

# What to trust in a network map?

## Cognition, patterns, and anti-patterns

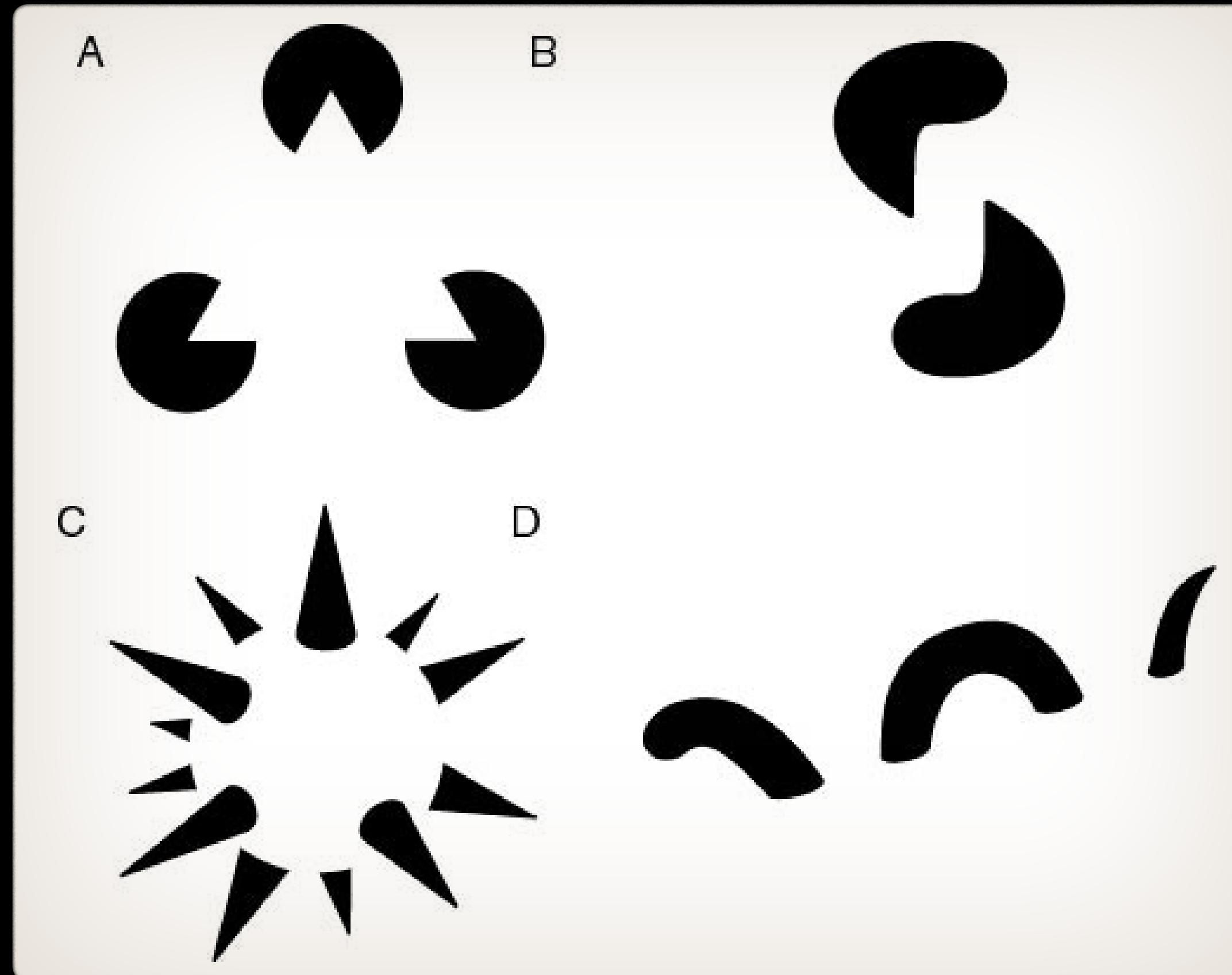
Mathieu Jacomy  
Aalborg University TANTLab

I.

Visual cognition

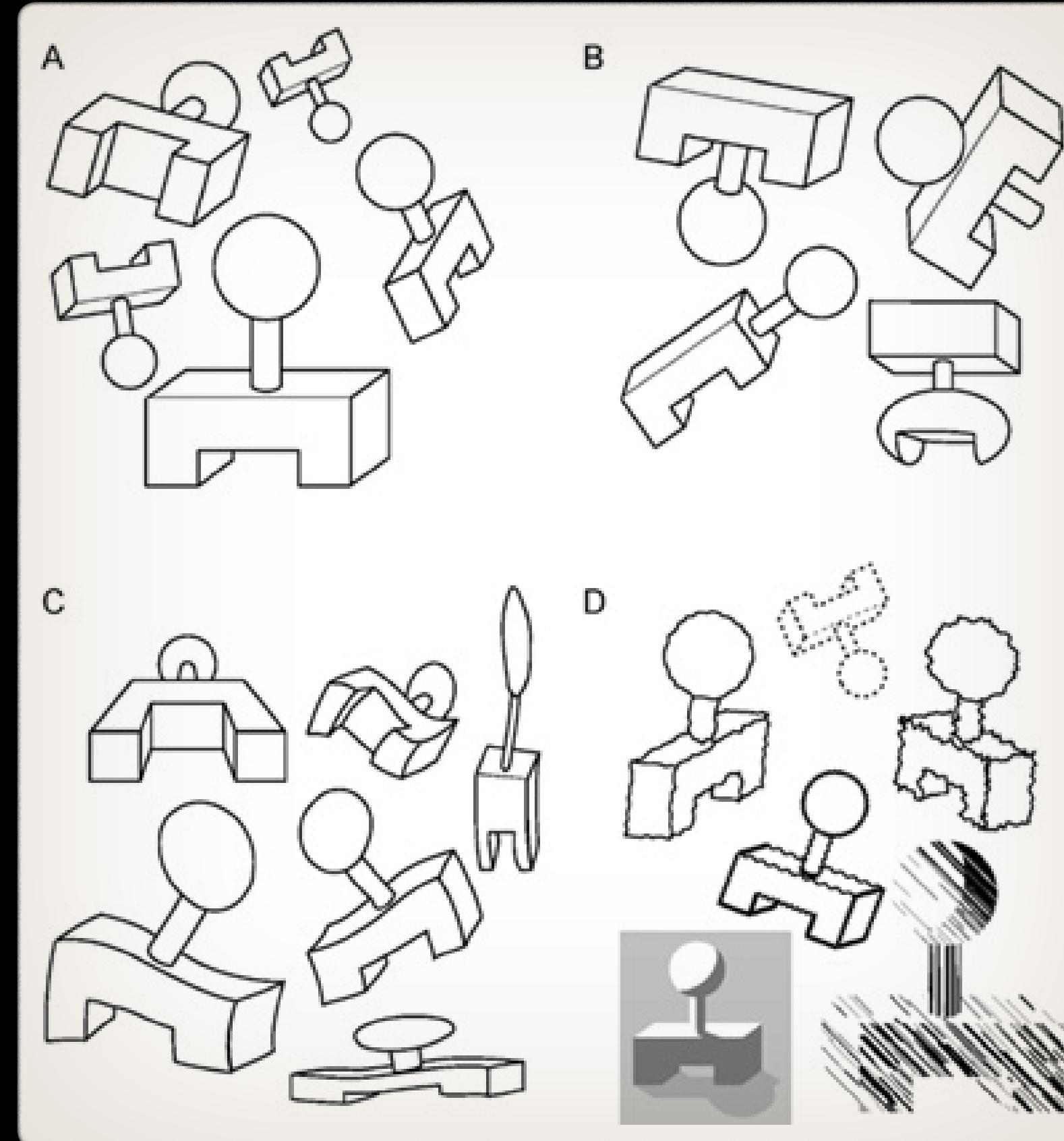
# Visual cognition

## Gestalt psychology



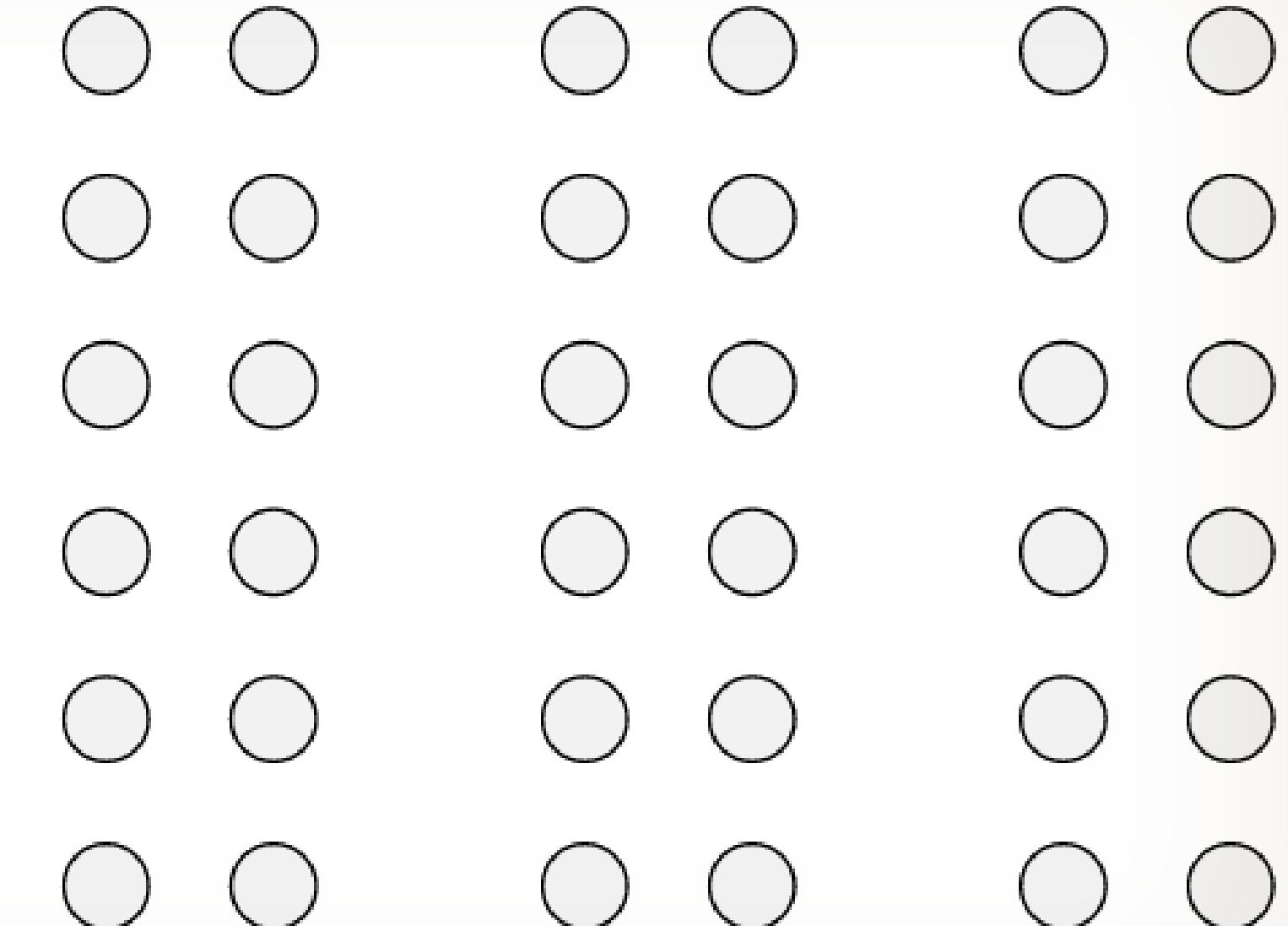
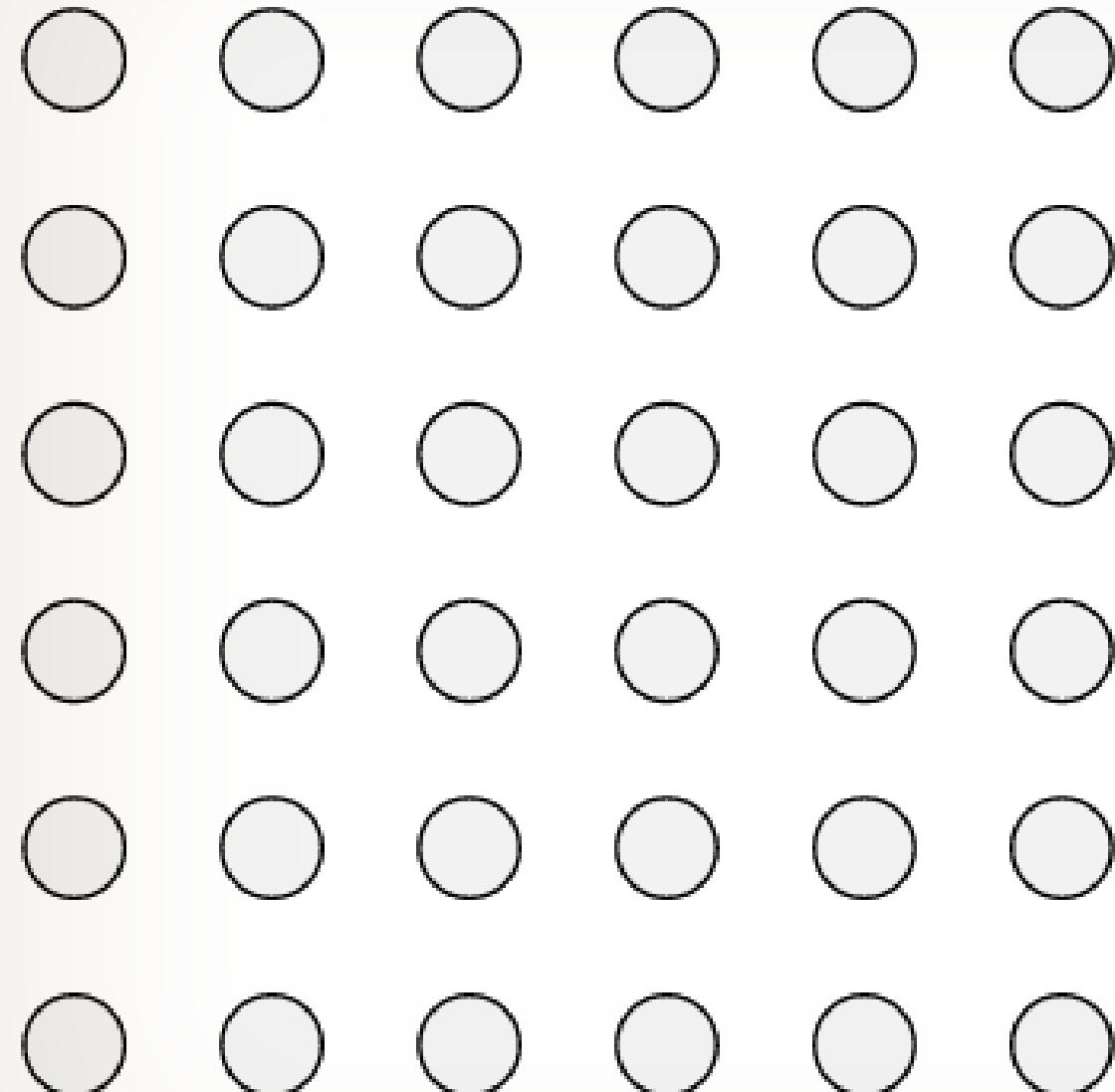
# Visual cognition

## Gestalt psychology



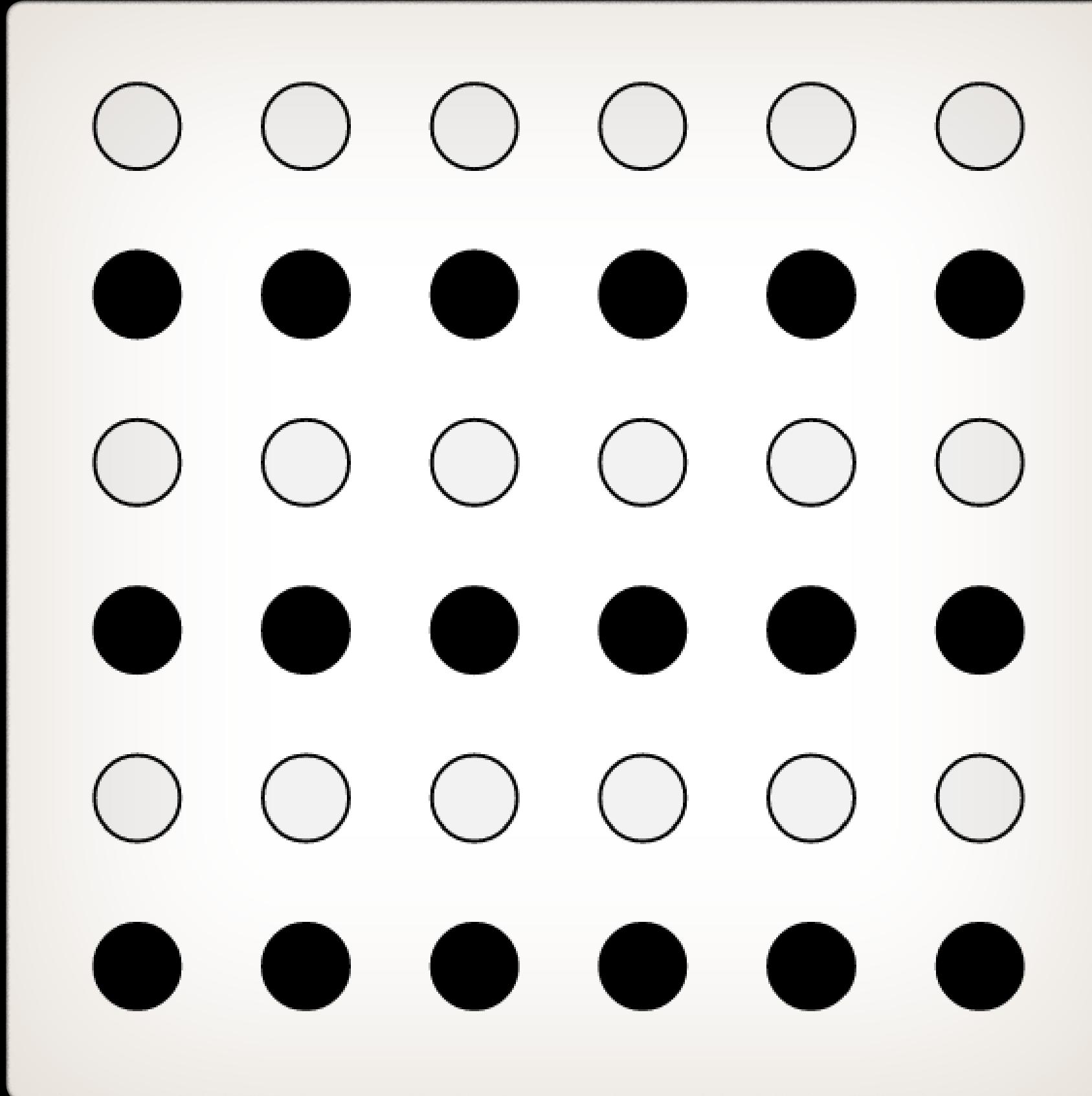
# Visual cognition

## Gestalt psychology



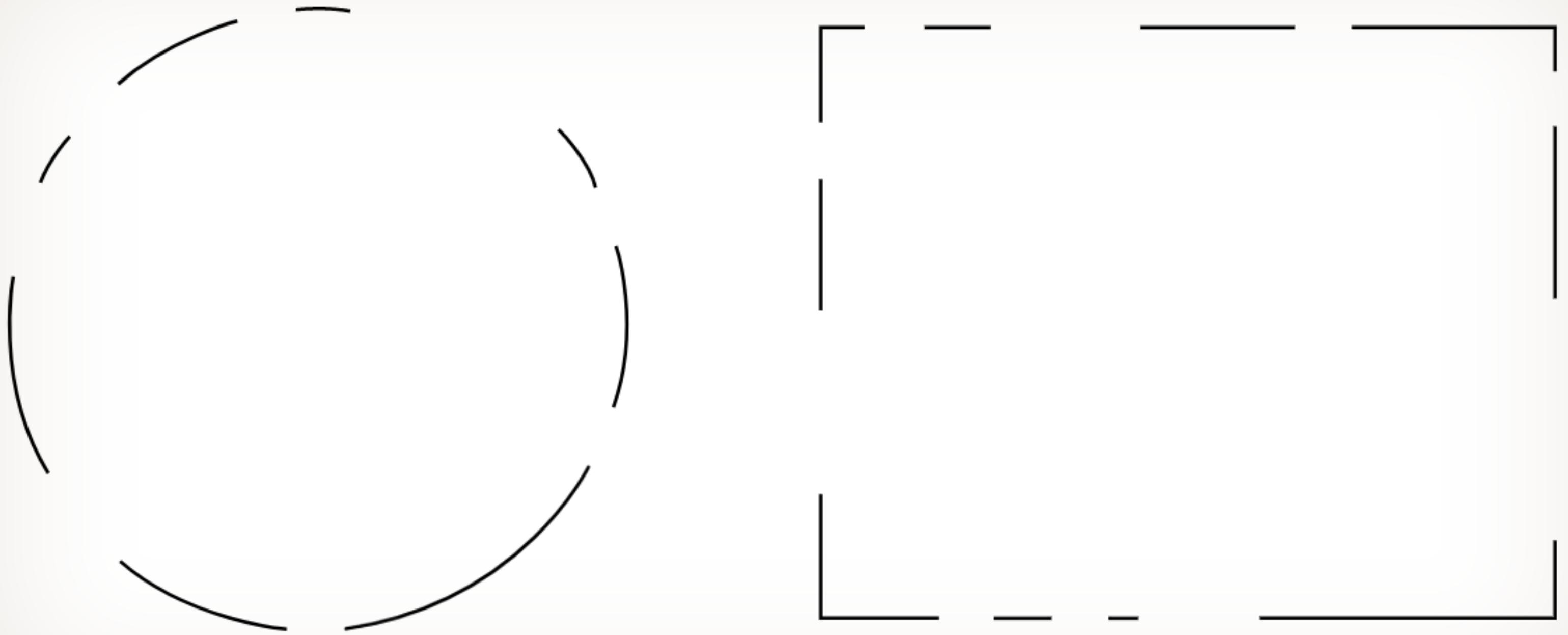
# Visual cognition

## Gestalt psychology



# Visual cognition

## Gestalt psychology



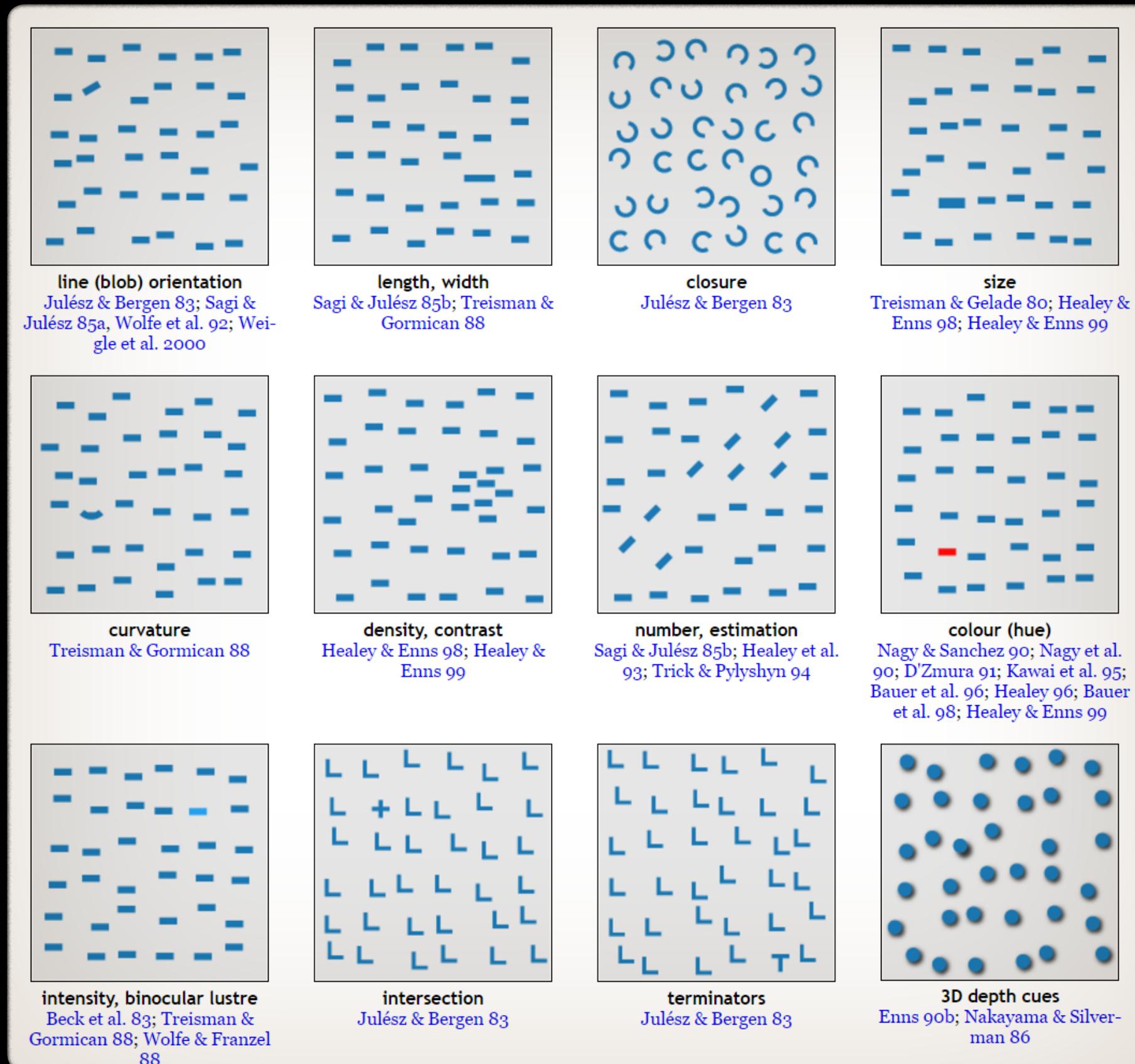
# Visual cognition

## Gestalt psychology

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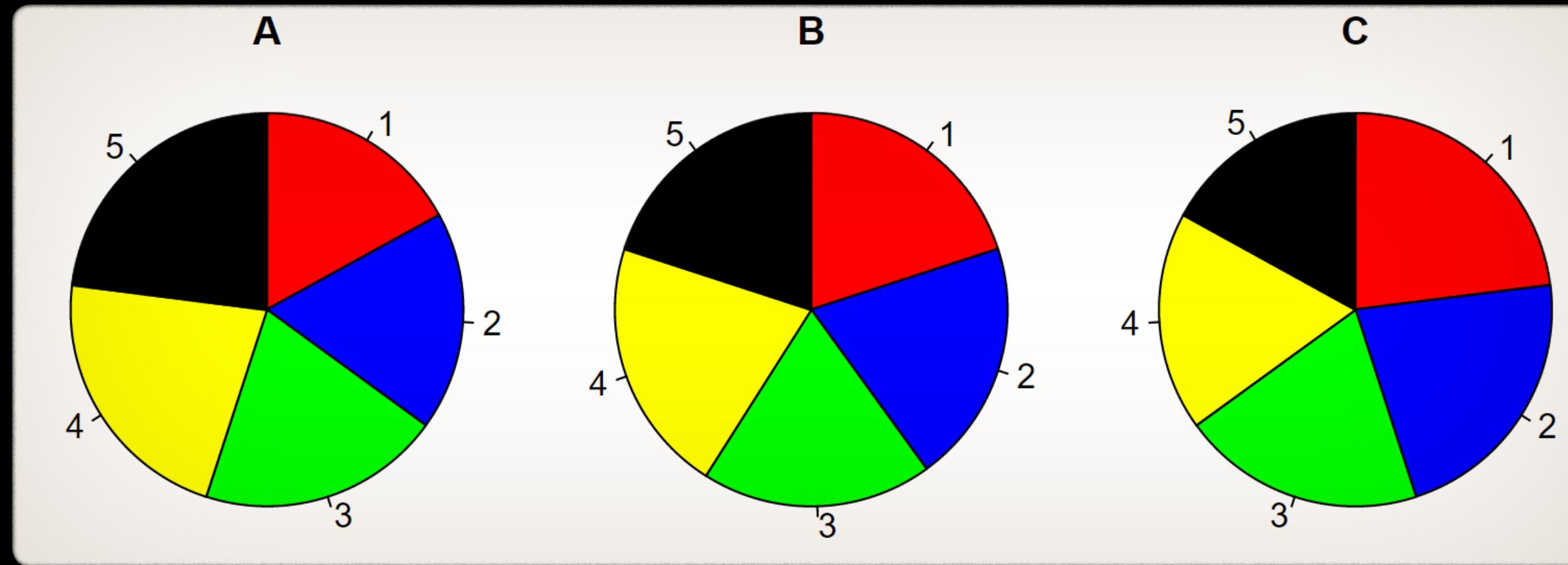
# Visual cognition

## Preattentive features



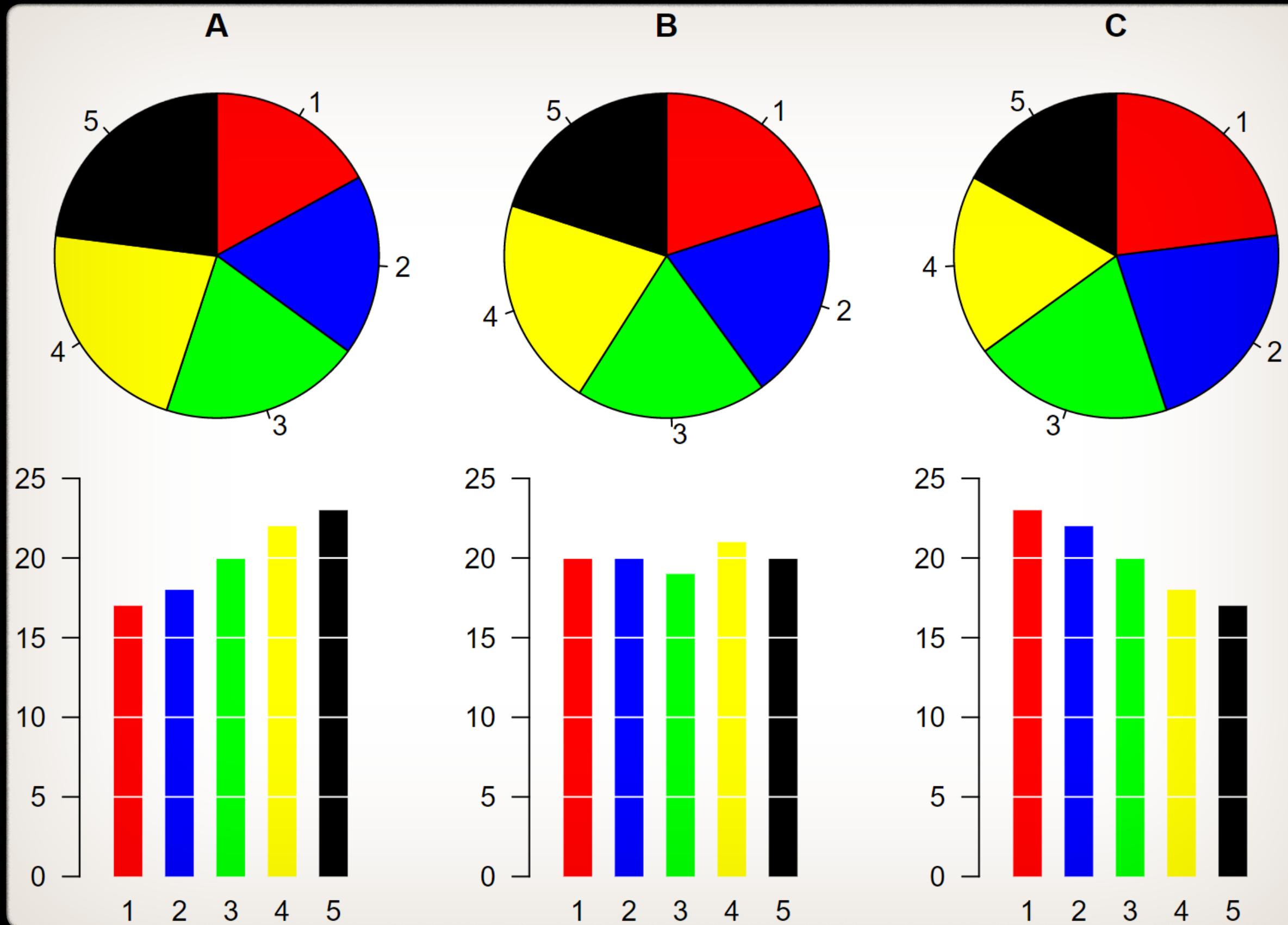
# Visual cognition

## Biases in classic charts



# Visual cognition

## Biases in classic charts

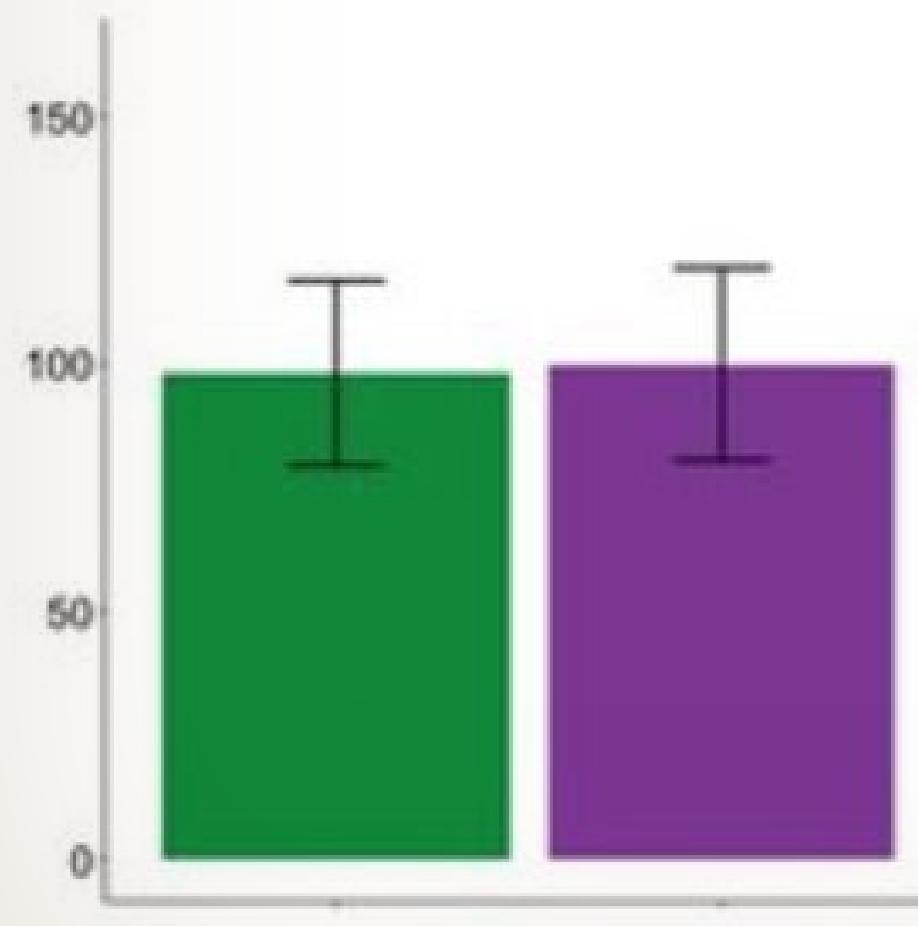


# Visual cognition

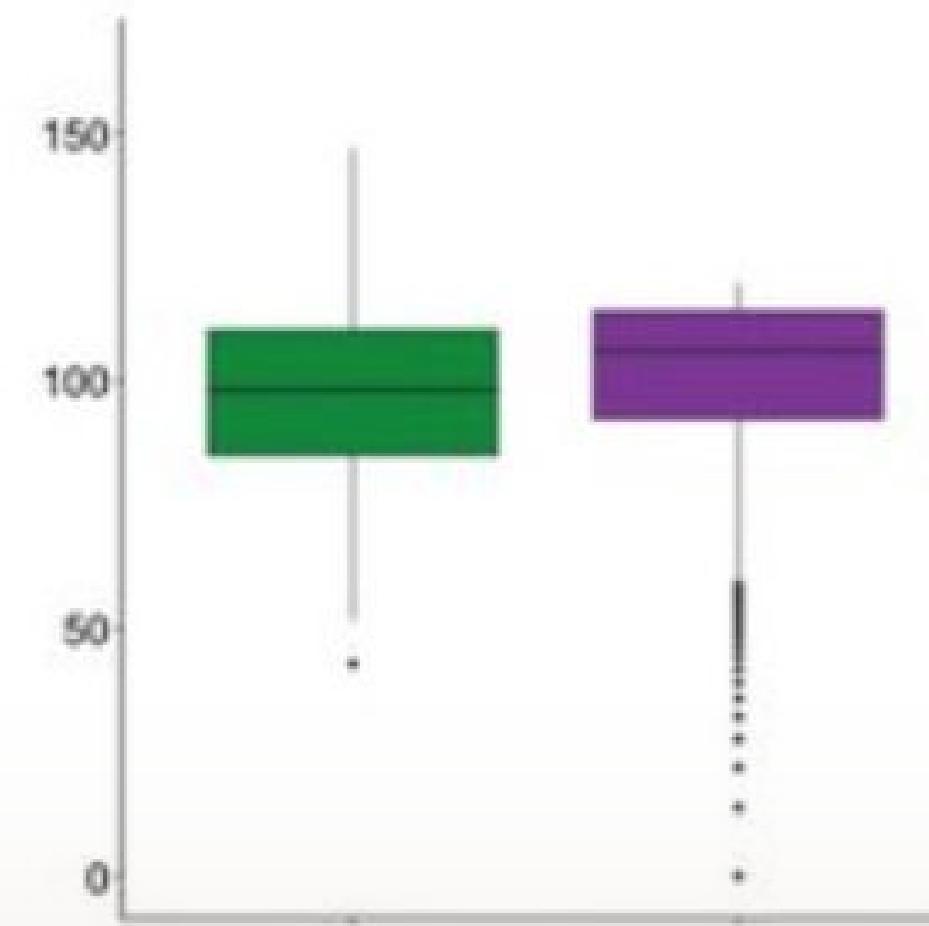
## Biases in scientific charts

**Friends don't let friends make bar plots.**

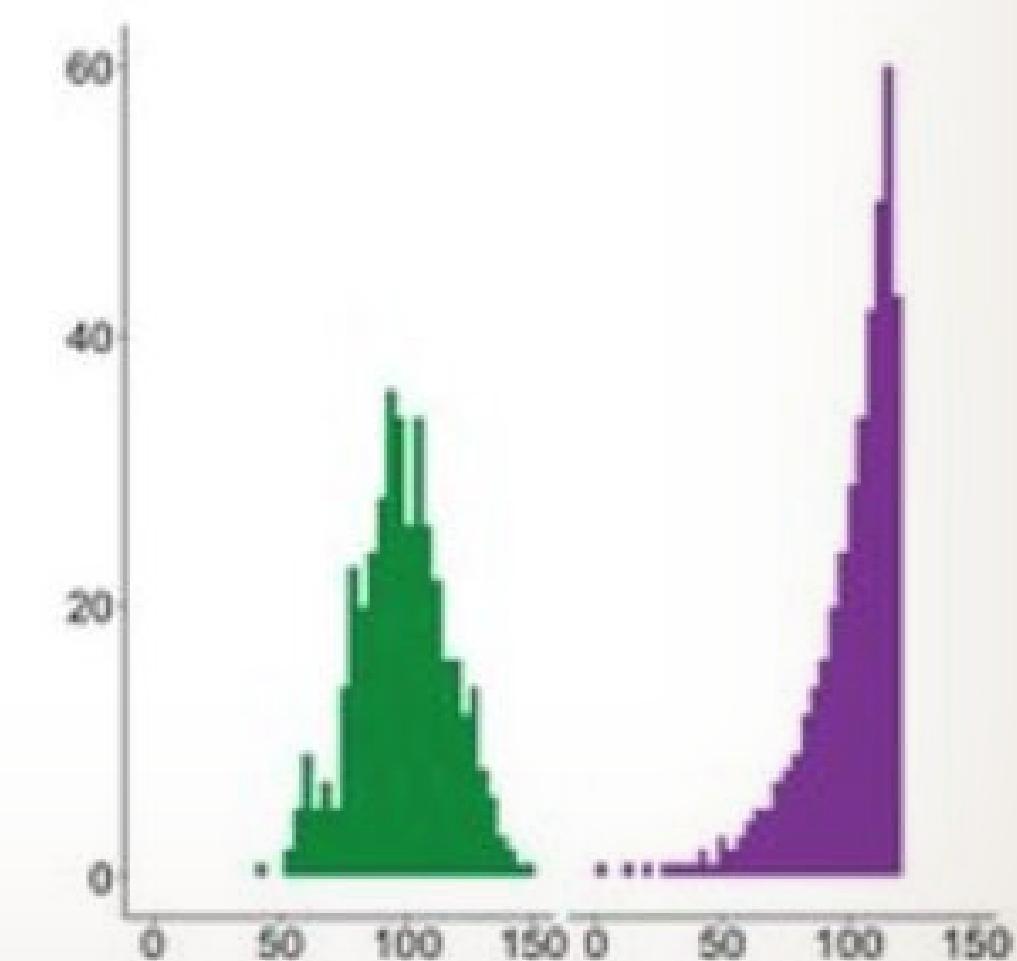
These look the same!



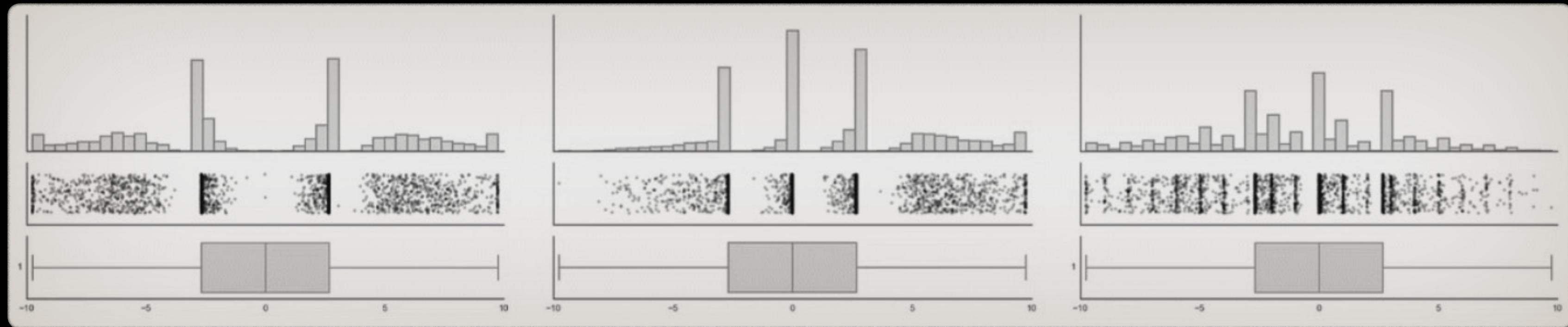
Wait a minute...



Oooh!

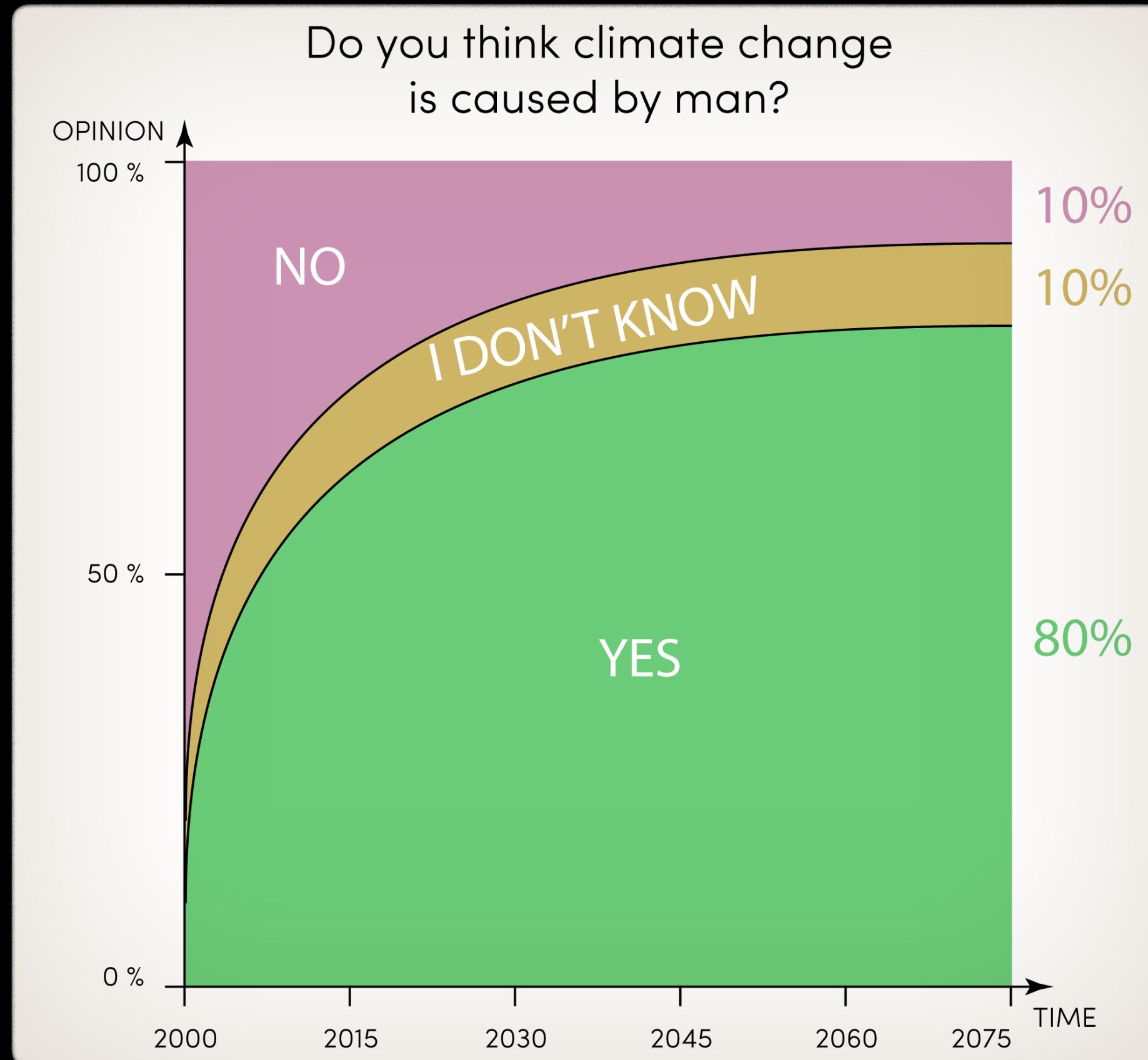


# Visual cognition Biases in scientific charts



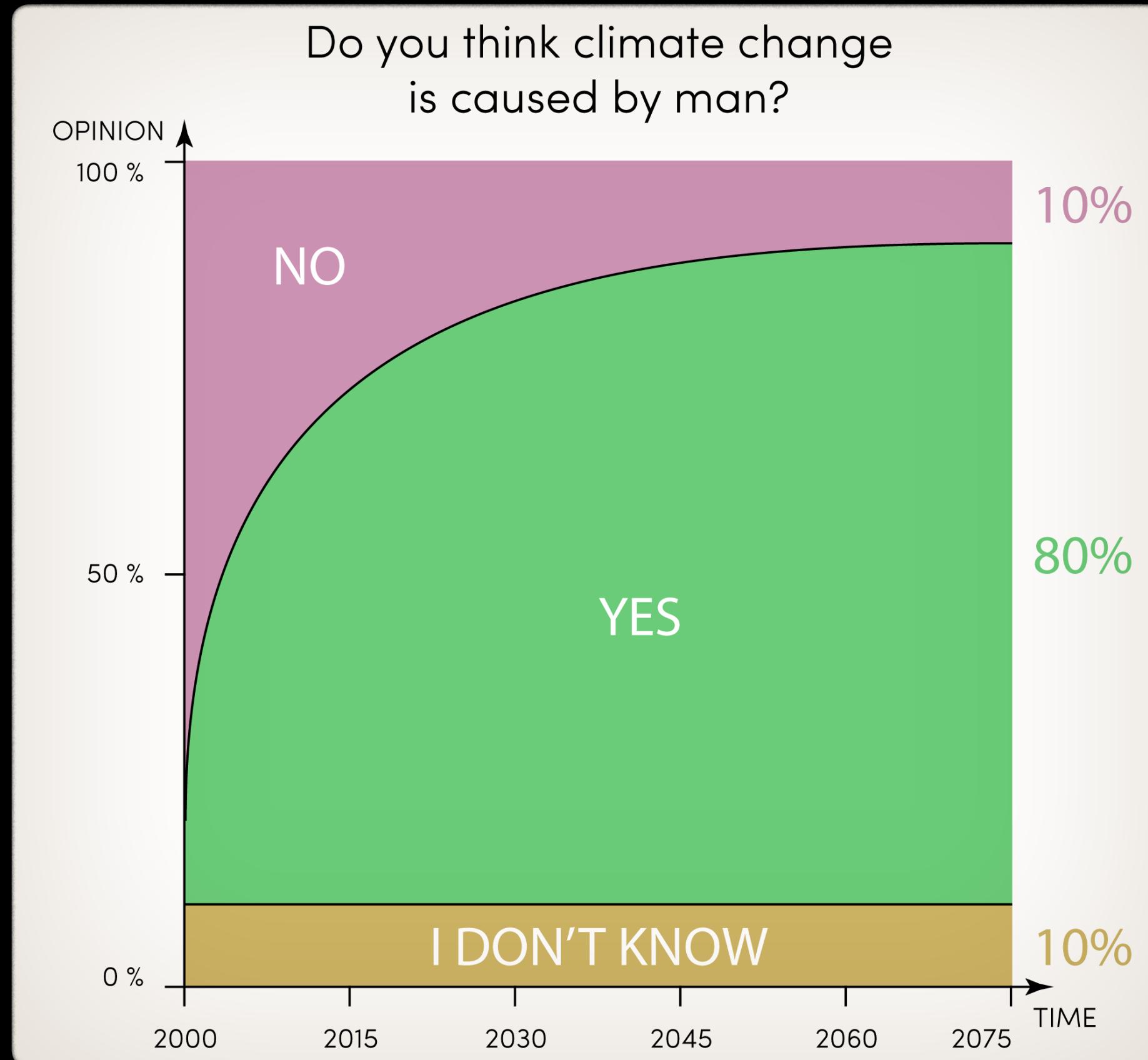
# Visual cognition

## Biases in scientific charts



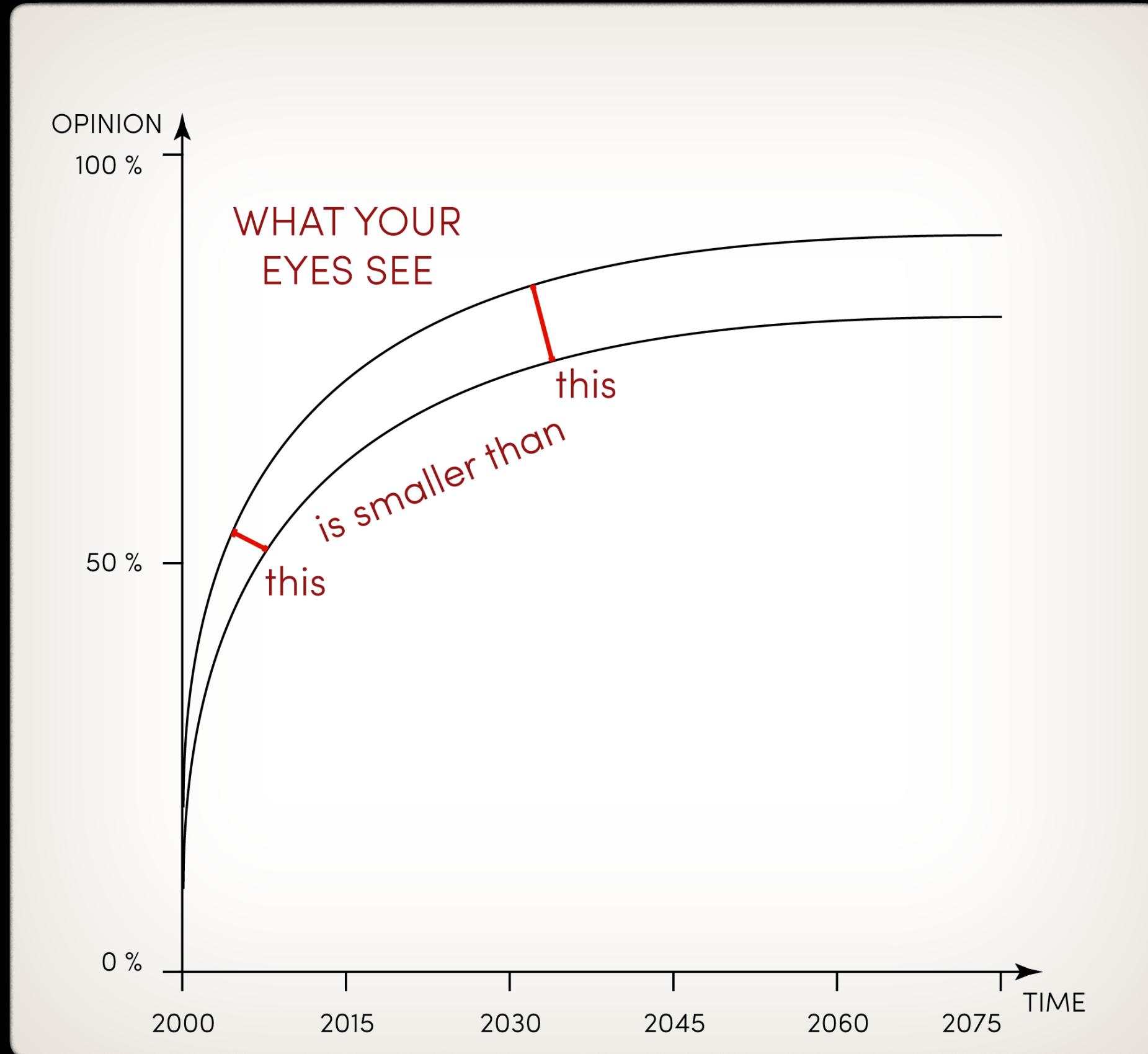
# Visual cognition

## Biases in scientific charts



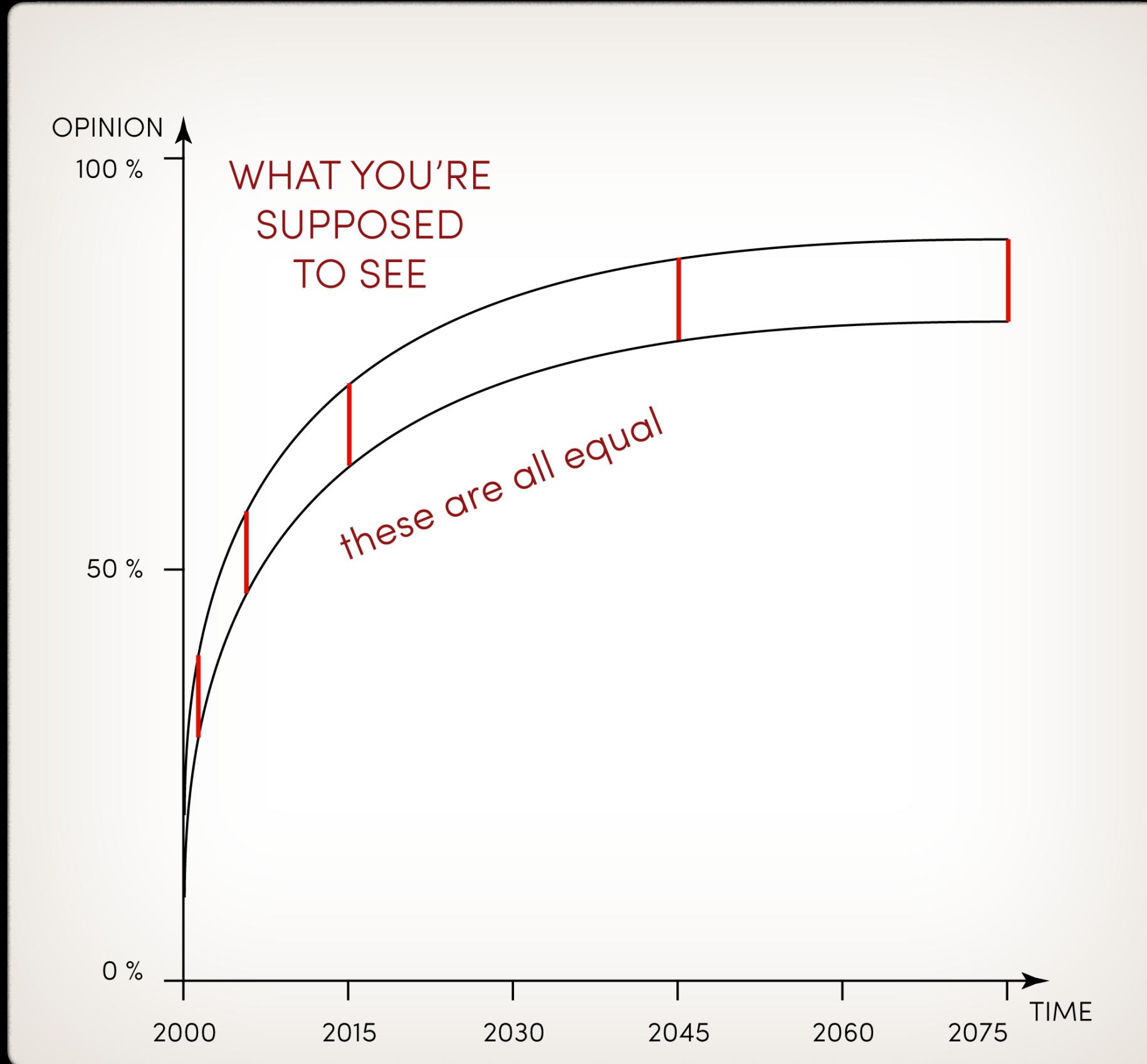
# Visual cognition

## Biases in scientific charts



# Visual cognition

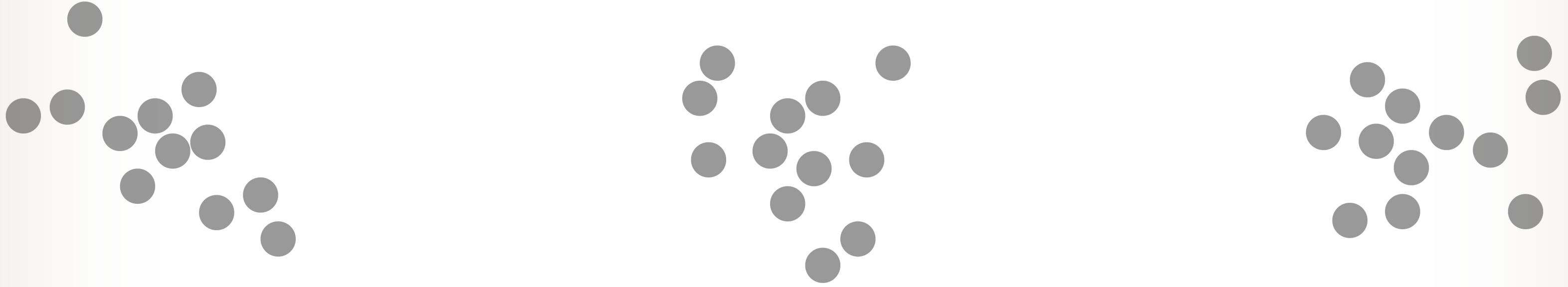
## Biases in scientific charts



# Visual cognition

## Issues with seeing clusters

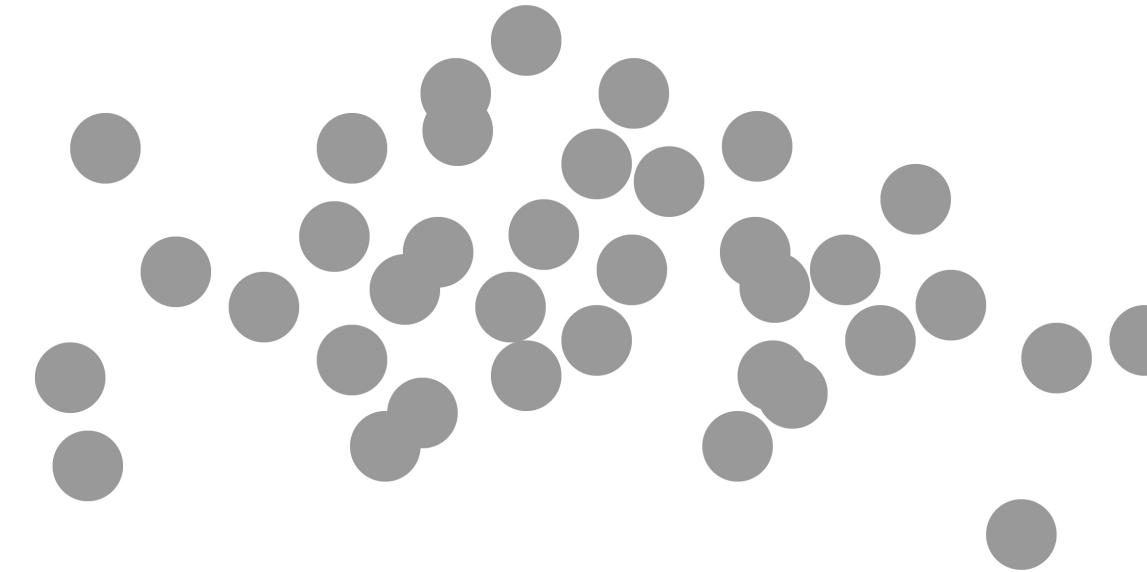
Case  
A.



# Visual cognition

## Issues with seeing clusters

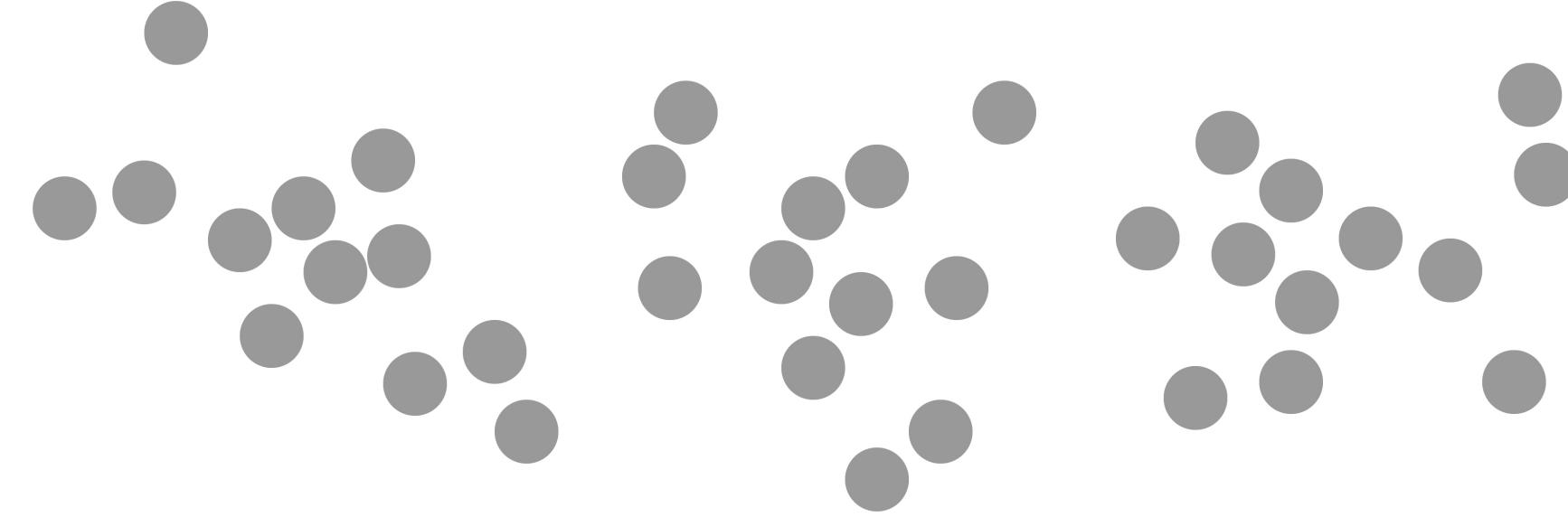
Case  
B.



# Visual cognition

## Issues with seeing clusters

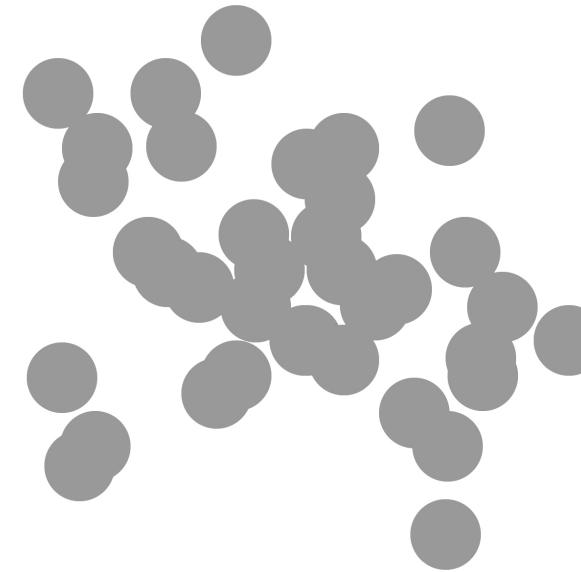
Case  
C.



# Visual cognition

## Issues with seeing clusters

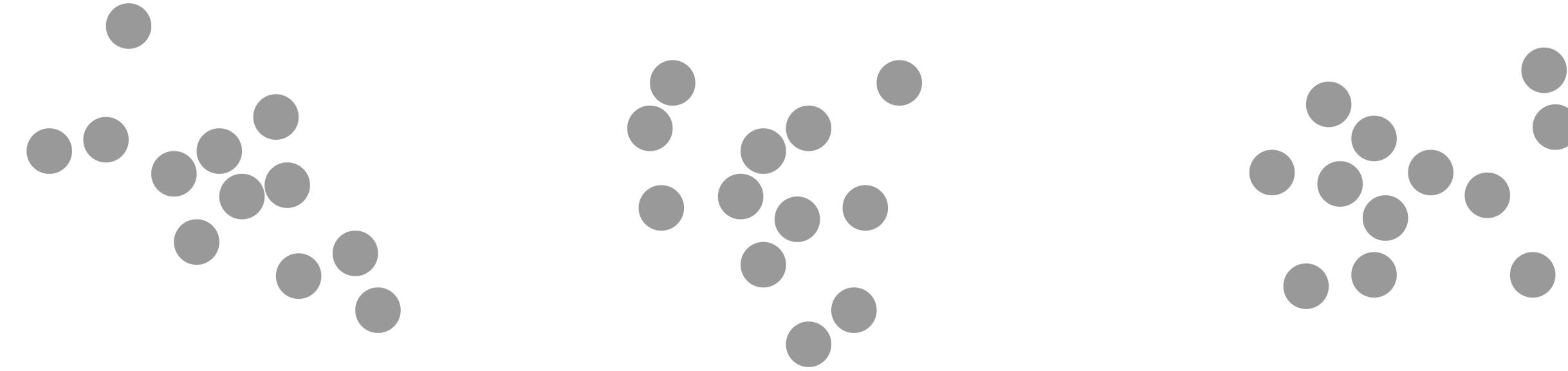
Case  
D.



# Visual cognition

## Issues with seeing clusters

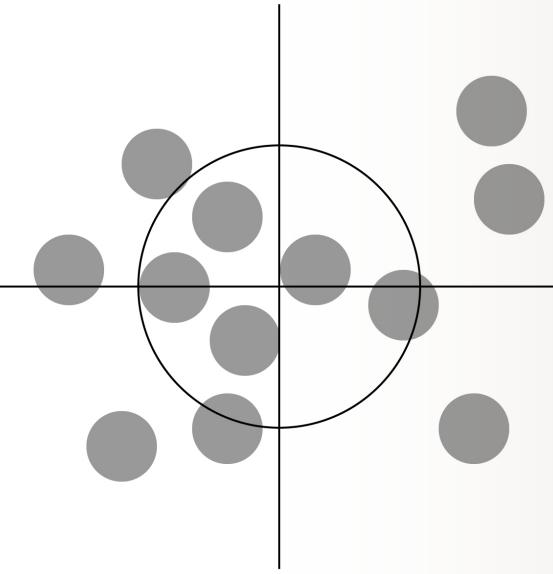
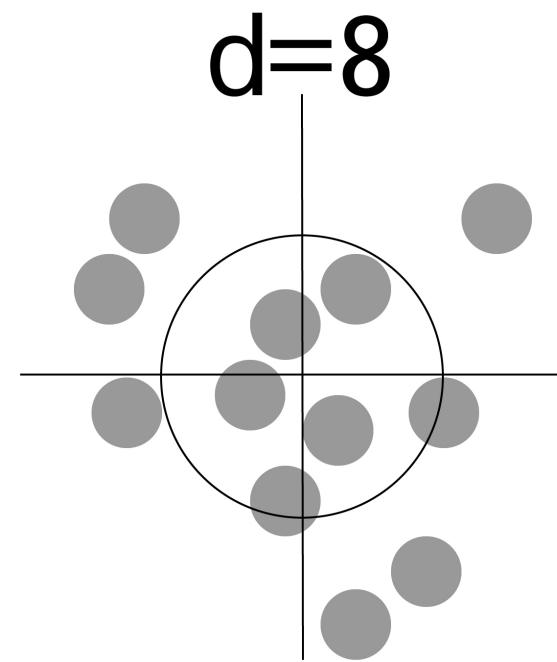
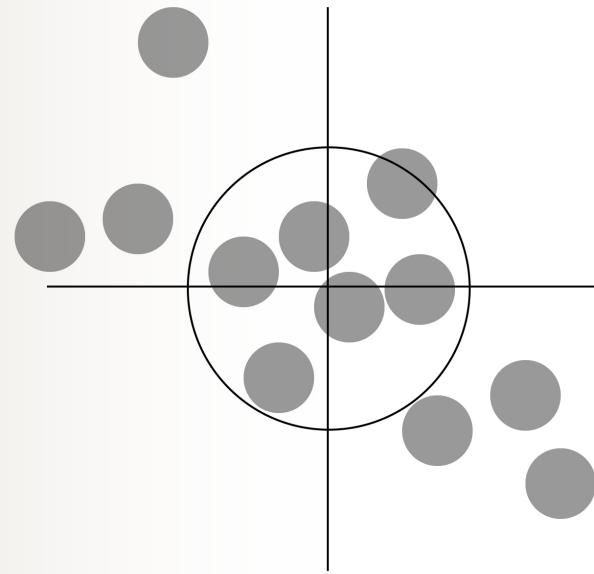
Case  
E.



# Visual cognition

## Issues with seeing clusters

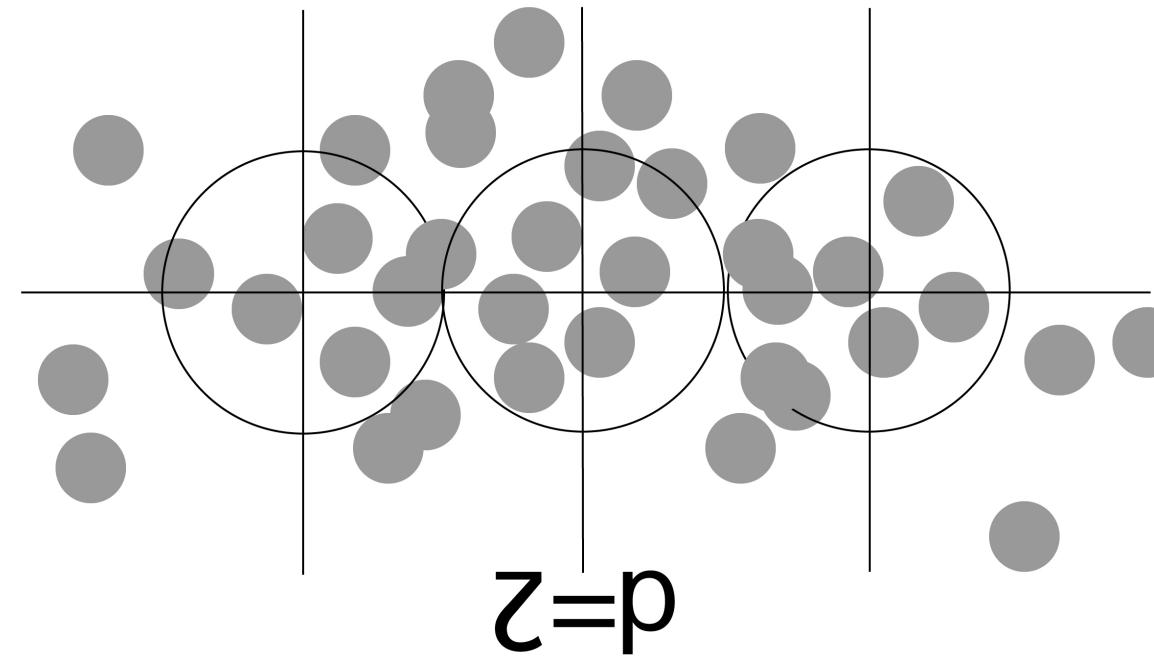
Case  
A.



# Visual cognition

## Issues with seeing clusters

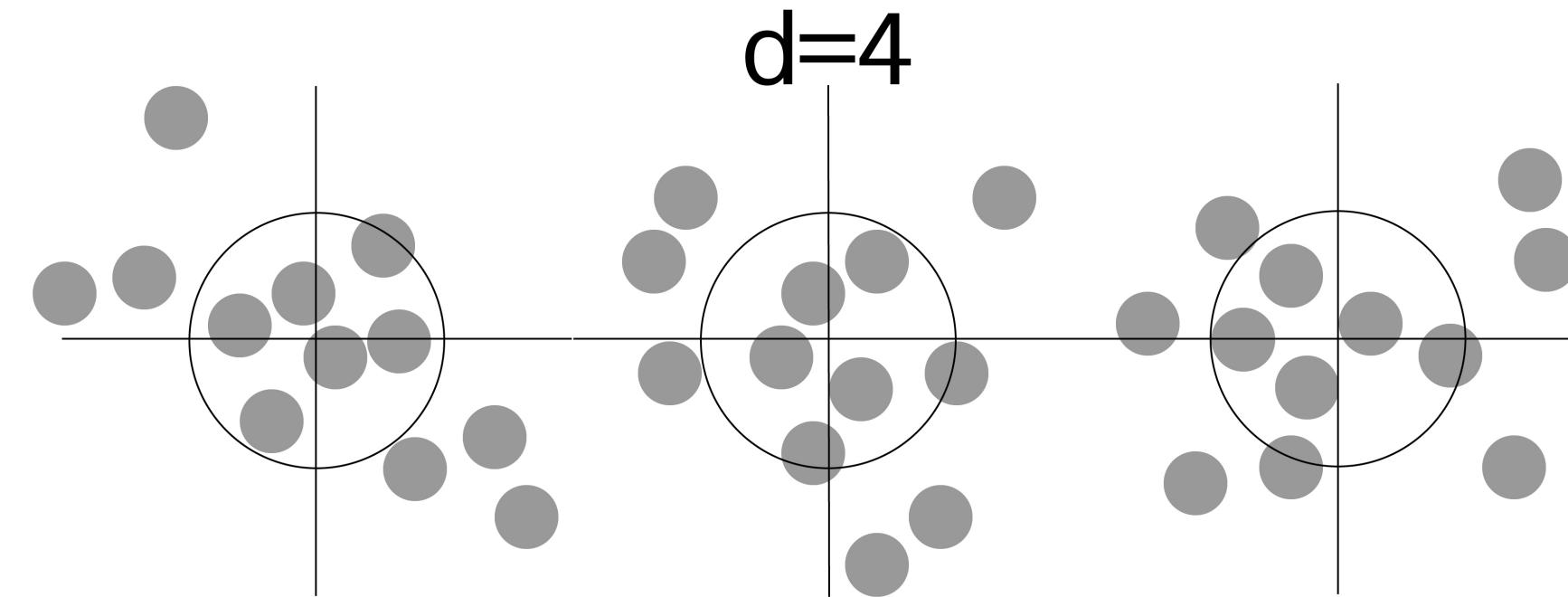
Case  
B.



# Visual cognition

## Issues with seeing clusters

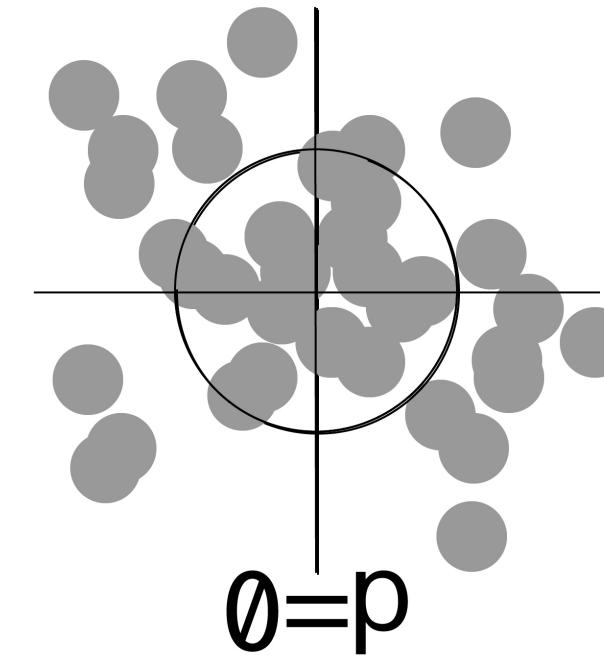
Case  
C.



# Visual cognition

## Issues with seeing clusters

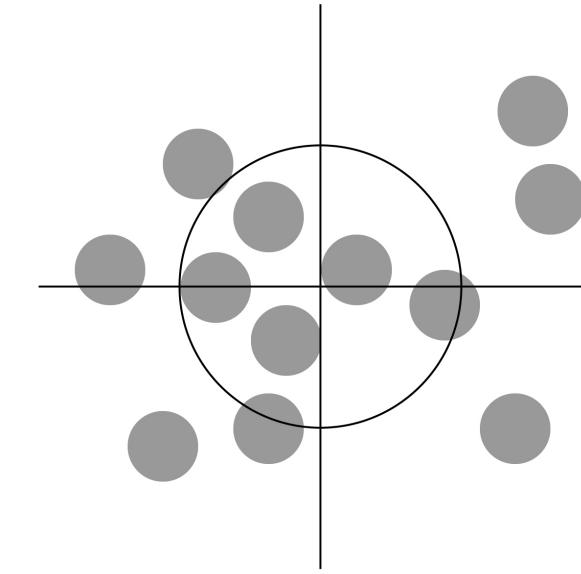
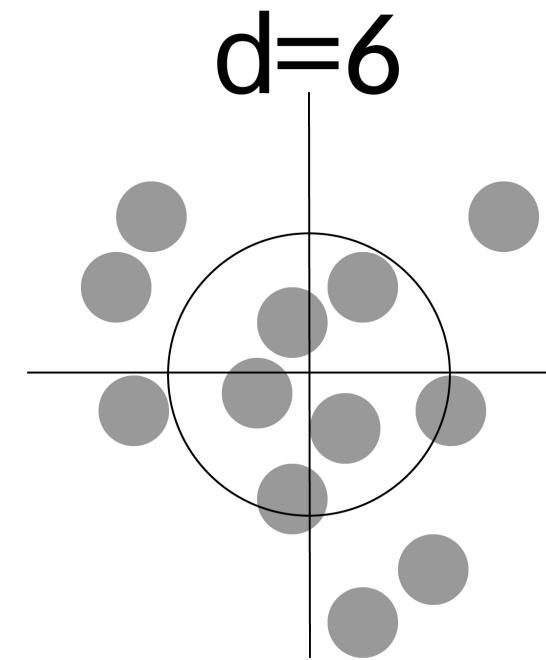
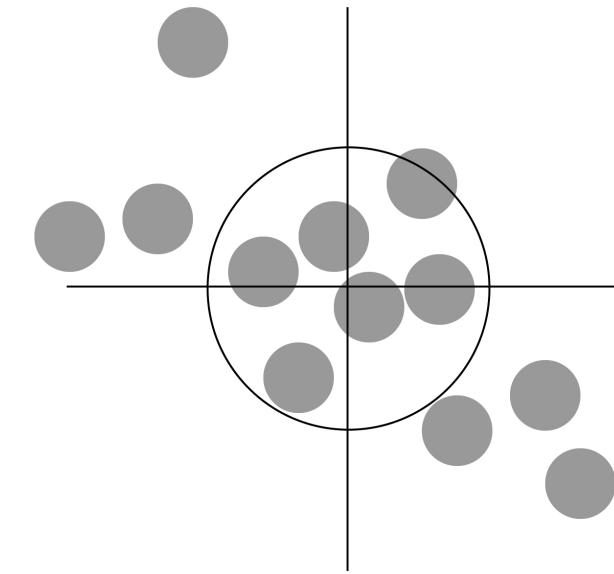
Case  
D.



# Visual cognition

## Issues with seeing clusters

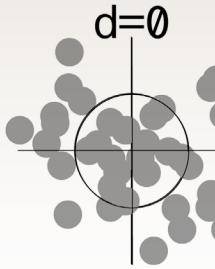
Case  
E.



# Visual cognition

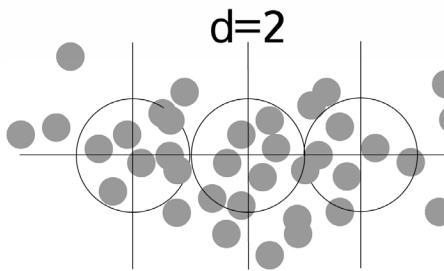
## Issues with seeing clusters

D.



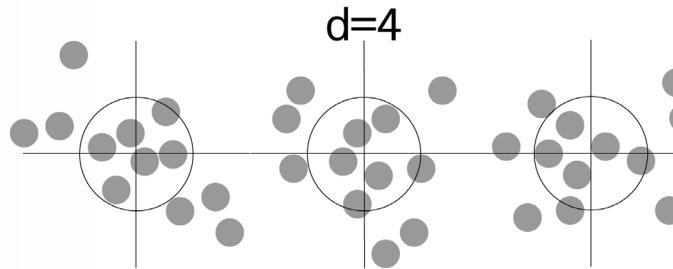
Gestalt:  
1 group

B.



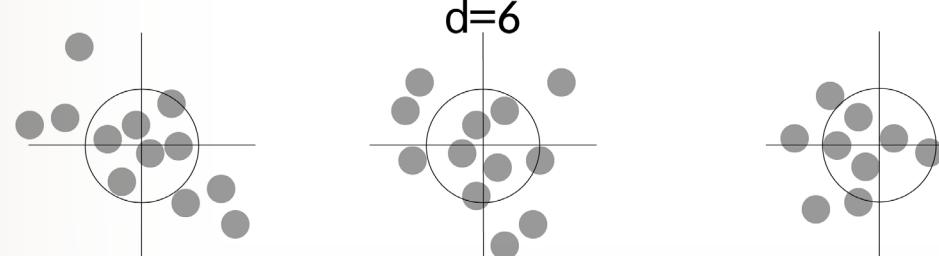
Gestalt:  
1 group

C.



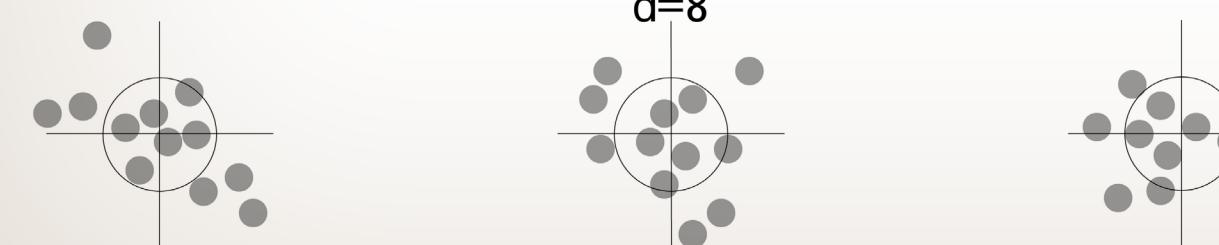
Gestalt:  
sort of separated

E.



Gestalt:  
well separated

A.

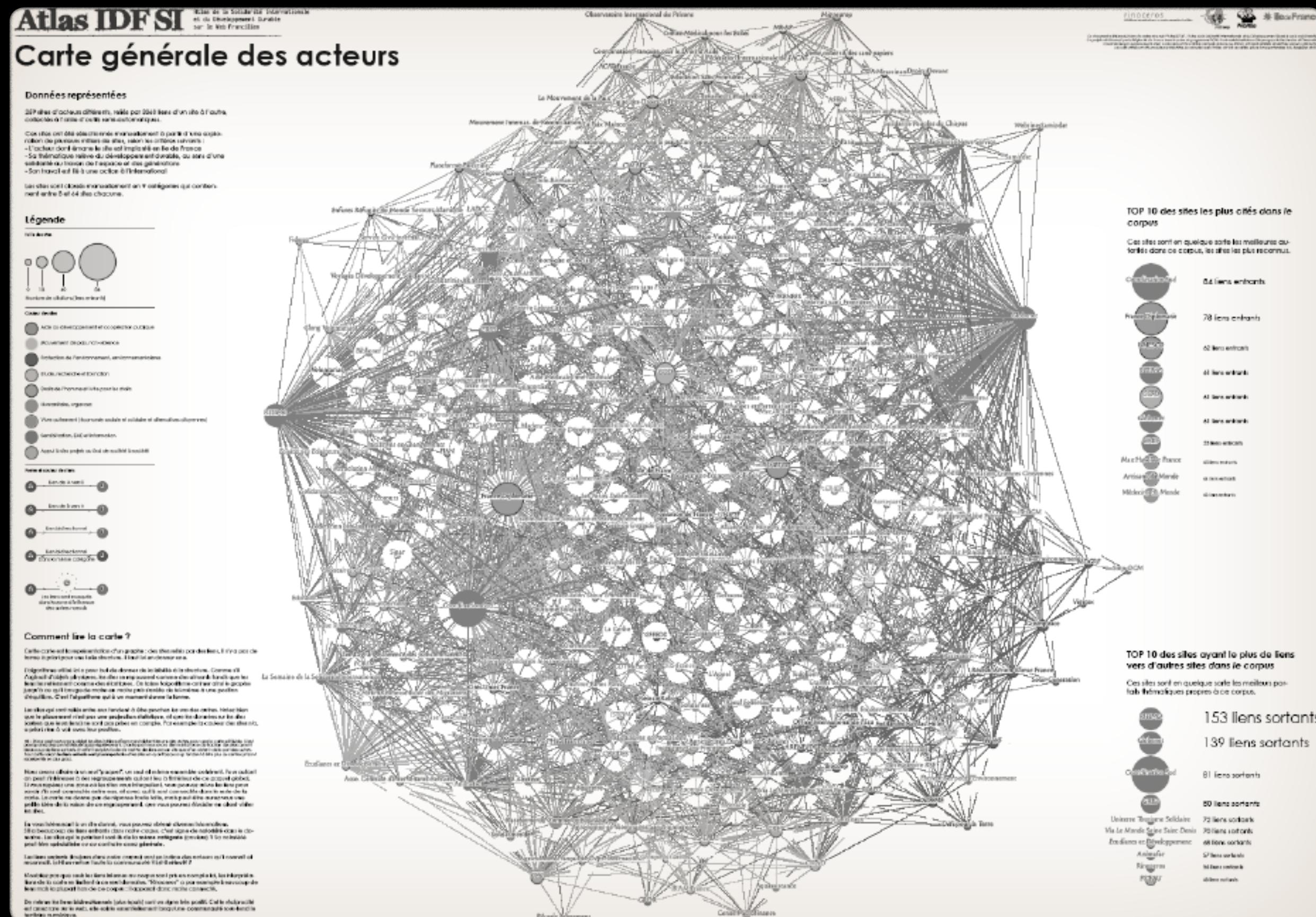


Gestalt:  
very well separated

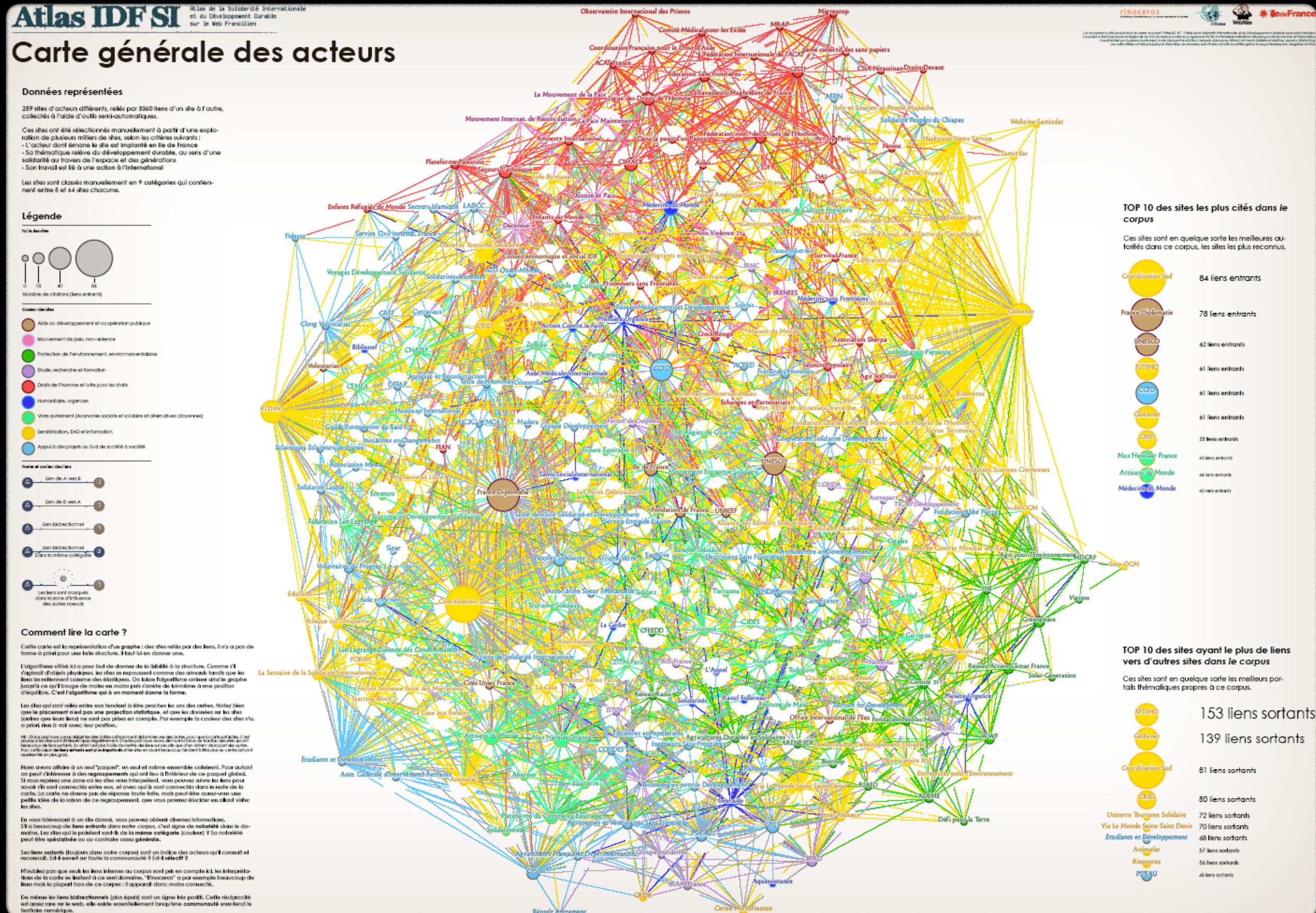
# **II.**

## Traps

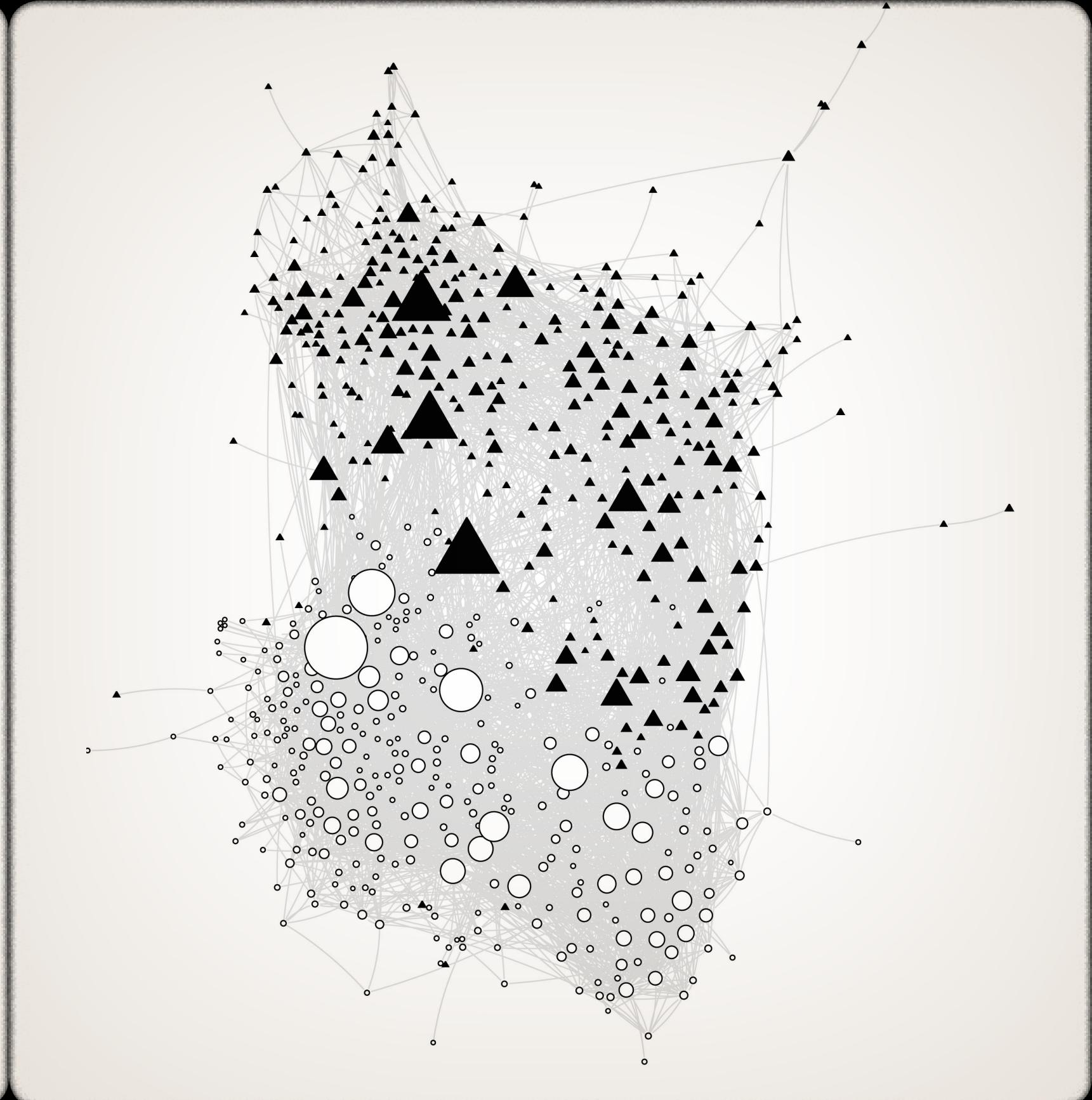
# Hairballs



# Hairballs



# Layers of complexity



# Thank you for your attention

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Mathieu.Jacomy@gmail.com*

