

DESIGN THINKING

PART ONE

THINKING OUT OF THE BOX

跳出盒子思考

Years ago, a truck got stuck under a low bridge: it couldn't move back or forth and it was creating huge problems to traffic.

一年前，一辆卡车卡在了桥下，不能前进不能后退，堵住了路。



Firemen,
policemen, truck
drivers and
engineers started
debating to find a
solution to the
problem. 消防员，
警察，工程师开始
争辩该怎样解决这
个问题。



The Firemen looked inside the **firemen tool-box** and decided the solution was to cut away the top of the truck with the saw.

消防员看了看自己的工具箱，决定用电锯割掉车卡住的部分。



The Policemen
looked inside
their **police**
manual and their
solution was to
tow away the
truck. 警察看了他
们的工作手册，决
定用拖车来拖。



The other Truck Drivers looked inside their **cab** and they said the solution was to pull the truck with a bigger truck.其他的卡车司机看了看自己的驾驶室，觉得解决方法是用更大的卡车来拖。



The Engineers had no doubts: the solution they found in their **field-book** was to disassemble the bridge. 工程师看了看他们的“工程作业手册”觉得解决方法是拆掉桥。



FIND A SOLUTION

Think about a solution and share it with the class:
what would you do in this situation?

考慮一个解决方案
并与全班分享：在这种情况下您会怎么做？



After some time, a boy on a bicycle that was passing by, stopped in front of the truck. He looked at the truck, than at the bridge, than at the truck again and finally said...过了
一段时间，一个路过的骑自行车的男孩，看了看卡车和桥，说

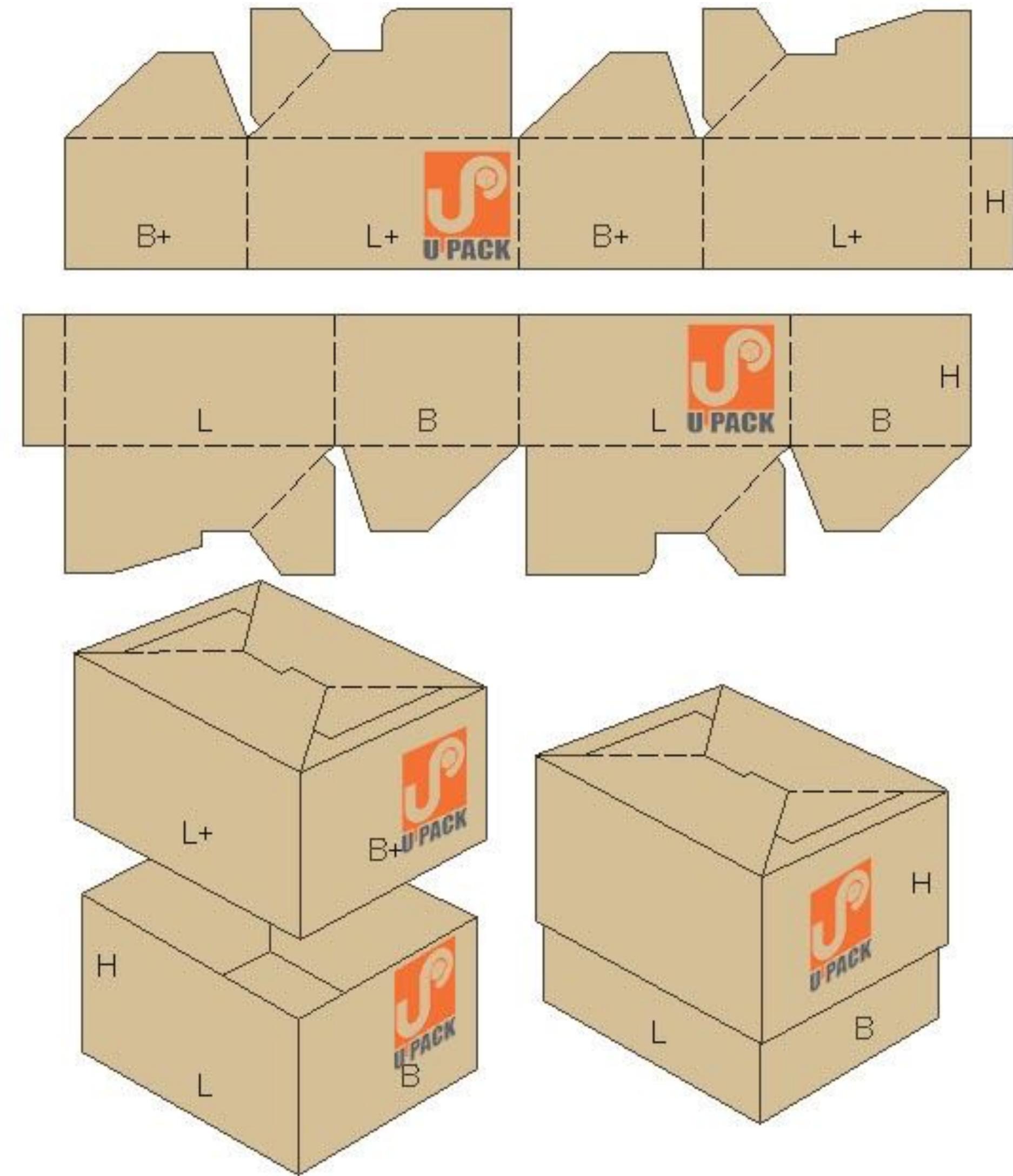


He didn't have a profession that taught him how to do things in a specific way. He found a solution by **NOT** looking into a box (or book or manual...)他并没有什么专业知识，但是他在思考解决办法的时候也并没有参考“书”“工作手册”等



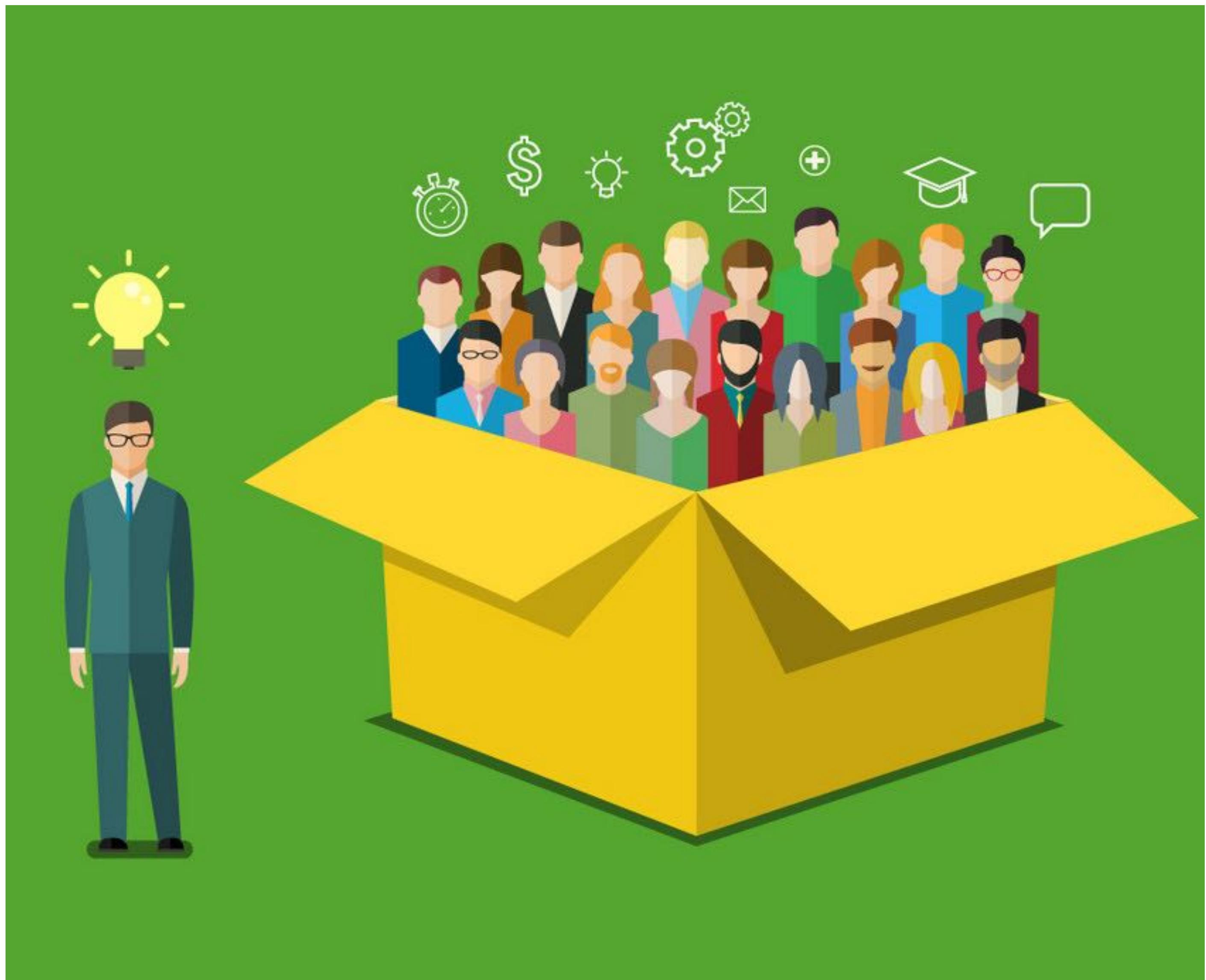
Design Thinking is not only about thinking outside of the box, **but on its edge, its corner, its flap, and under its bar code**

设计思维不是关于跳出盒子思考，而是在盒子边缘，盒子的角落，盒子条形码下思考（思考一切可能性）。



THINKING OUTSIDE OF THE BOX

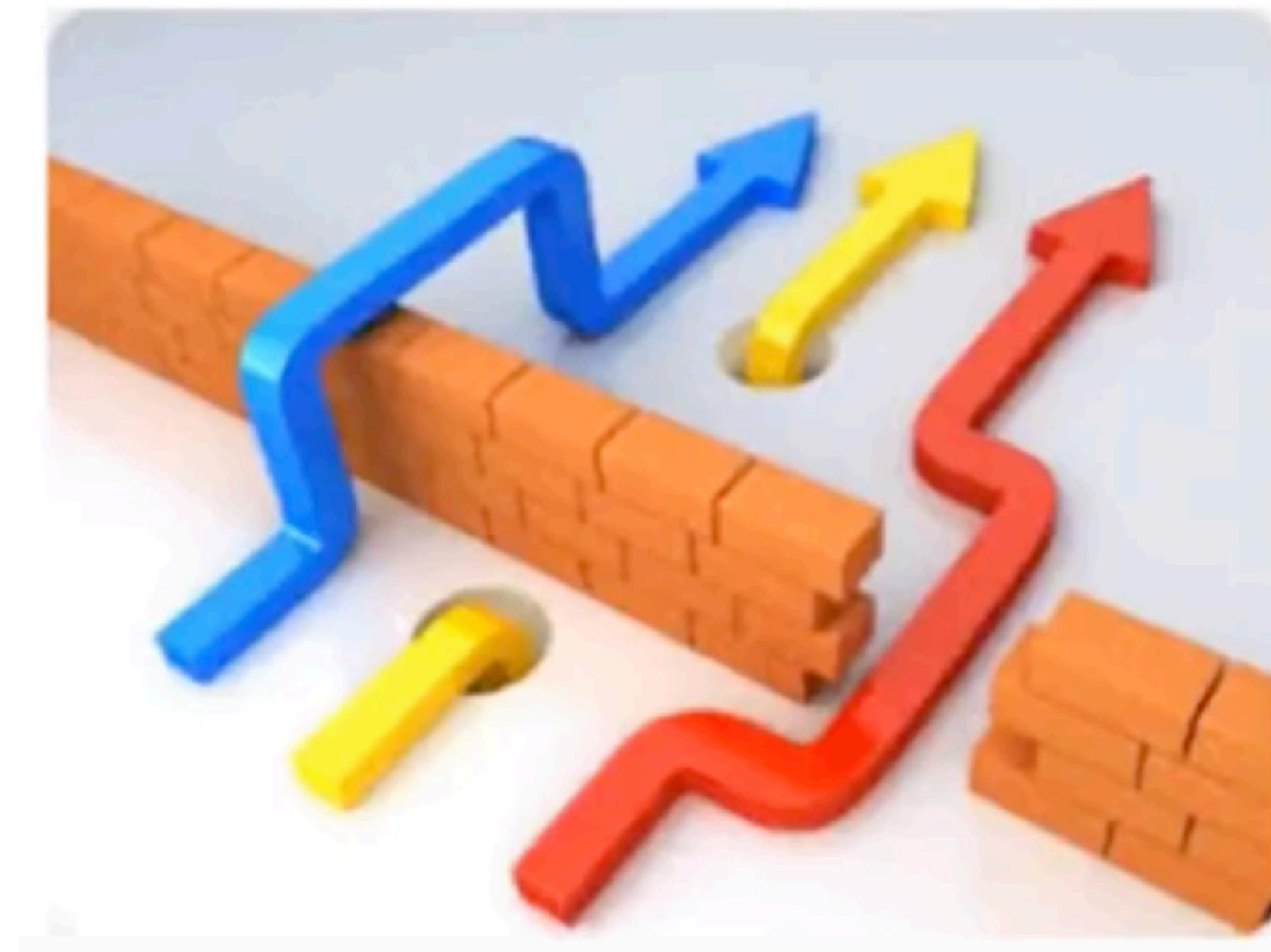
It means to look at the world from a perspective we are not used to, trying to put ourselves in someone else's shoes.





Design Thinking is a **problem-solving process** (解决问题的流程) in which we try to understand the users and challenge our initial assumptions by redefining problems.

The goal is to identify **alternative** (可供选择的) solutions that might not be instantly apparent with our initial level of understanding.



PROBLEM SOLVING

- 1 - Formulate a problem
- 2 - Think creatively about solutions
- 3 - Express one solution in a clear way

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DESIGN THINKING



How did it started?

David Kelly is the founder of a design firm called IDEO and the founder of the Design School in Stanford University.

DESIGN THINKING IS A 5 STEPS PROCESS

The five phases of the design process:



I have a challenge.

How do I approach it?

I learned something.

How do I interpret it?

I see an opportunity.

What do I create?

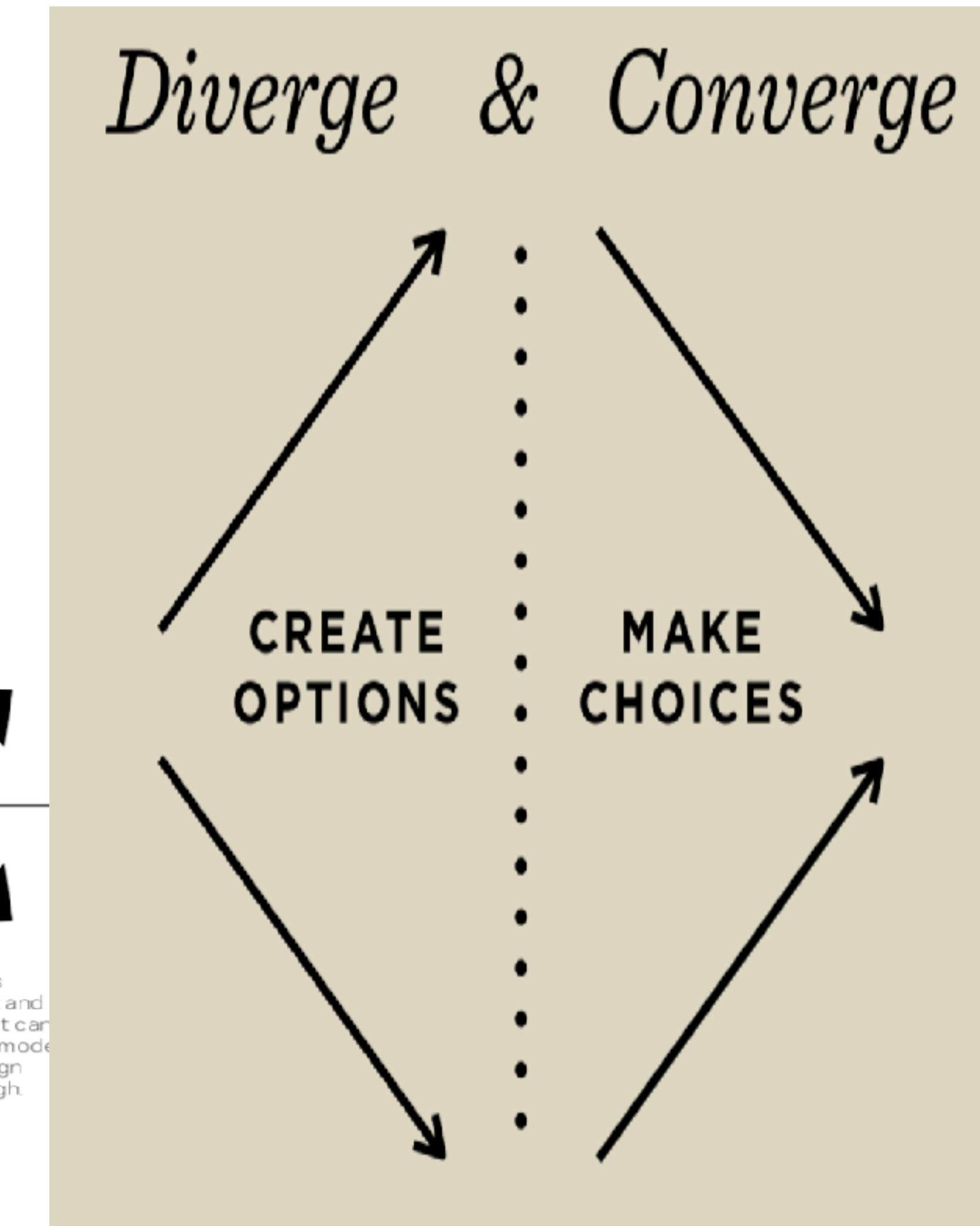
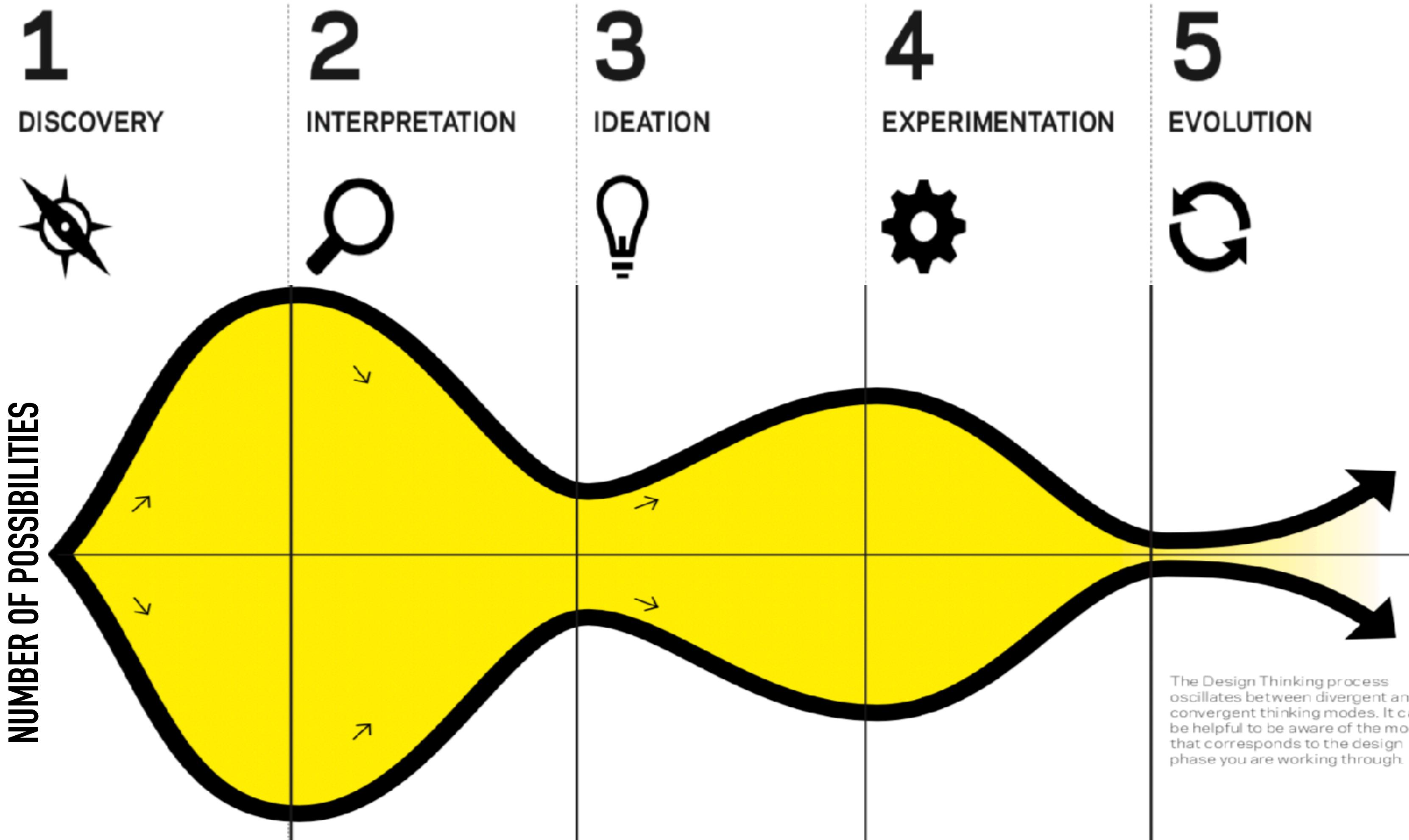
I have an idea.

How do I build it?

I tried something.

How do I evolve it?

DIVERGENT AND CONVERGENT THINKING MODES



Design Thinking is just a fancy name for ***"a step-by-step procedure you can use to find innovative solutions"***.

It is **not magic**, you have to learn the right procedures, follow the steps, and **work hard!**

STEP 1: DESIGN CHALLENGE DISCOVERY

1

DISCOVERY



**I have a
challenge.**

*How do I
approach it?*

The first step of the Design Thinking approach to problem-solving is probably the most important: you have to **understand the problem** (*design challenge*).

In this phase you research about the problem and you **ask other people for help.**

DESIGN CHALLENGE: LIFE IN THE TIME OF AN EPIDEMIC

设计挑战： 疫情时期的生活

LIFE IN THE TIME OF AN EPIDEMIC

疫情时期的生活

This design challenge is about a topic that is affecting ourselves, and the people we know. Each one of us has something interesting to share.

Did we stay at home or need to go out?

What happens to us when staying home for a long time?

What happens to us when we need to go out?

What things you wish could be better?

What happens to the people around us?

What things you don't like about this?

LIFE IN THE TIME OF AN EPIDEMIC

疫情时期的生活

During the Covid-19 outbreak, people around the world are facing new **PROBLEMS** and they are quickly finding new **SOLUTIONS**

LIFE IN THE TIME OF AN EPIDEMIC

疫情时期的生活





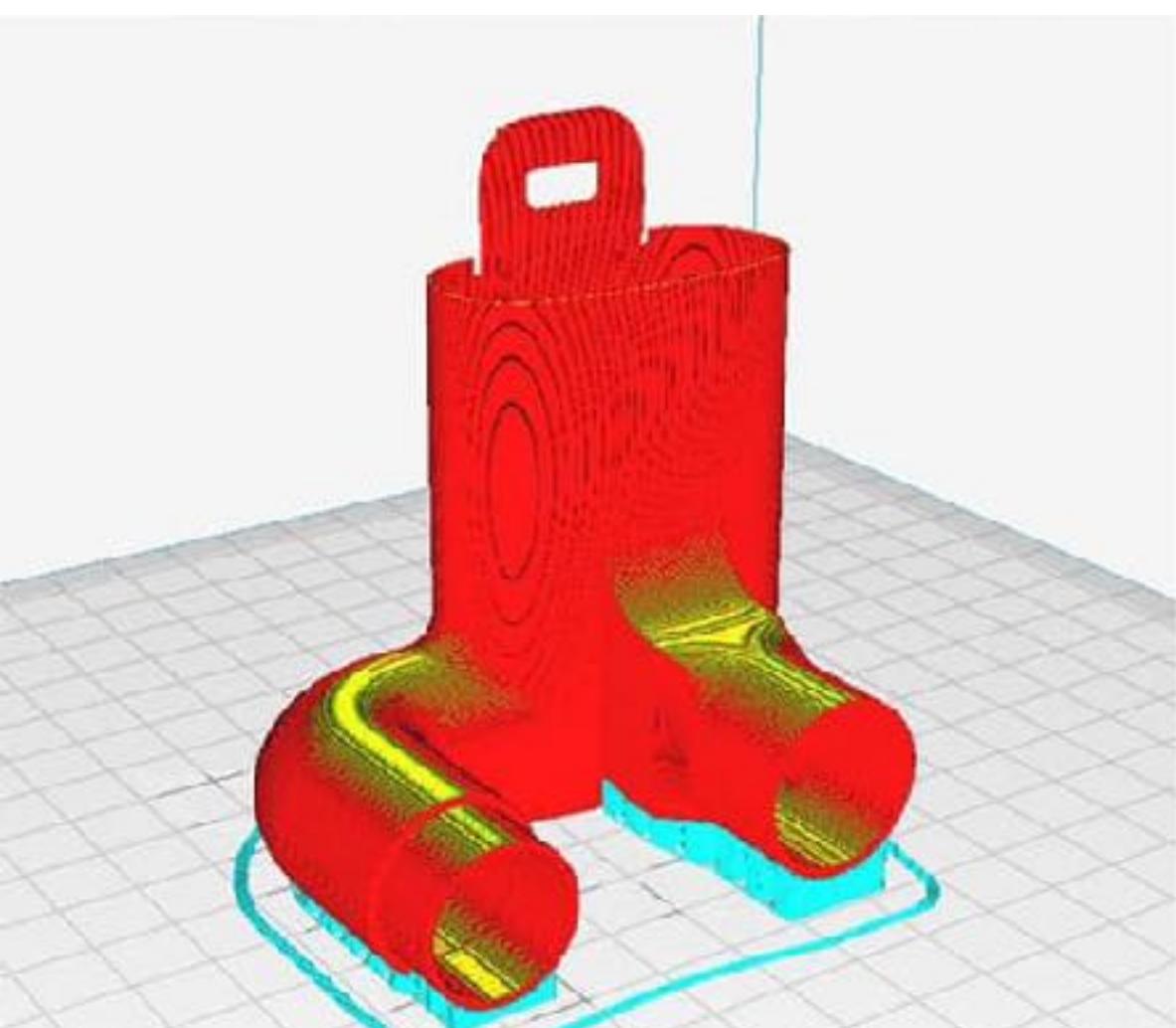
*some less smart
ideas...*



LIFE IN THE TIME OF AN EPIDEMIC

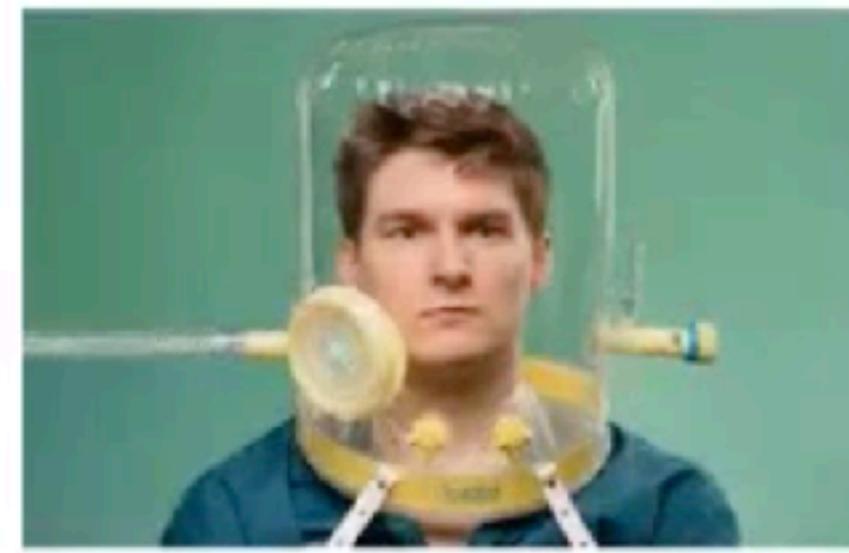
疫情时期的生活

3D Printed
Respirator Valves,
Medical equipment,
DIY ventilators



MIT RESEARCH ON RESPIRATORS

						
\$699.00 ResMed AirMini + Free CPAP.com 	\$135.00 Fisher & Paykel Simplus Full The CPAP Shop 	\$69.00 ComfortGel Blue Full Face CPAPXchange 	\$679.00 AirMini Ultimate CPAP Lofta 	\$99.00 Mirage Quattro Full Face CPAP DirectHomeM... 	\$75.00 TAP PAP Nasal Pillow CPAP The CPAP Shop 	\$119.00 Resme Quattro The CPAP Shop 



StarMed CaStar hood for CPAP...
intersurgical.com



StarMed CaStar Infant hood f...
intersurgical.com



ventilation is superi...
uchicaqomedicine.org



Helmet CPAP to Reduce Int...
commons.pacificu.edu



Helmet-delivered heliox-C...
semanticscholar.org



Noninvasive Mech...
rc.rcjournal.com



hoods for CPAP t...
qtlonline.in



StarMed CaStar Up...
intersurgical.com



prototype (StarMed,...
researchgate.net



LIFE IN THE TIME OF AN EPIDEMIC

疫情时期的生活



<https://www.youtube.com/watch?v=G8T0LkjjjSM>

HOW TO "FIND PROBLEMS"?

Finding opportunities for design begins by noticing “problems” around us.

EXERCISE: FIND PROBLEMS - LIFE AT THE TIME OF AN EPIDEMIC

Let's share some ideas with the class.

3 DREAMS

Something you want but don't have:

"I really wish my school had..."

"I would be great if in the subway there was..."

"I would love if I could use..."

3 COMPLAINTS

Something you have but you don't want:

"It annoys me that we're not..."

"I hate when ...this thing... happens"

SKILLS MARKET

What can you do? What are you good at?
Try to "sell yourself" by describing your
skills and interests.

GROUPS FORMATION

ASSIGNMENT

Make a list of DREAMS and COMPLAINTS
of the people in your group.

After, make another list of DREAMS and
COMPLAINTS asking to your other
students in this campus.

Make it as a readme.md in a repository on
Github (or a similar platform) and provide
the link by next week.