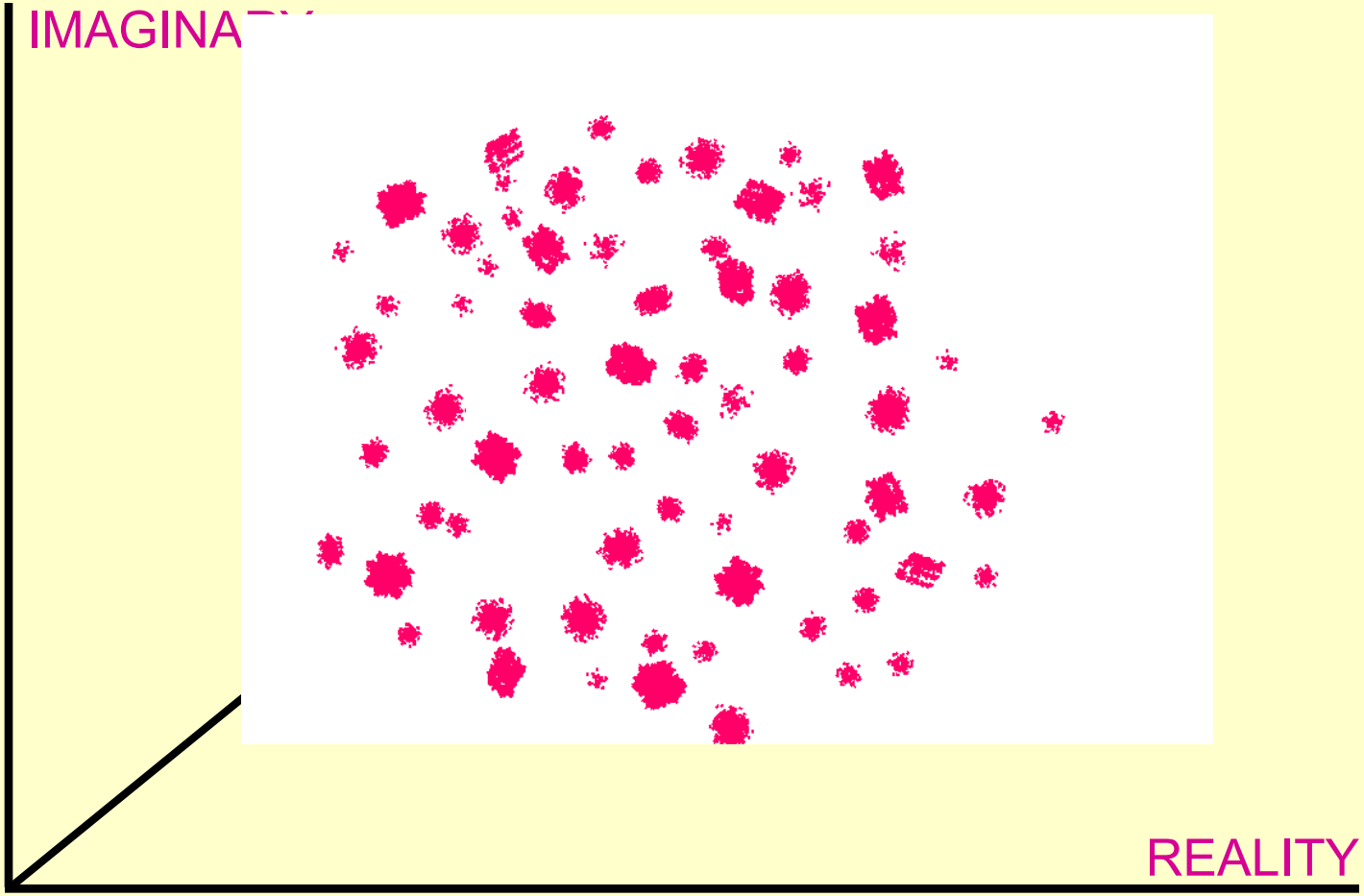
- **Strong points :**
  - It's one of the key methods of creativity
  - It let's you take a detour without risking losing yourself into the irrational.
  - It allows you to rely on a solid structure of reference, realistic, that works (in another field) .

- **Weak points :**
  - For analogies that are related to nature, you need to rely on scientists to get good results. (scientists that are open to creativity methods)
  - Or work with a multidisciplinary group where everyone comes with their own stock of analogies
  - For intuitive, symbolical analogies, you have to rely on a projective technique.

Brainstorming :

« Fire away intensively » at the target

It is in fact, a type of language that is common to all techniques



3) The brainstorming

- **The aim : 4 ground rules**

1) Suspend judgment, do not criticize *(no critics, no approvals, verbal or non verbal ones, positive support)*

2) The wildest form of imagination is welcome

(but not compulsory, no derision, commonalities and the unexpected)

3) Look for quantity

(machine gun stream, can help you make different piles)

4) Associate ideas on one another

(bounce back, steal ideas from each other, no solo, make a pack)

➢ How to do it :

- A small group
  (6 to 10, possibly more, possibly less)
- A long training is not necessary
- Short sessions
- Quantitative production of ideas

Evaluating brainstorming

- **Positive points :**
  - Handy, simple, well known, quick
  - In a lot of cases, and for certain problems: « it works »

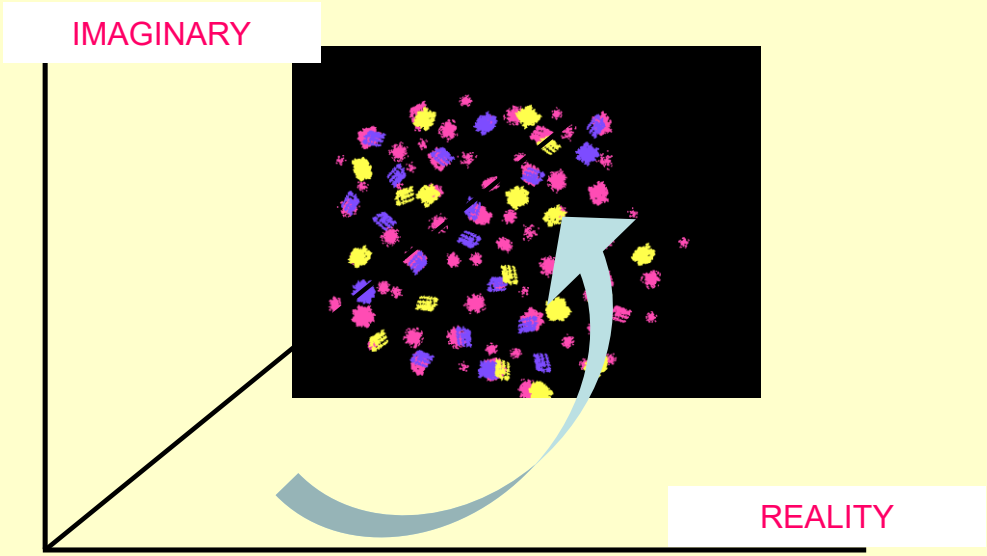
- **Negatives :**
  - Caricaturized , distorted, ridiculed
  - Does not apply (to all techniques)
  - Does not solve a « contradiction »
  - Produces ideas directly and does not break the detour down.

Which technique of detour can you choose from ?

TECHNIQUES	TYPES OF PROBLEMS	GROUP TYPES
Brainstorming	When you need a « 100 ideas for… ». More for marketing, advertising, social.	You don't necessarily need a trained group but you need a facilitator to have people respect rules.
Distortion & force-fitting techniques	Improving a product, improving simple functionalities, (reducing weight, cost reduction, new applications, etc…), innovation through transformation, and improvement	A group that has gone through a minimum of training, that is used to working together, a minimum time frame, (two half-day sessions or one day), a trained moderator; Familiar with an innovation process.

Which technique can you choose from?

TECHNIQUES	TYPES OF PROBLEMS	GROUP TYPES
Projective techniques, day-dreaming, using graphics	Creation of concepts, of a new product, break down innovation, from medium to long term, visioning, « unsolvable » problem	A group that has been well trained, that is used to working together, working on sessions that are spread out in time, with a moderator familiar with a research process.
Techniques using analogies	Can be used for all subjects, but especially adapted to technical problems, to solve a contradiction.	Are part of all creativity sessions but, for some of them, are well adapted to a group working on a long term basis in a small creative module, in collaboration with experts and a trained facilitator familiar with a research process.



Let's now talk about techniques,
that in order to find realistic ideas,
need to take a route,
which will gradually move away from logic,
without taking a detour into the irrational,
(hence without using a group's dynamic).

The rational discovery matrix

- You co-relate elements and functionalities for example, or needs and products, etc.

- And also at the intersection of lines where you find empty spaces.

« Lateral thinking » (De Bono)

- **A methodical process that breaks logic down by introducing « provocations »** by using random word input
- **Moving away from established codes** (the « po » code)
- **Rejection of creativity groups** and the use of the imaginary
- **Giving credit to individual creativity**
- **An educational method to generate creative attitudes thanks to the** «six thinking hats »method

In brief : a method that can be used in a professional context, sitting around a table, without taking your tie off, which makes it a very popular method.

Ideas collection techniques («participative innovation »)

- **Sources :**
  - The Kaizen method(japanese method used to collect suggestions)
  - Think tanks
  - the« idea tool box » « historical »
  - The intranet

Idea collecting is an organised process

- Generating ideas is :
  - encouraged, formalized, taped, estimated, given an added value, distributed.
- You have someone moderate the process (moderators, events, trophy awards, etc.…)
- Idea collecting is centralized (special service) or very decentralized.
- The intranet, main tool : tracks, compiles, issues the information
  - In connection with idea portals (forums, training, etc.…)
- Most often a « push-pull » process (spontaneous ideas and calling for ideas).

Examples

- **SNCF (french railroad network) :** national network of moderators and experts to evaluate problems.
- **Accor :** 30 000 contributors; 16 000 ideas; 5 500 missions carried out
- **Société générale** : 12 internal facilitators, innovation trophies
- **Alsthom :** 400 ideas; 80 outlines, 40 projects carried out
- **Norsys** (PME) : 400 coherent ideas; 20 undertakings

- Other examples : **Renault; Snecma, La Poste, Décathlon, La Redoute, France Telecom, Hutchinson, Thomson ;** etc…

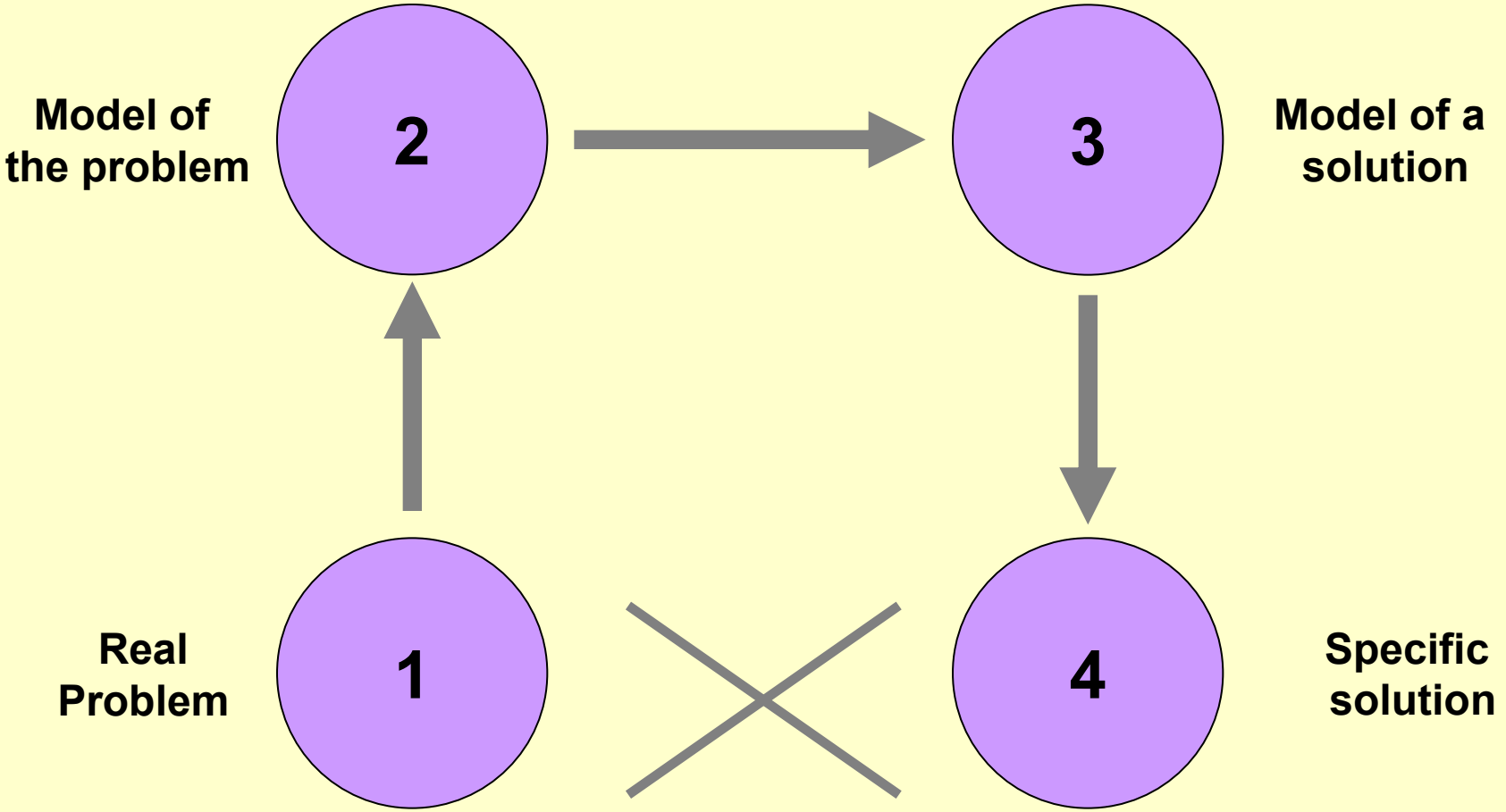
The Triz theory

- Is based on the analysis of the mechanisms of invention.
- Notices that inventors have relatively similar patterns of thinking : the 40 principles

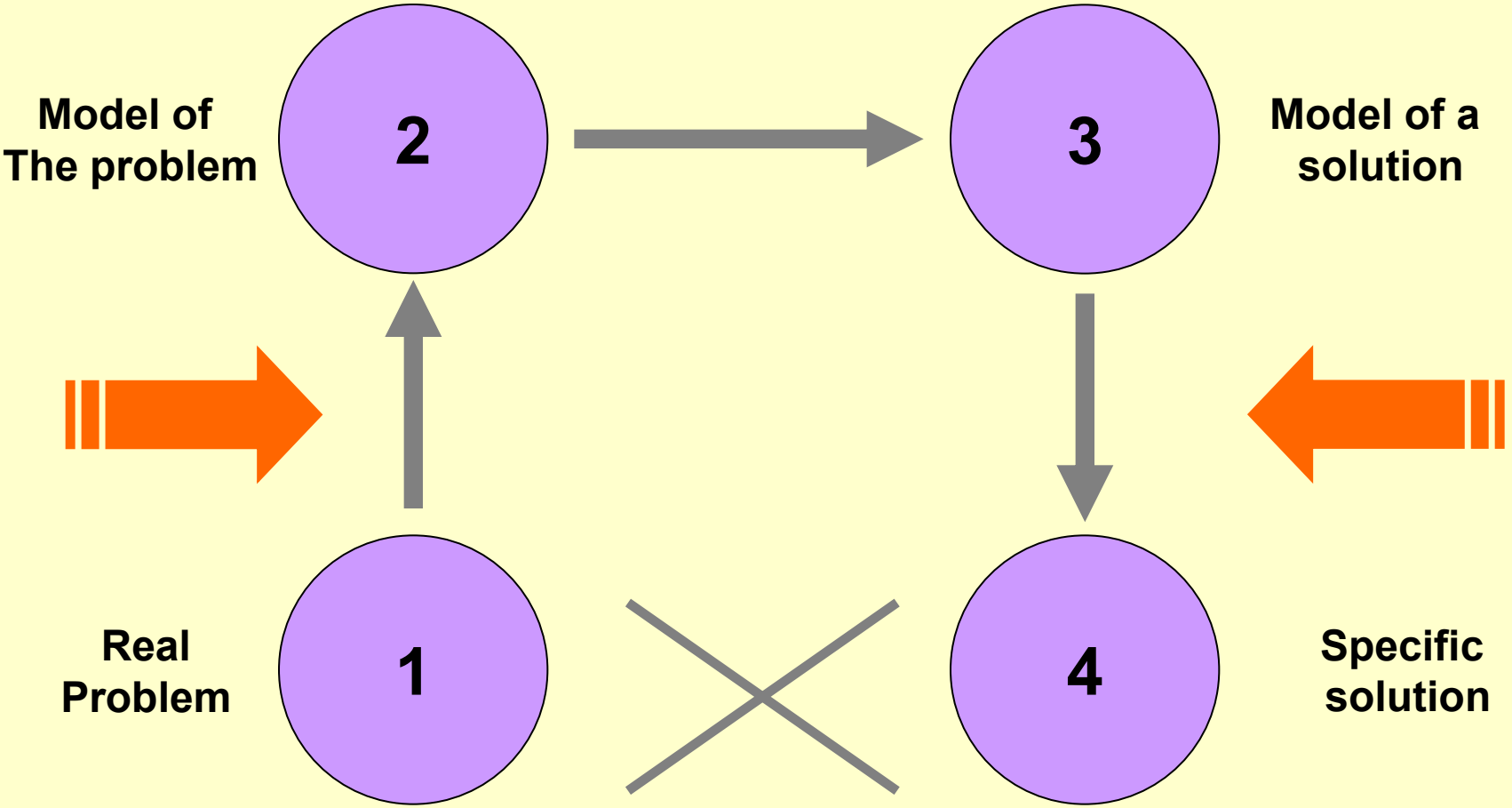
- Grounding :
  - The contradiction principle: no compromising
  - Ideality , seek ideal solutions: no small improvements

- Based on :
  - Analysis of functions
  - Economy of resources

The Triz method



Le link between Triz and creativity techniques



The link between Triz and creativity techniques

- **A) Between stage 1 and stage 2,**
  - To conceptualize the problem, to take time to reconsider it , training Triz teams to creativity techniques could be useful.

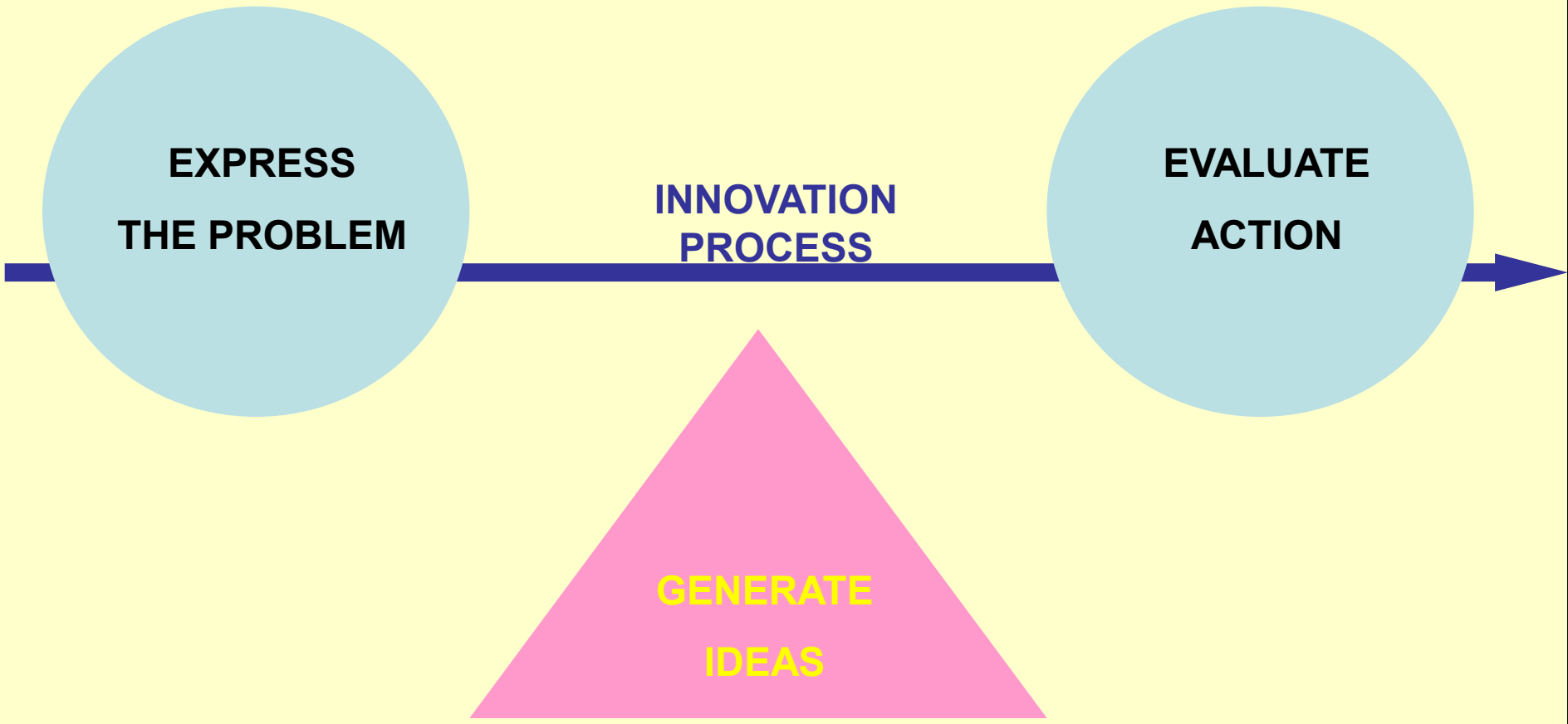
- **B) Between stage 3 and stage 4,**
  - To go from « a solution model » to a specific solution : it's a typical creative process (close to the process of « crossing »). The idea is not only to « brainstorm around things » but to use a battery of creative tools in a group.

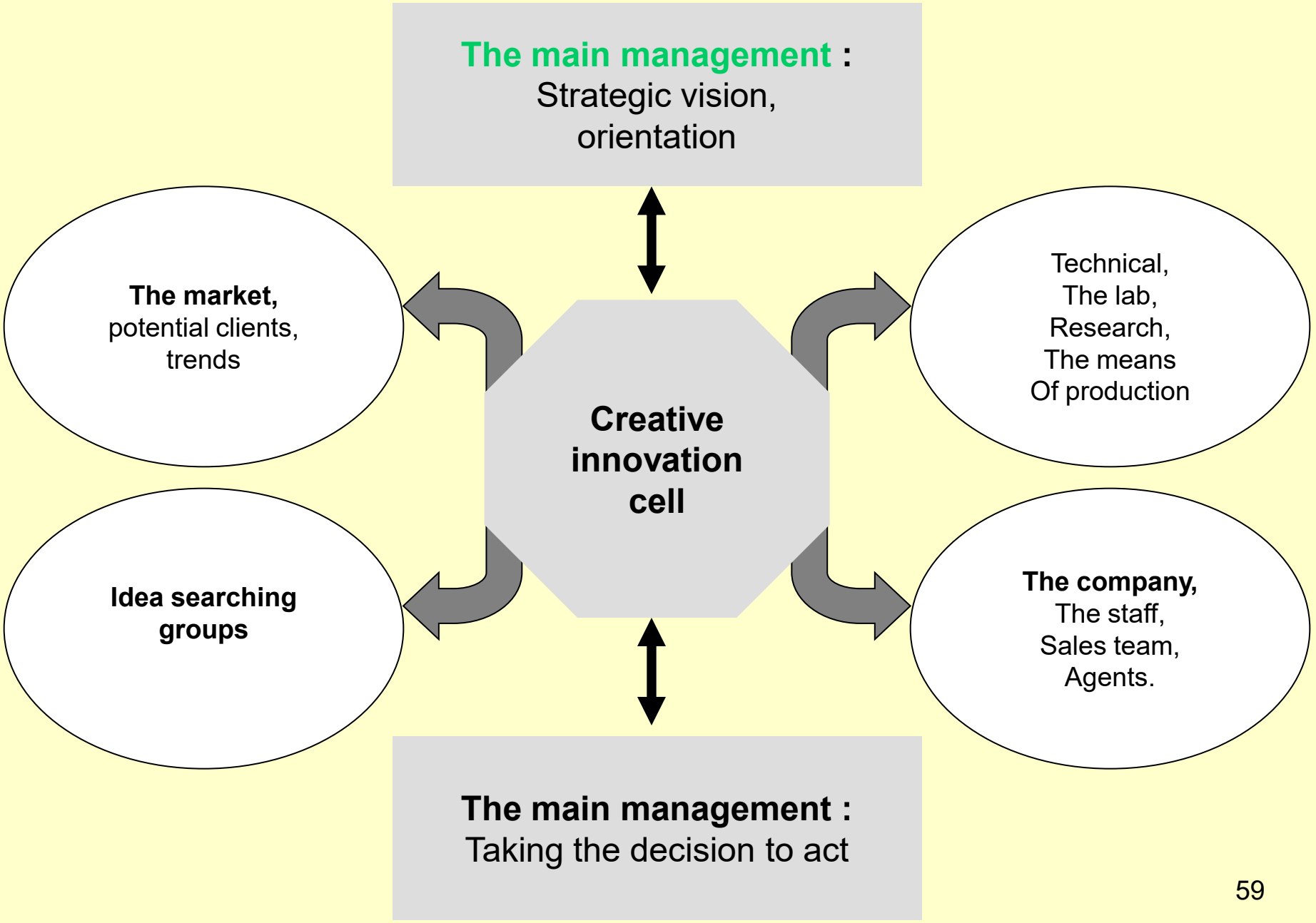
In brief :

- Triz and creativity techniques :

  Two approaches that you can « pair up » to « knit » a global invention process.

Idea generation is only a phase
inside an innovation process.




The main management :
Strategic vision,
orientation
The market,
potential clients,
trends
Technical,
The lab,
Research,
The means
Of production
Creative
innovation
cell
Idea searching
groups
The company,
The staff,
Sales team,
Agents.
The main management :
Taking the decision to act