

OXFORD

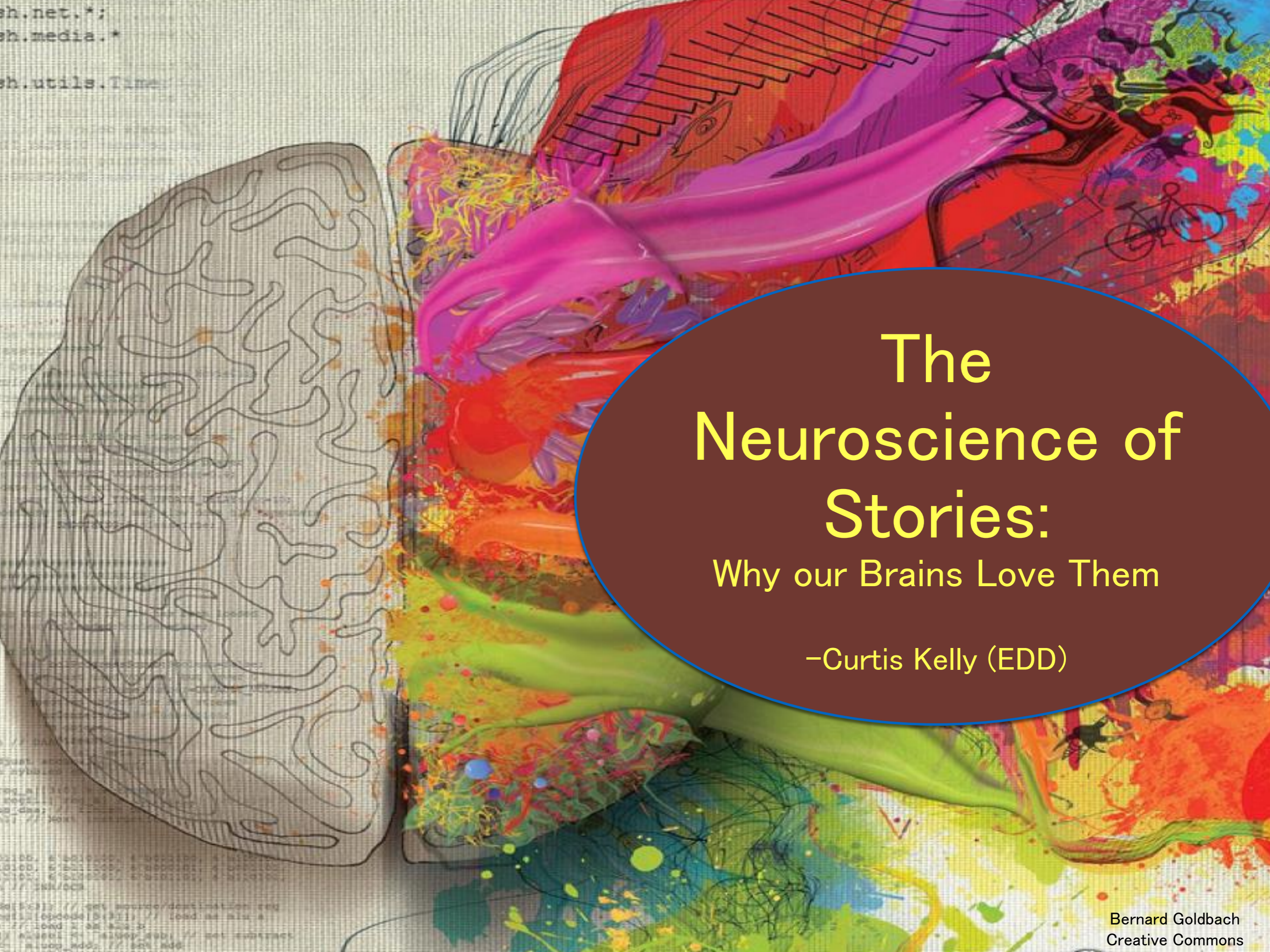
Oxford Day 2017

# THE POWER OF LANGUAGE

Partnership with Keio University, Endorsed by British Council







# The Neuroscience of Stories: Why our Brains Love Them

—Curtis Kelly (EDD)



# Why does ER work?

- provides exposure to the language
- provides comprehensible input
- builds automaticity



● 「時」や「場所」などのたずね方と答え方に注意しましょう。

Pay attention to ways of asking and answering questions of time and place.

確かめよう

Check

**when** [いつ] **When** can you see fireworks?— We can see them **in summer**.

**where** [どこ] **Where** is my bag?— It is **under the desk**.

**who** [だれ] **Who** is Bill?— He is **my brother**.

**whose** [だれの (もの)] **Whose** bag is this?— It is **mine**.

**Whose** is this bag?— It is **mine**.

新しい意味の語

**whose** だれのもの  
[訳語：だれの(p.68)]

**what** [なに] **What** is this?— It is **a bird**.

**What** do you do after school?— I play **tennis**.

**What** sport do you like?— I like **soccer**.

**how** [どう, どのようにして] **How** is the weather?— It is **sunny**.

**How** do you come to school?— I come **by bus**.

**which** [どの] **Which** bag goes to City Hall?— This **one** does.

**how ...** [どのくらい...] **How many** CDs do you have?— I have **five**.

**How long** does it take?— It takes about **fifteen minutes**.

**How old** are you?— I am **thirteen years old**.

やってみよう

Let's Try

に適切な語を入れて、次の対話文を完成しましょう。  
Complete the dialogs by putting suitable words into the

(1) A: When does Ken study math?

B: He studies math after dinner.

(2) A: Whose camera is this?

B: It's my father's.

(3) A: What does he have for breakfast?

B: He has cereal for breakfast.

(4) A: Where is your dog?

Wh- questions

● 疑問詞ではじまる疑問文 ●

疑問詞は文のはじめに置きます。

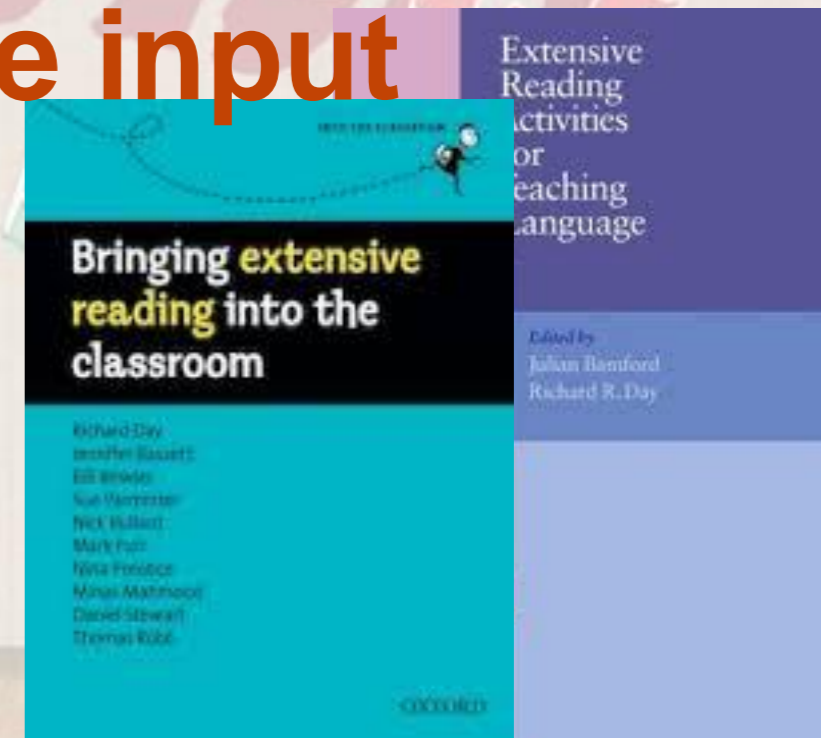
疑問詞ではじまる疑問文には

- provides exposure to the language
- provides comprehensible input
- builds automaticity



# Why does ER work?

- provides exposure to the language
- provides comprehensible input
- builds automaticity

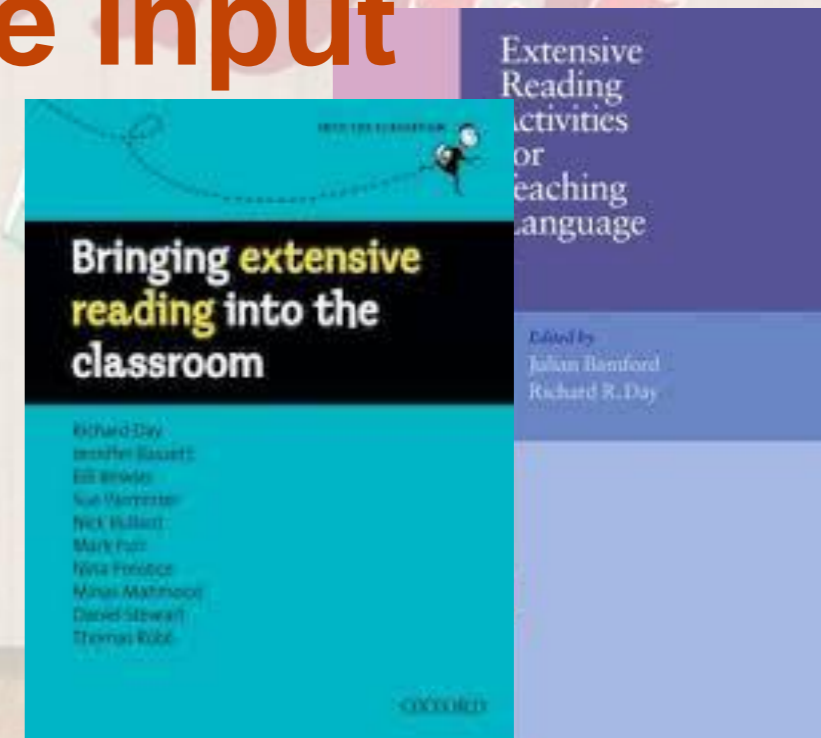




# Why does ER work?

- provides exposure to the language
- provides comprehensible input
- builds automaticity

**pleasurable**





# Emotion

A close-up photograph of a green printed circuit board (PCB) densely packed with electronic components. The board is populated with numerous integrated circuits (chips) of various shapes and sizes, some in black plastic packages and others in larger, more complex packages. There are also several electrolytic capacitors, some in red and others in yellow, and various resistors. The intricate network of copper traces is visible across the surface. The word "Emotion" is superimposed in a large, bold, white sans-serif font across the center of the image. The background is dark, making the green board stand out.

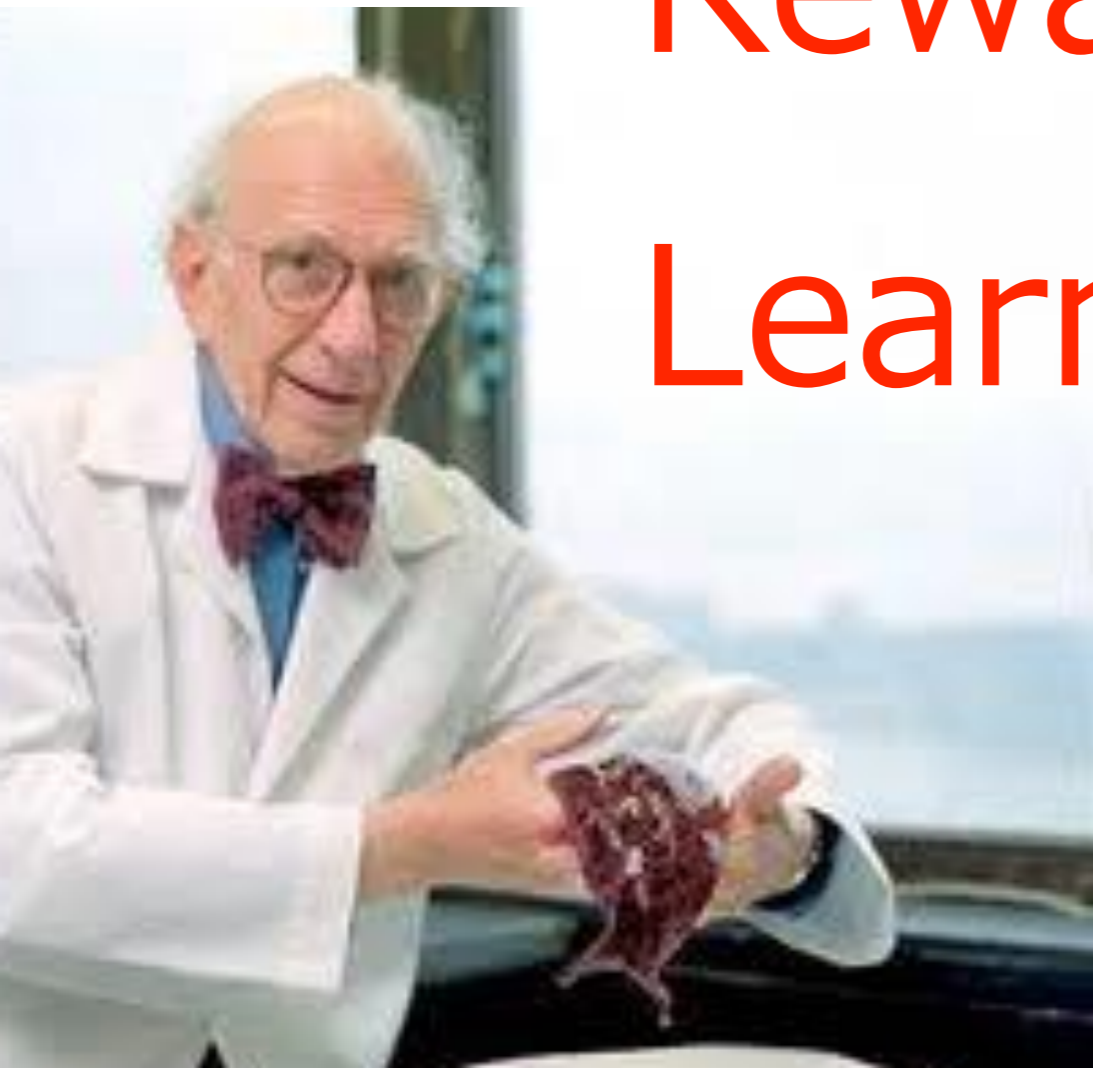


# Dopamine

**Motivation:** I gotta have it.

**Reward:** Ahh, that was good

**Learning:** Stronger Synapses





# Why does ER work?

pleasurable  
stories







**Big question of the day**

**Why are stories so  
brain compatible?**



# Digitale



Rex Tanimoto



PowerPoint Story



# *Love at First Sight*

一目ぼれ

By Yuki Yasuda, Akiko Nishimura, & Akiko Tomori



James hated himself.

He was weak, fat, and short. He was also afraid of girls, and he couldn't talk to them without feeling nervous.



After going to a restaurant, he fell in love at first sight with a waitress whose name was Jenny.





He went to Jenny's restaurant every day.

His love for Jenny made him stalk her.





James followed Jenny home every day.  
One day, she saw him stalking her.



Jenny thought James was strange.  
So she started avoiding him.





James hated himself for what he had done.



He wanted to change his personality and looks.  
He decided to start exercising a lot. Soon he had  
confidence in himself.





One day, Jenny spilt coffee on a customer by mistake.

The customer started bullying her.

James was walking past the restaurant and saw Jenny in trouble.





James entered the restaurant and protected Jenny.  
Jenny started falling in love with James.



Then James asked her,  
“Do you believe in love at first sight?”  
“Yes, I do,” replied Jenny.

After a few years, Jenny again said,  
“Yes, I do.”



... during their wedding ceremony in a church.



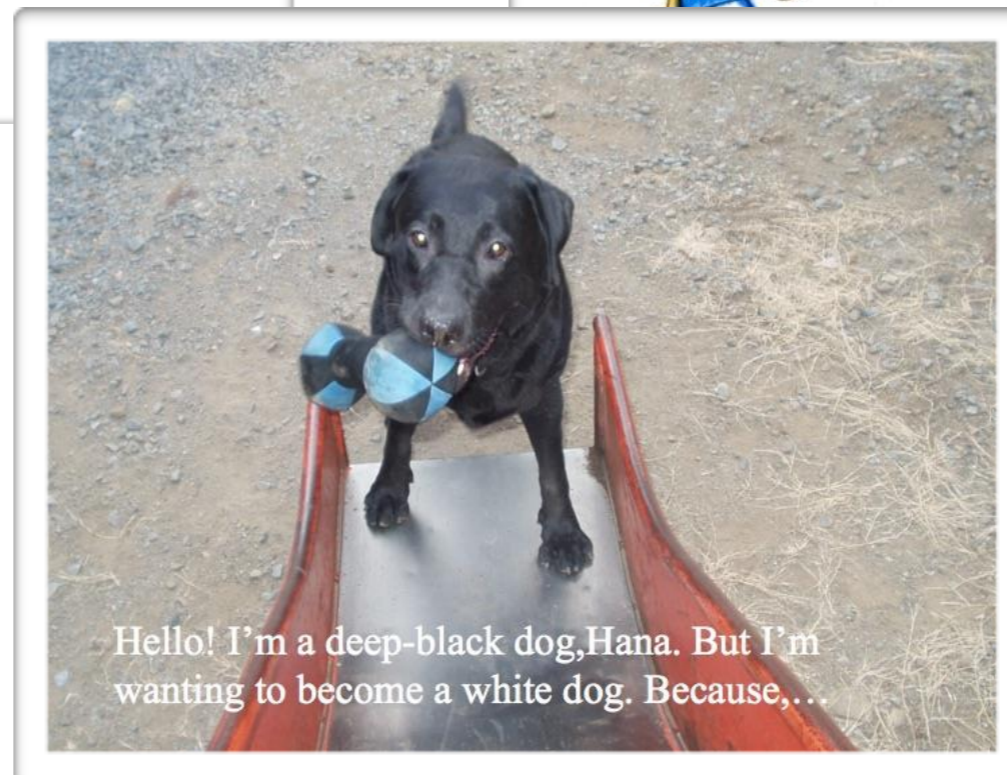
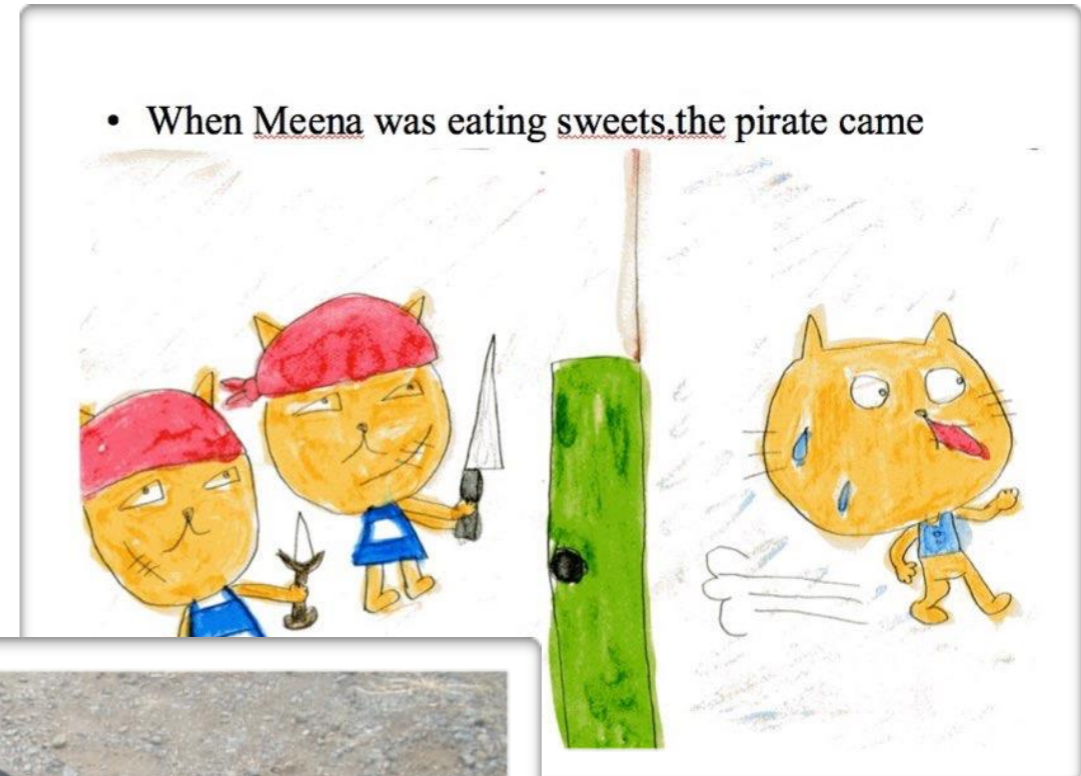
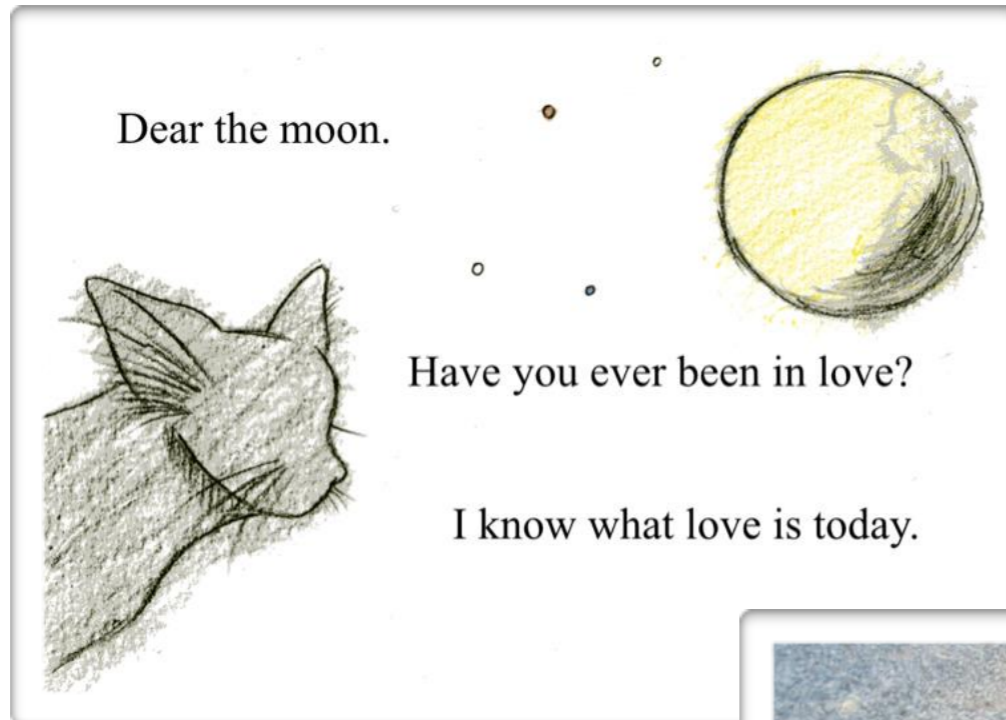
*And they lived happily ever after.*



*The End*

おわり

# Digitales





# Shift to the Left

Input

Output



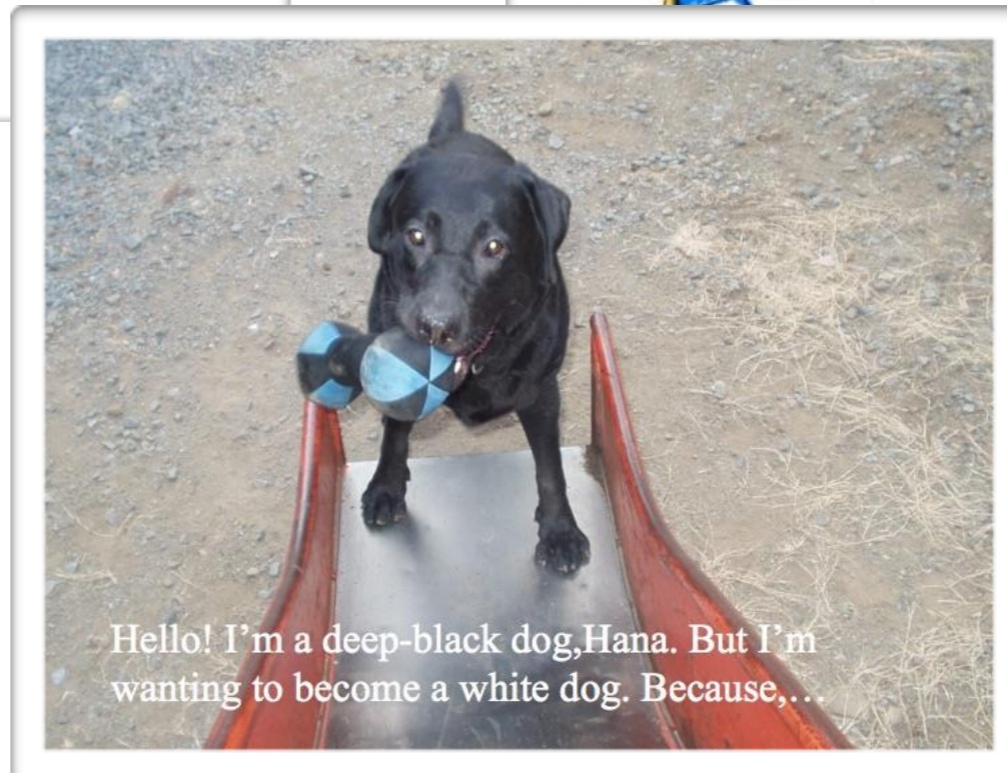
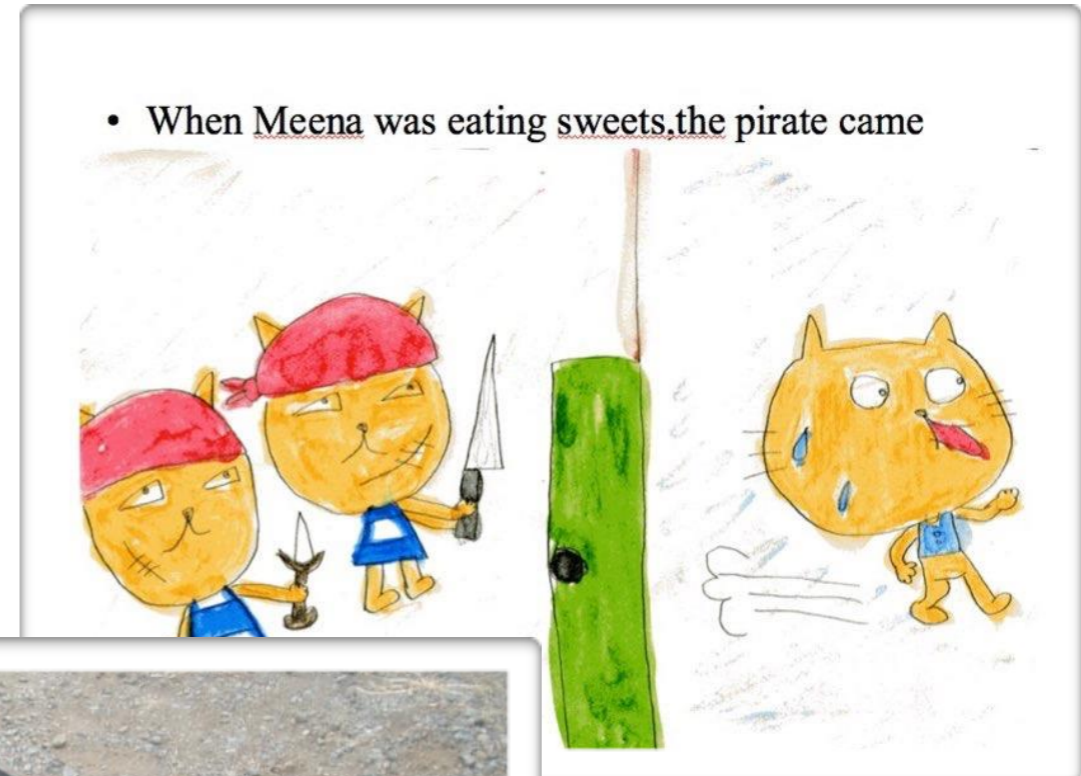
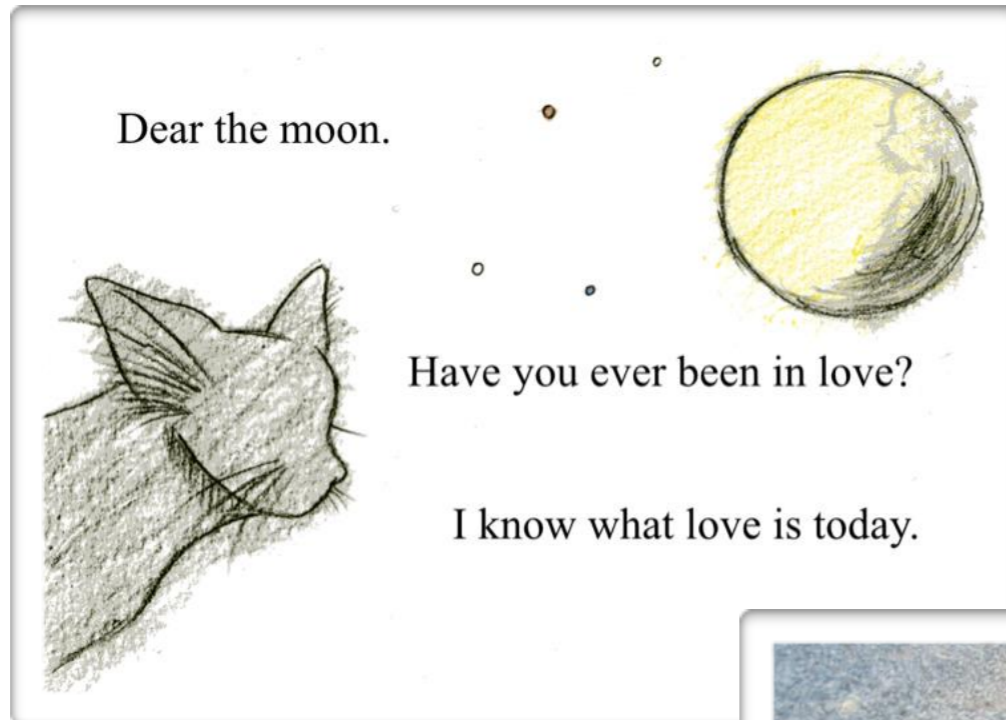
# Shift to the Left

## Analytical Relational





# Digitales





# Task

How do you use stories?





**Big question of the day**

**What is it about  
stories?**

# Stories vs Explaining

Joseph  
Britton







(Oaks, 1995) better retention from narrative lectures than traditional lectures

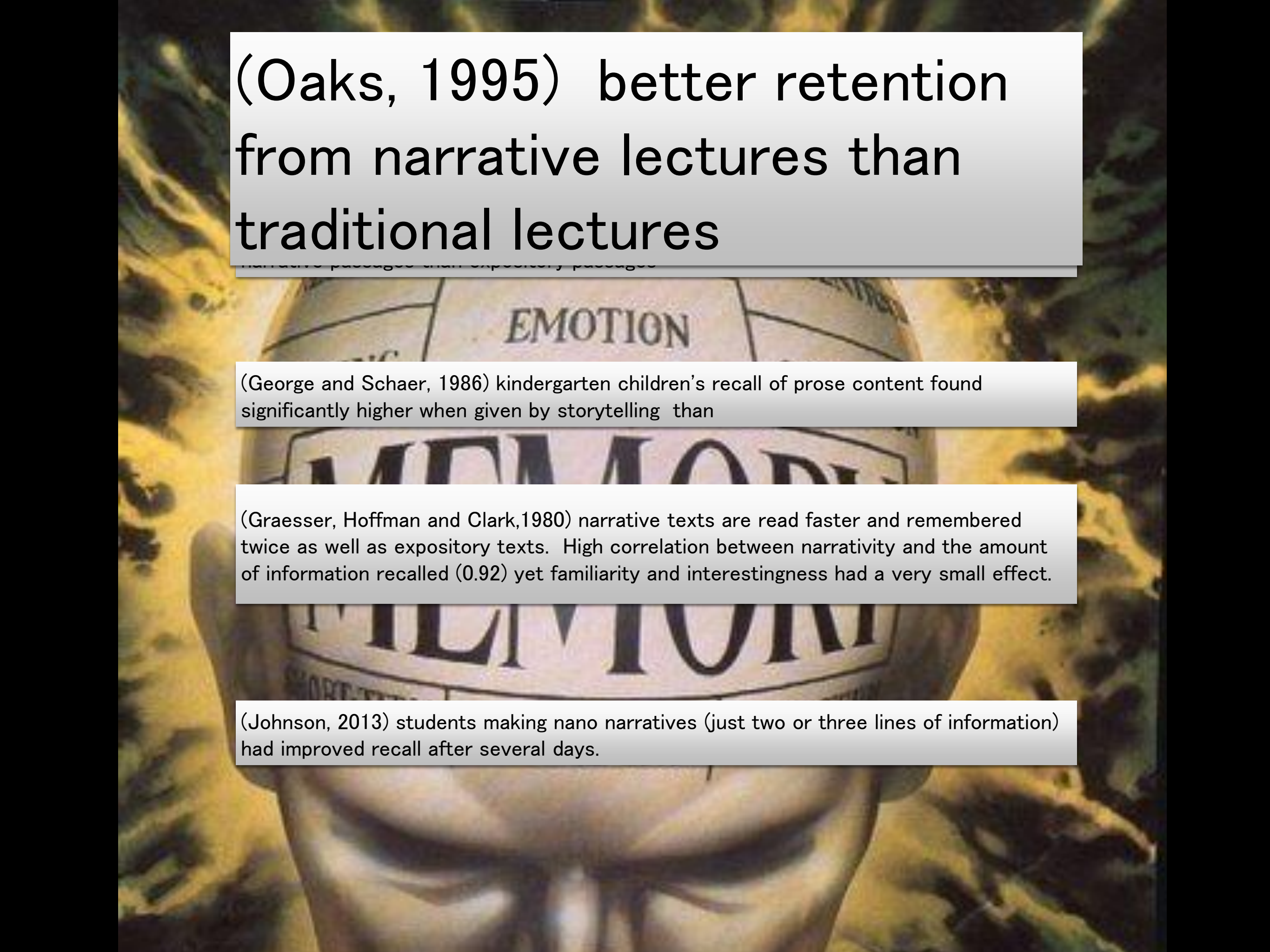
(Berhowitz and Taylor, 1981) Children recalled significantly more information from the narrative passages than expository passages

(George and Schaer, 1986) kindergarten children's recall of prose content found significantly higher when given by storytelling than

(Graesser, Hoffman and Clark, 1980) narrative texts are read faster and remembered twice as well as expository texts. High correlation between narrativity and the amount of information recalled (0.92) yet familiarity and interestingness had a very small effect.

(Johnson, 2013) students making nano narratives (just two or three lines of information) had improved recall after several days.





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The background of the slide is a photograph of a stone archway, likely part of a university building. The archway is made of light-colored stone and has the word "ASSOCIATION" inscribed on it. In the foreground, there is a large, dark stone statue of a person, possibly a historical figure, which is slightly out of focus. The overall scene is outdoors with some greenery visible in the background.

(Oaks, 1995) better retention from narrative lectures than traditional lectures

(George and Schaer, 1986)  
kindergarten children's recall of  
prose content found  
significantly higher when given  
by storytelling than  
... **television!**

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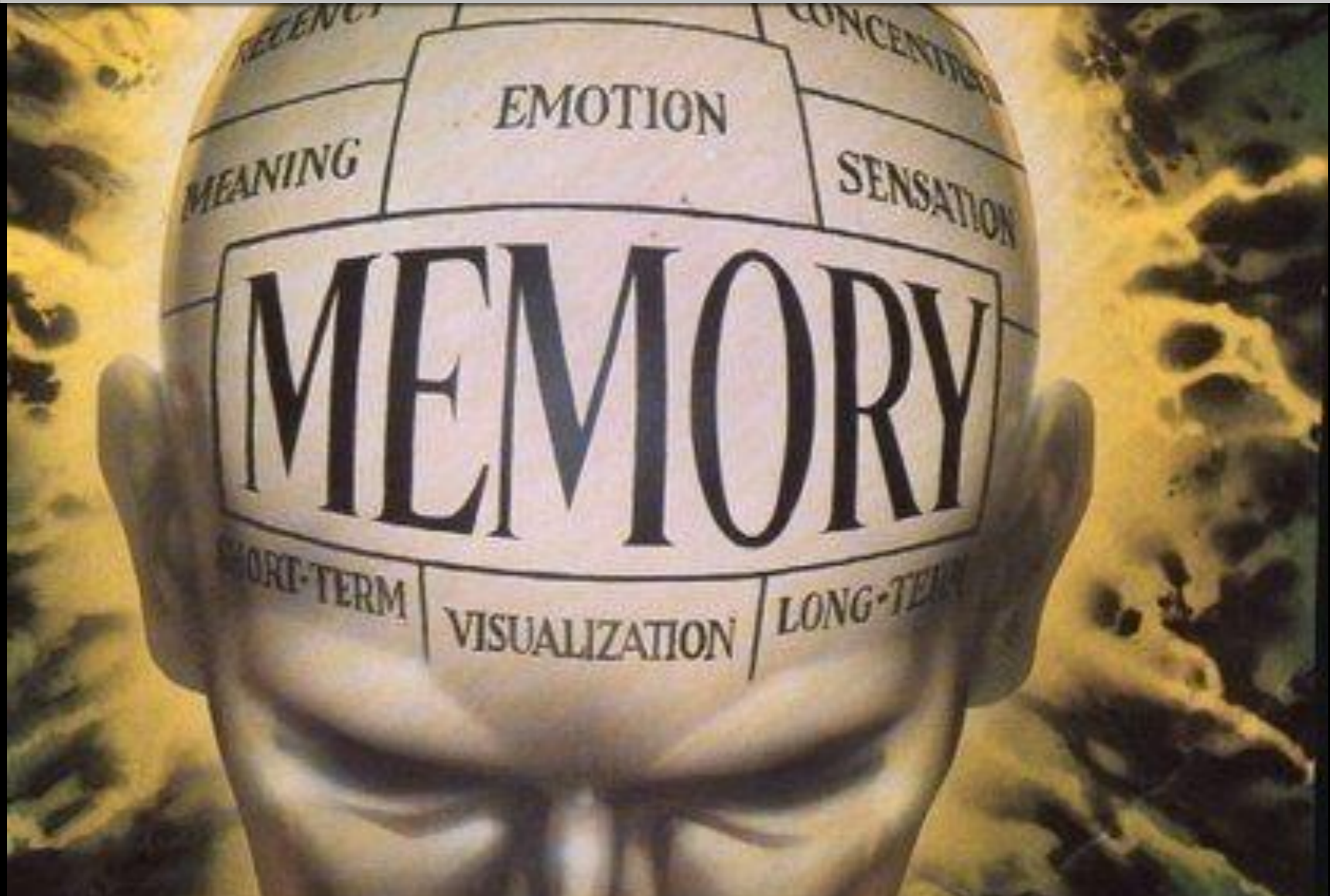
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(Bower, Callaghan, and Clark, 1969)

(Higbee 1977) word recall





(Bower, Callaghan, and Clark, 1969)

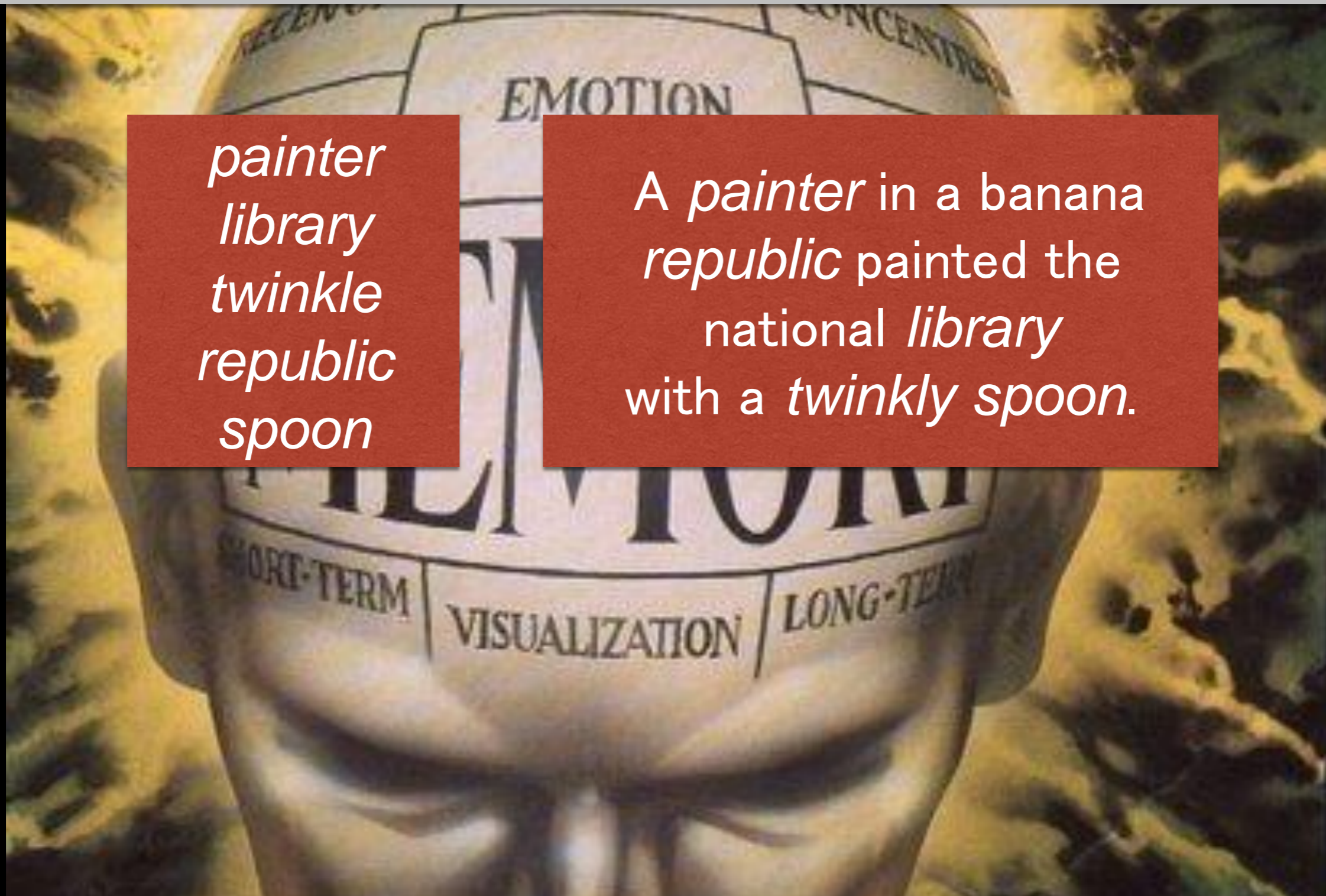
**6-7 times higher**

(Higbee 1977) word recall

**2-7 times higher**

*painter  
library  
twinkle  
republic  
spoon*

*A painter in a banana  
republic painted the  
national library  
with a twinkly spoon.*







L GODDES  
INI VADHERA

GODDES  
*for glam*







**Why Can't We?**

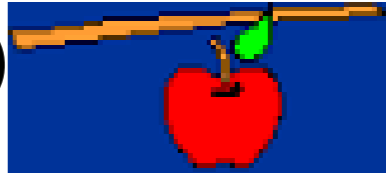




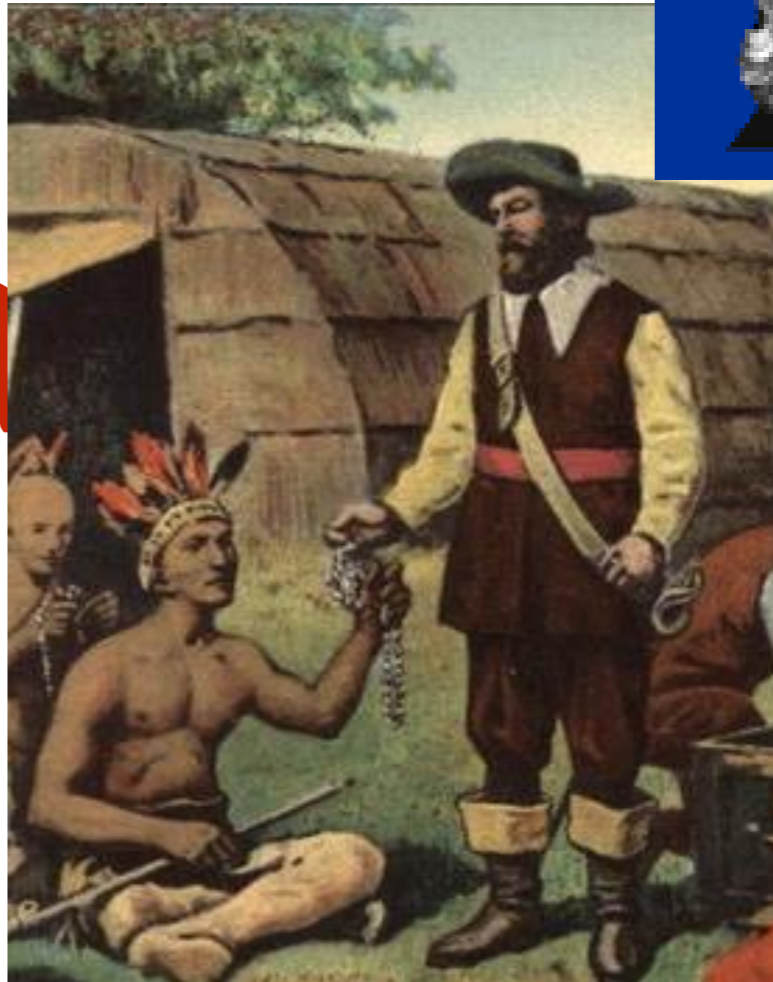
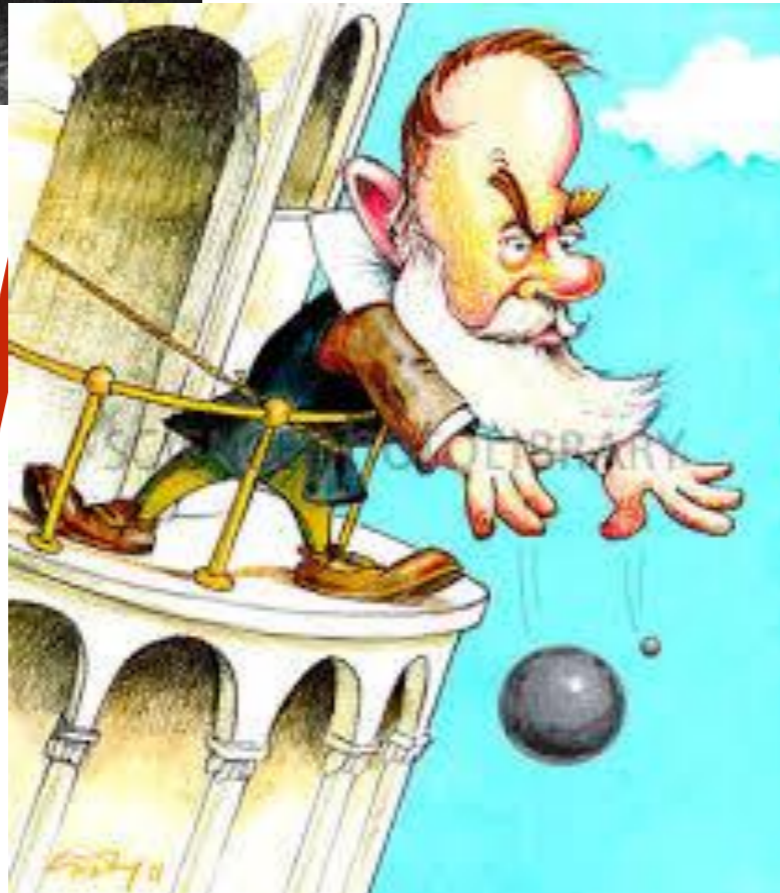
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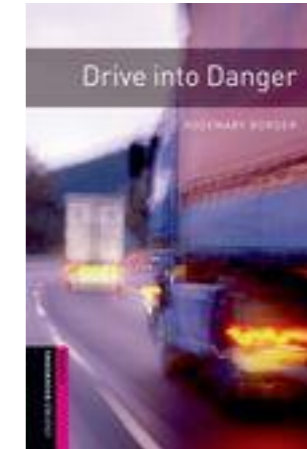
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ve?



# The Power of Stories





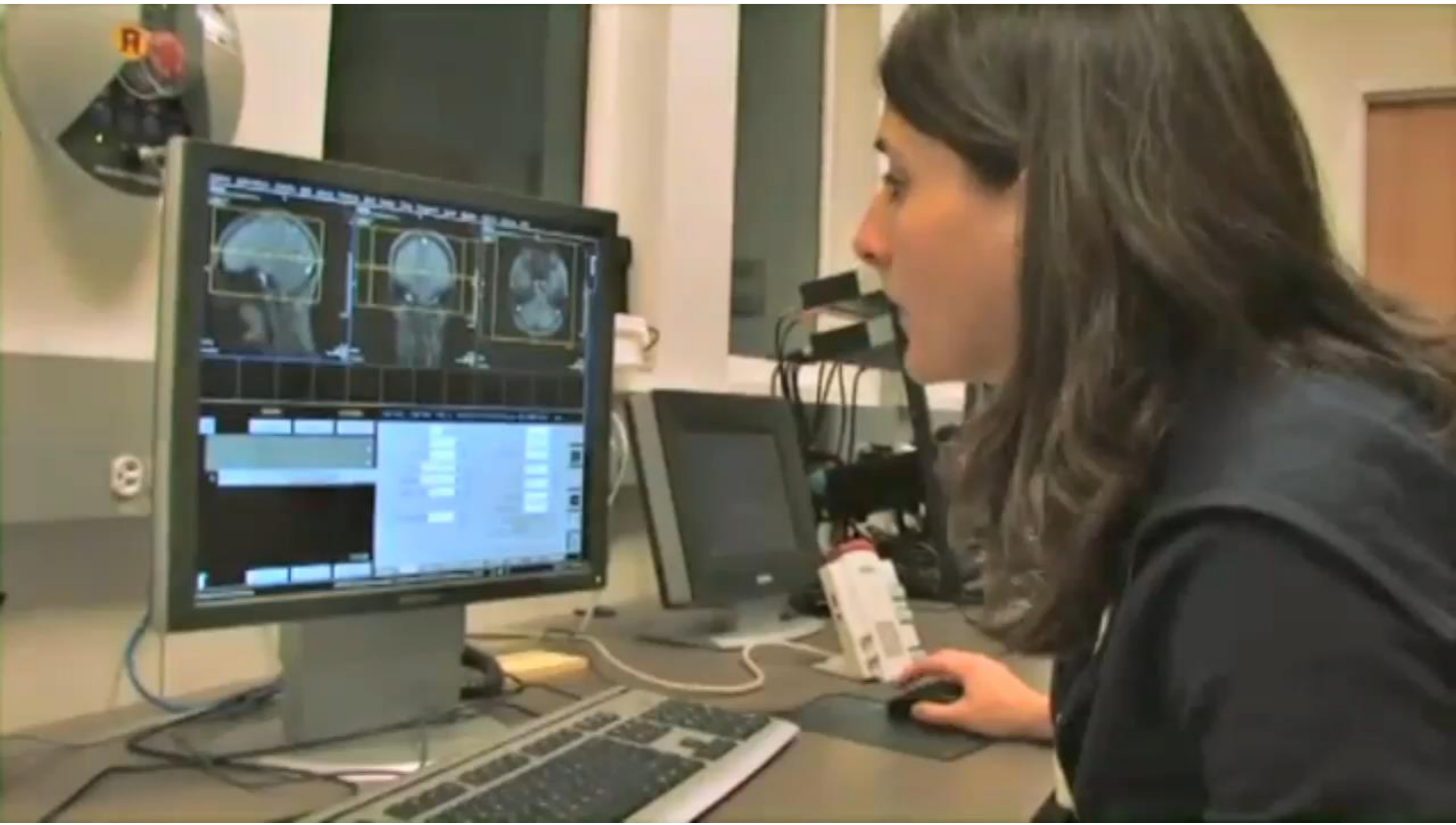
# The Power of Stories

## Emotion

### Dopamine



# Learning requires emotion





# No emotion, no learning

Emotion steers us through life. It is the brain's way to separate out what is important for us or not, and how, and what we should learn or not.



**Damasio**



**Immordino-Yang**

# The Power of Stories

## Emotion

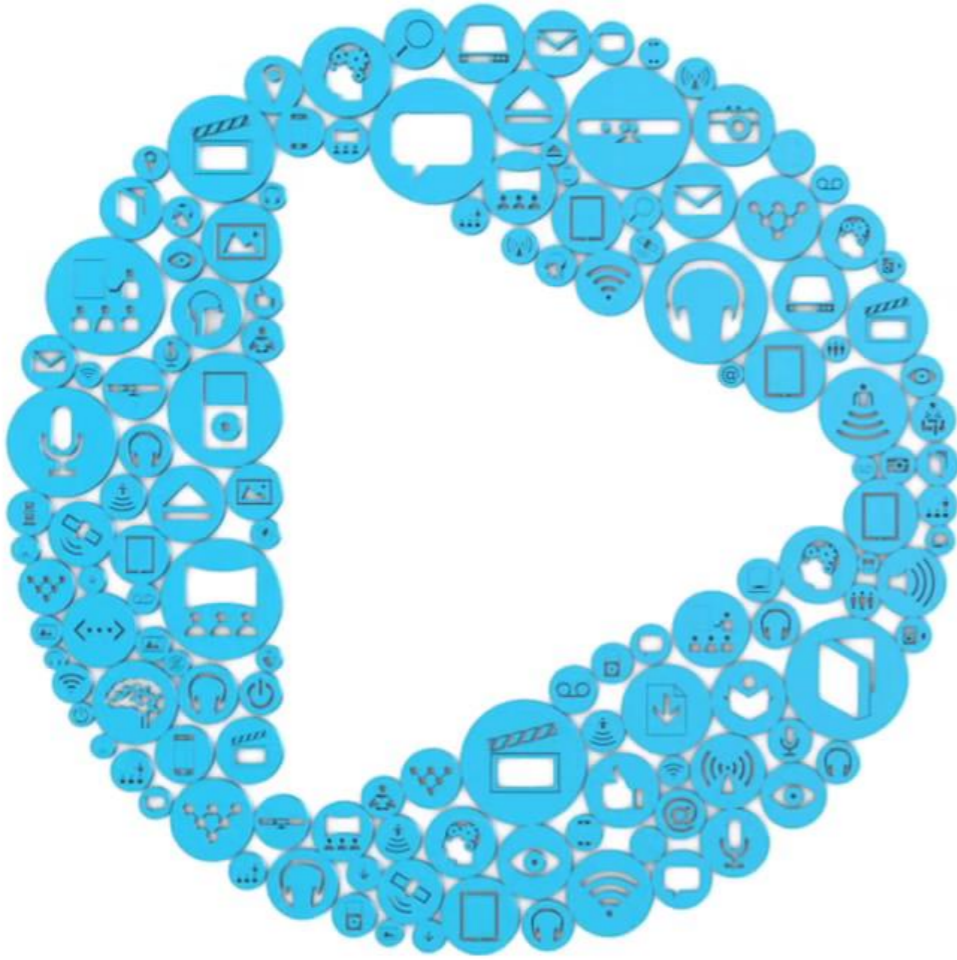
**Dopamine**

**Cortisol**

**Oxytocin**







# Future of StoryTelling



**Big question of the day**

**What is it about  
stories?**

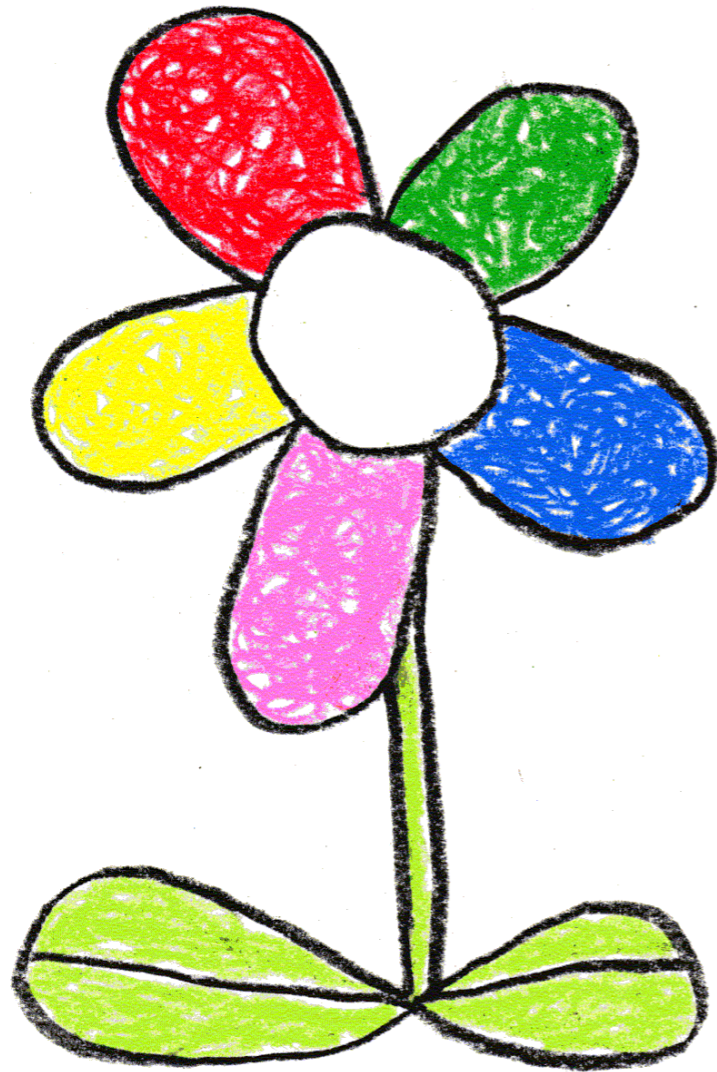




**Big question of the day**

**What is it about  
*this* story?**

# Colorful Bears



1年5組24番  
豊見山 愛海



There was one small house in the forest.  
Mother bear and 5 child bears lived there.





All of the five bears were a different color.  
Red bear “Cherry.” Pink bear “Peach.” Blue  
bear “Berry.” Yellow bear “Lemon.” And  
green bear “Lime.”





The children thought. “We all have the same face. What if we all become the same color?”  
Mom won’t know who we are.





Children made their bodies pure-white with paint. They were going to show it to mother.  
“Mom won’t know who we are!”





“Mom, do you know who I am?” one child bear said. Mother was very surprised.



However, mother said with a smile,  
“Of course, you are yellow bear Lemon.”  
And, mother said everyone's name one after  
another.

“How do you  
know even though  
Everyone is the  
same color?”  
The children said.





Mother said. “Easy. Because you differ one by one. Your expression and character are different even though all your faces look alike. You are not the same at all.”

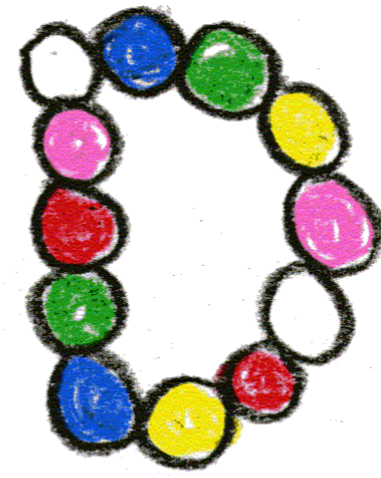
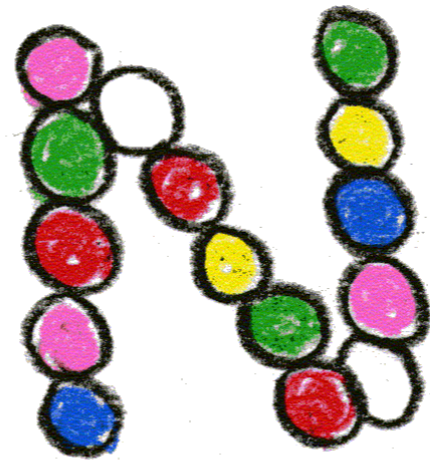
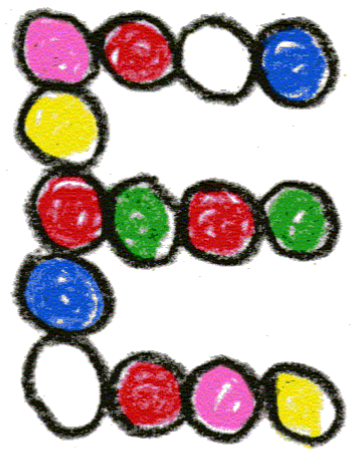



Children smiled too, “Indeed, we all differ one by one.”



Mother and 5 child bears were happy.







# Discuss

What did I realize  
about this story?

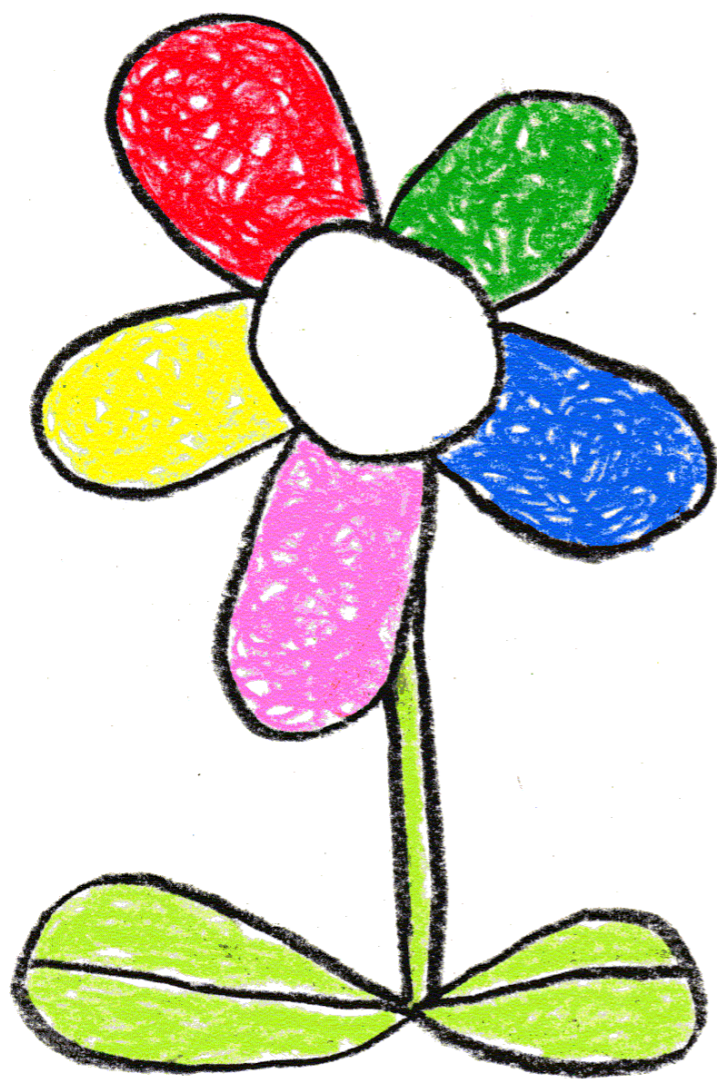




**Big question of the day**

**What is it about  
*this* story?**

# Colorful Bears



1年5組24番  
豊見山 愛海



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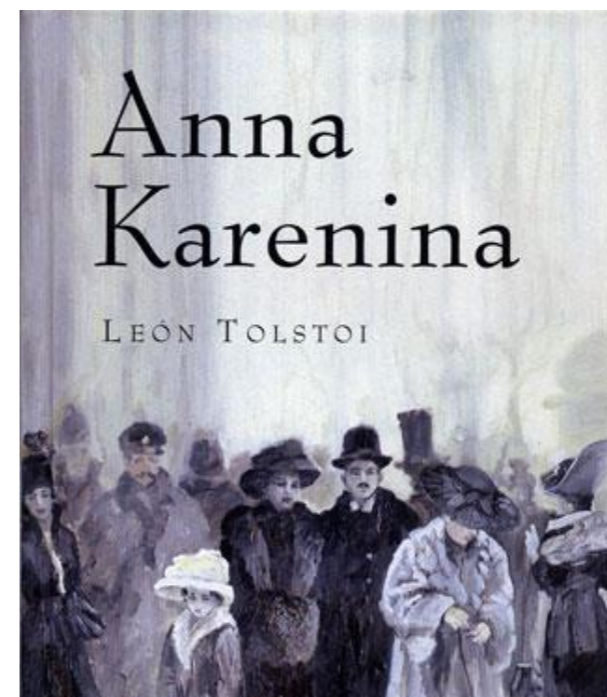
# E.O. Wilson

**“The stories we tell ourselves and others are our survival manuals.”**

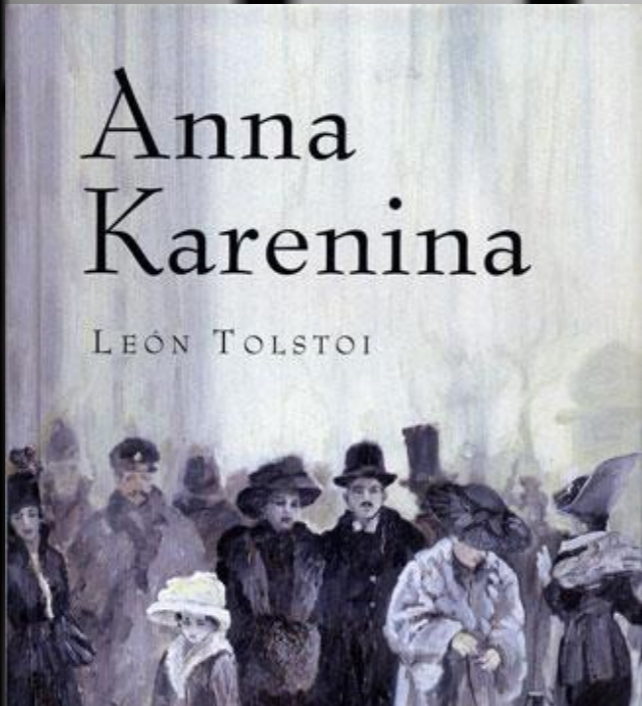




RADIOLAB







Survival Manual



**Big question of the day**

# **Guidelines for Life**



Children smiled too, “Indeed, we all differ one by one.”



Mother and 5 child bears were happy.



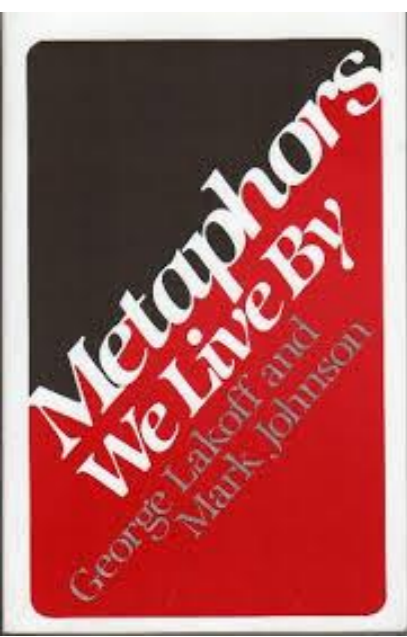
**Big question of the day**

**What is it about  
stories?**





**Metaphor**



Metaphor is a fundamental mechanism of the mind that allows us to understand complex things







# Metaphor



# Neural Reuse





# Neural Reuse

**Massive Redeployment**







A  
CO

Motor  
cortex



Broca's  
area

**FRONTAL  
LOBE**

**TEMPORAL  
LOBE**

**PARIETAL  
LOBE**

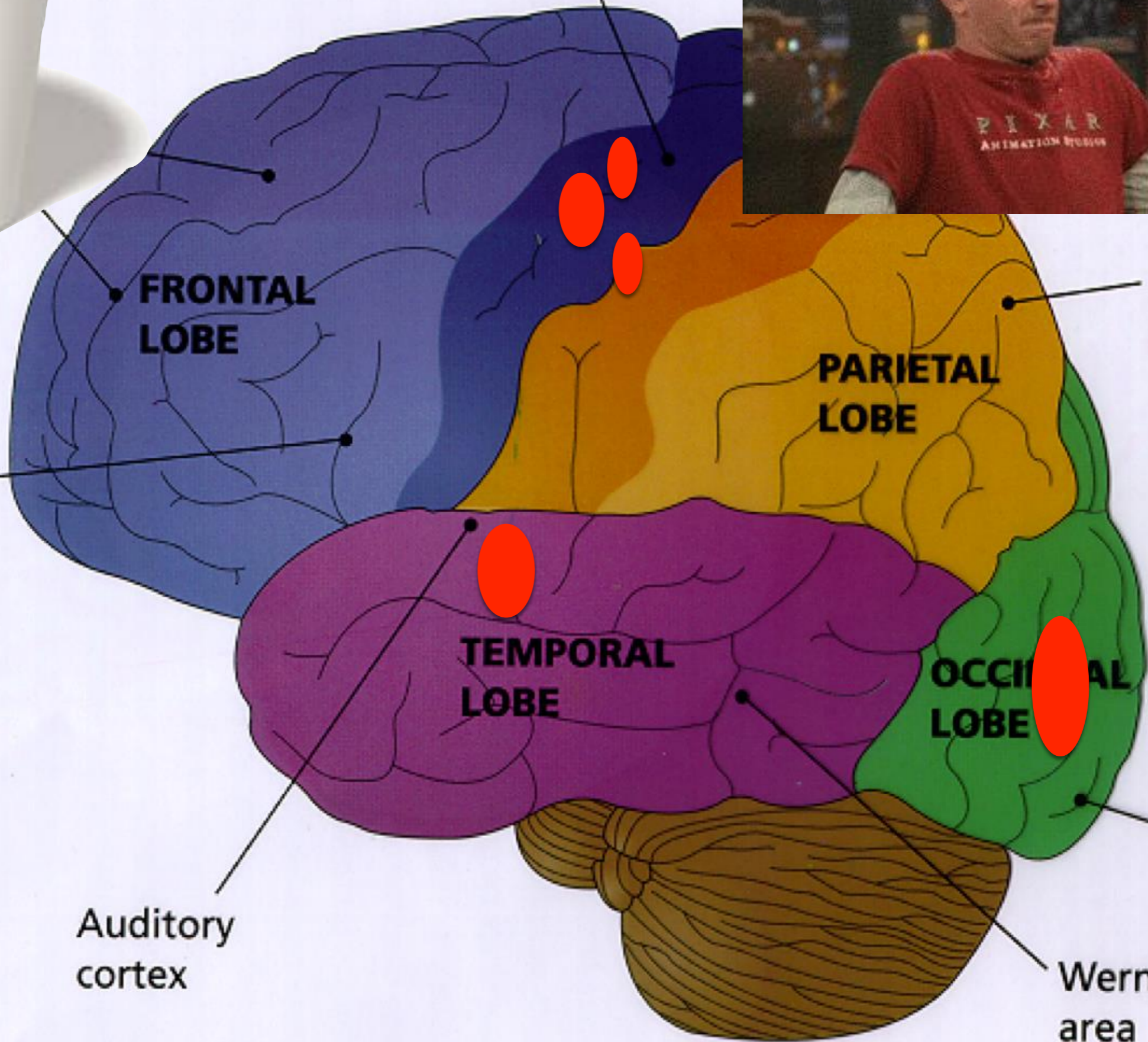
**OCCIPITAL  
LOBE**

Association  
cortex

Auditory  
cortex

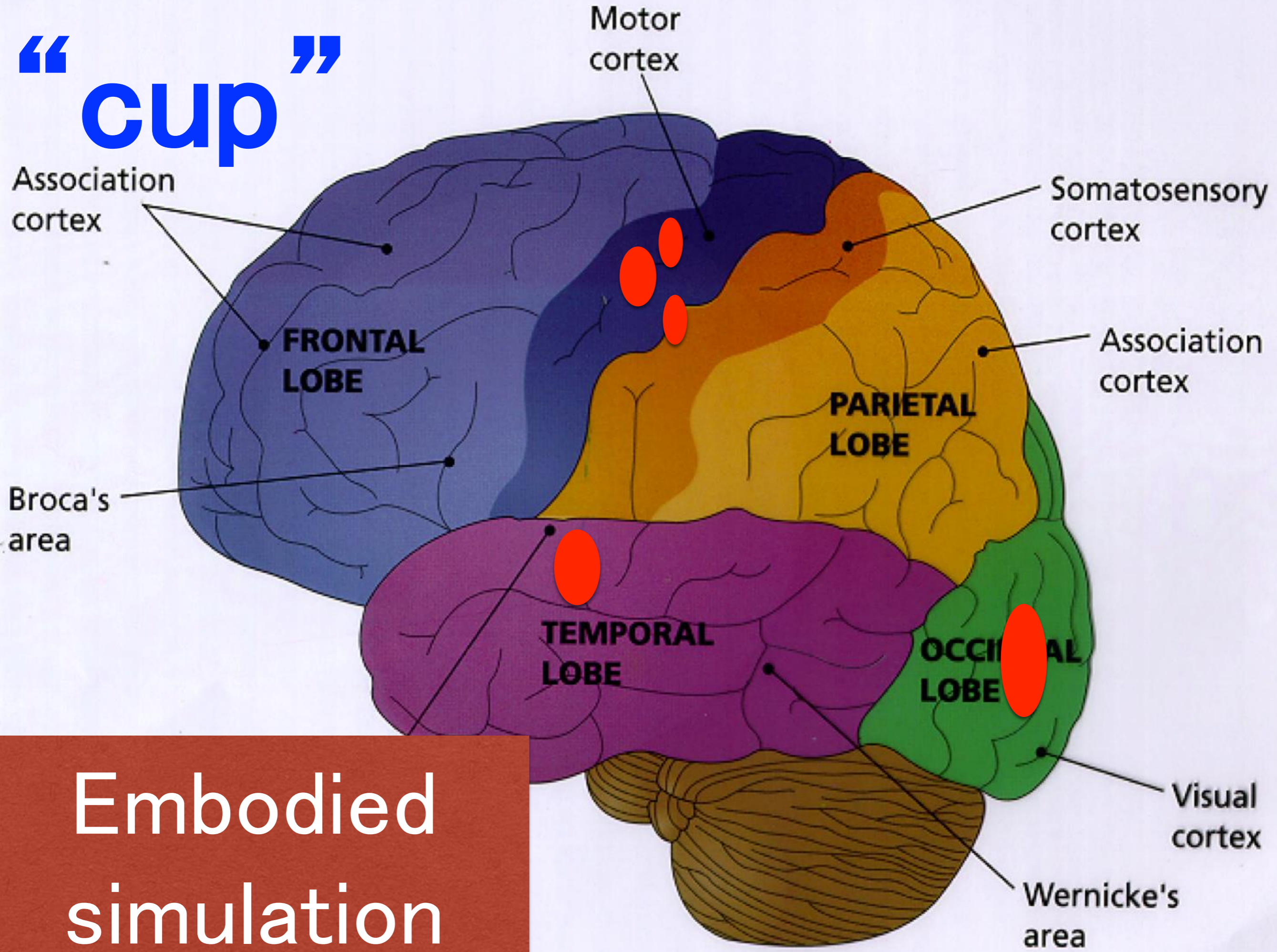
Visual  
cortex

Wernicke's  
area





“cup”



Embodied simulation



**Big question of the day**

**What is it about  
stories?**



“Scratch your nose.”



“Throw the ball.”





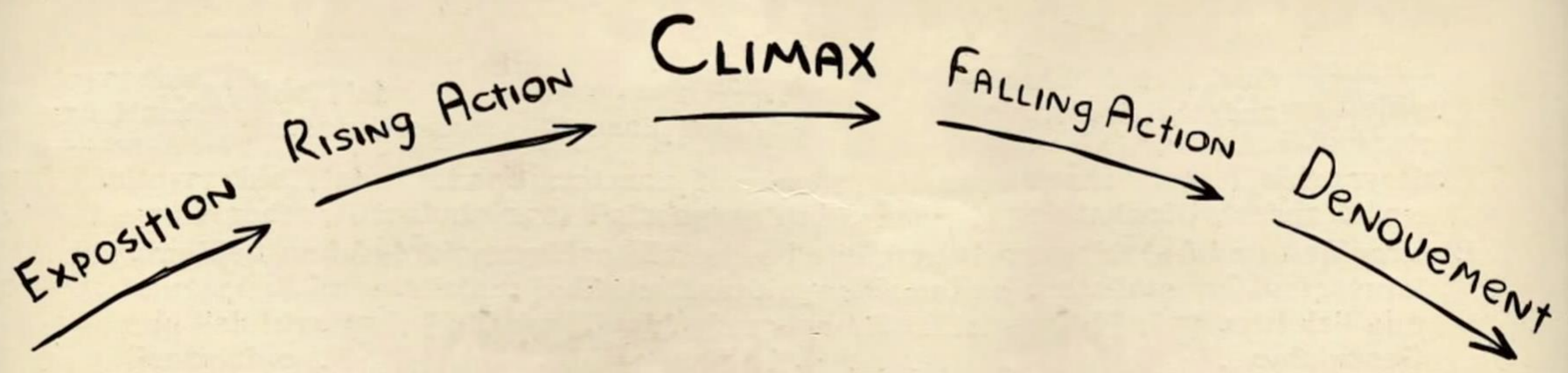


**Big question of the day**

**What is it about  
stories?**









**Big question of the day**

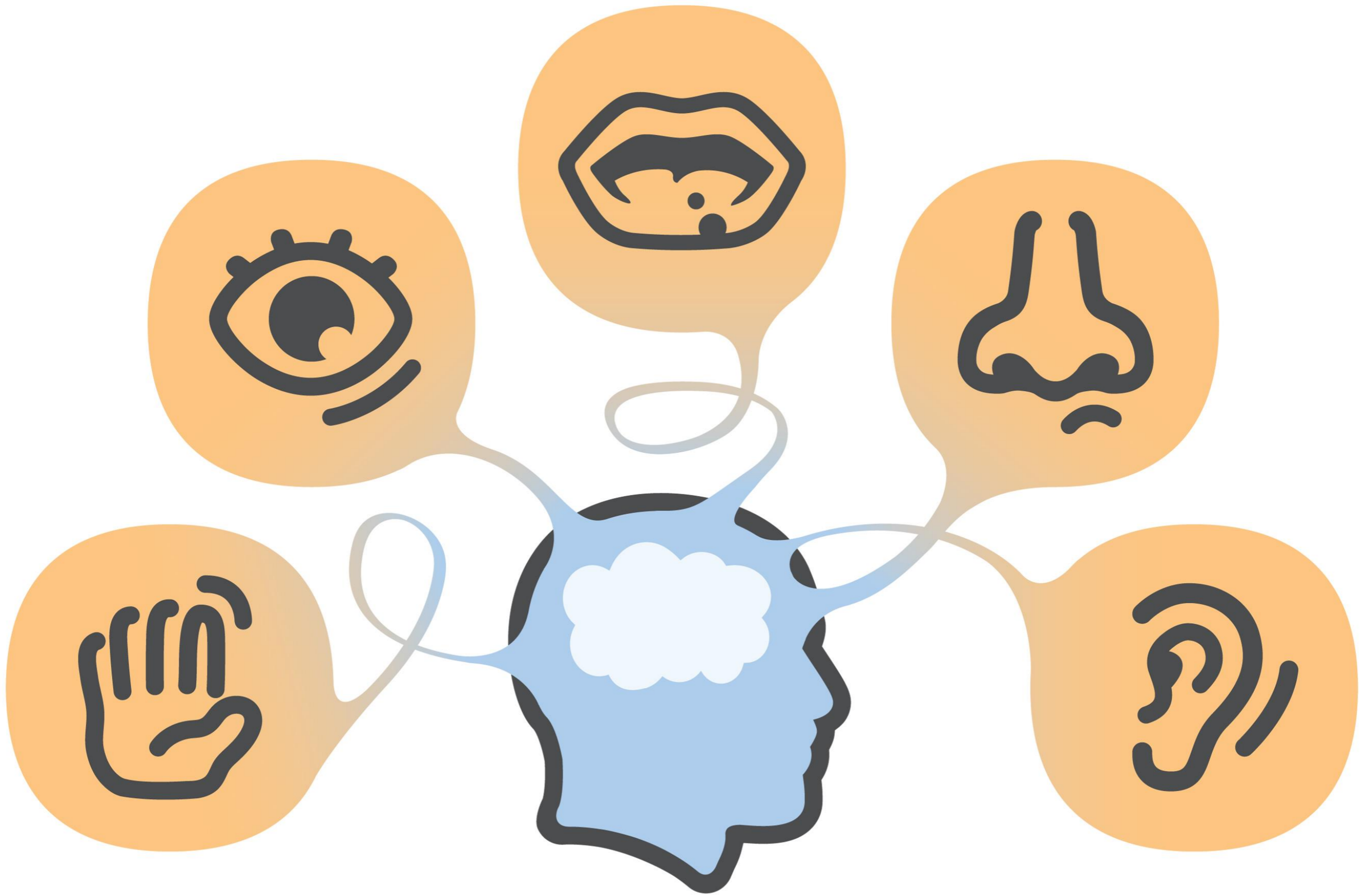
# **Predictive Processing**



# Prediction machine



Cause & effect



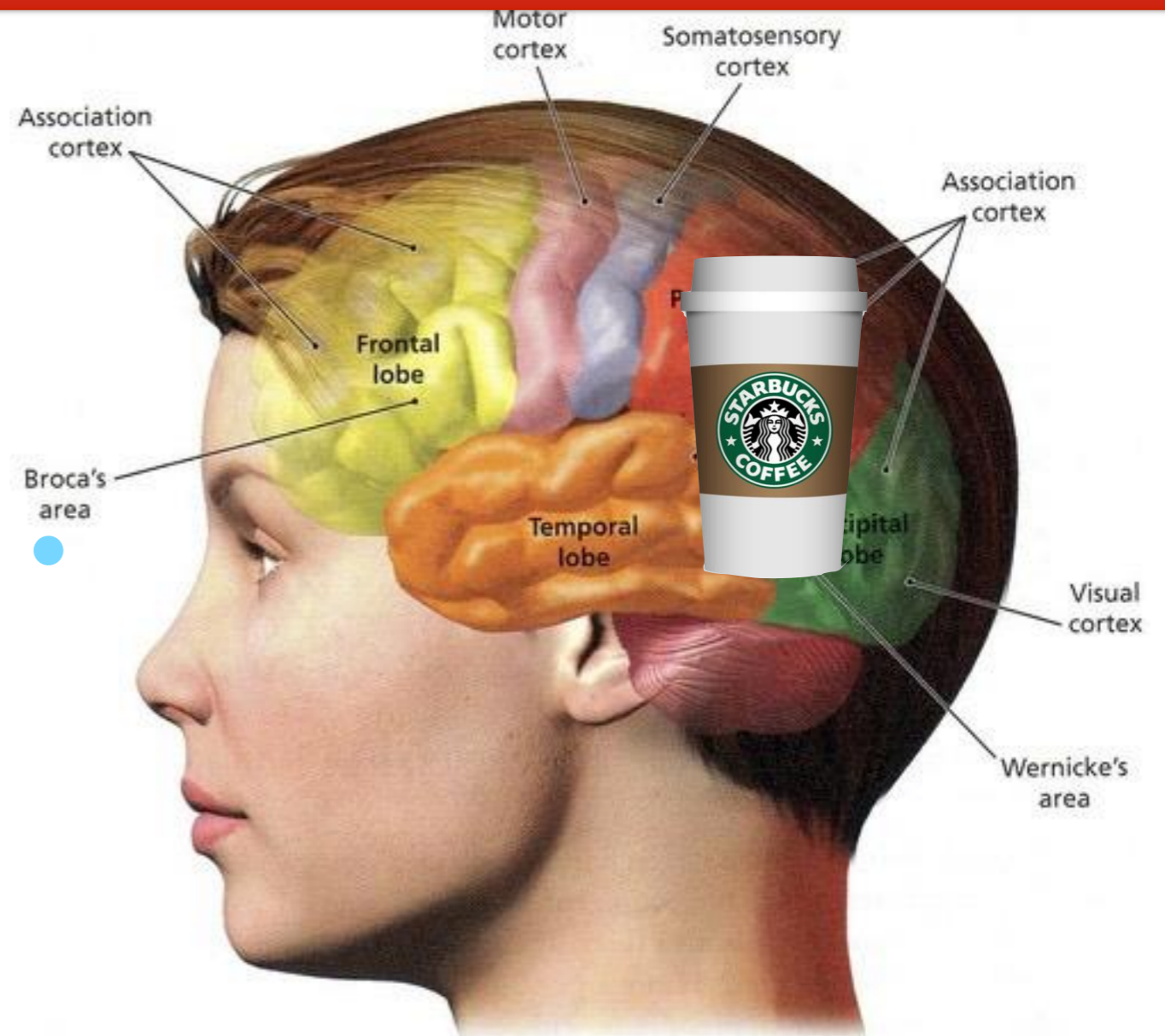
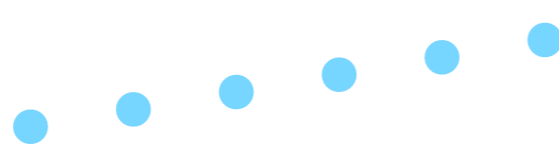




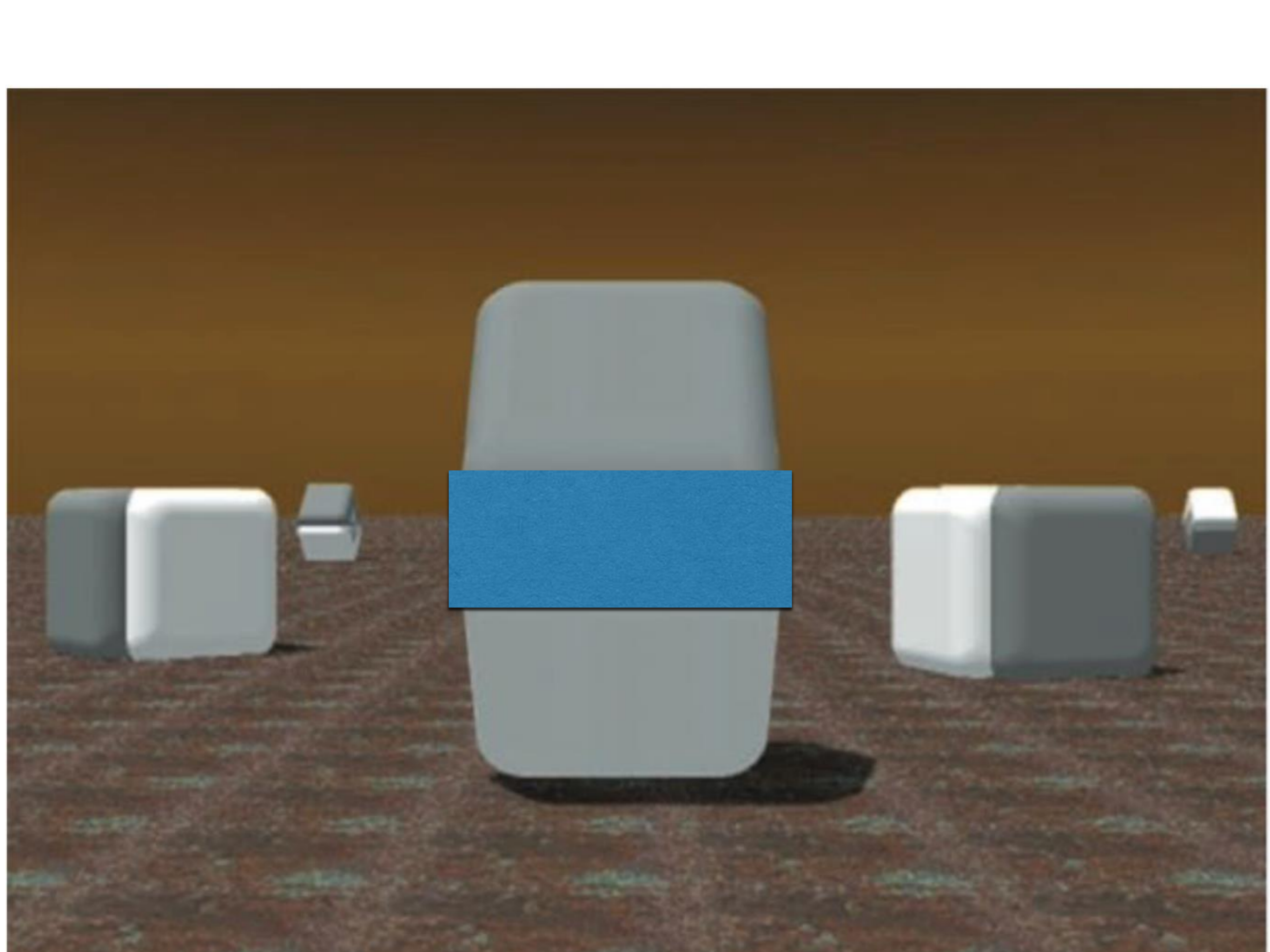
# Processing

We **React** to the world

## 3. Decision







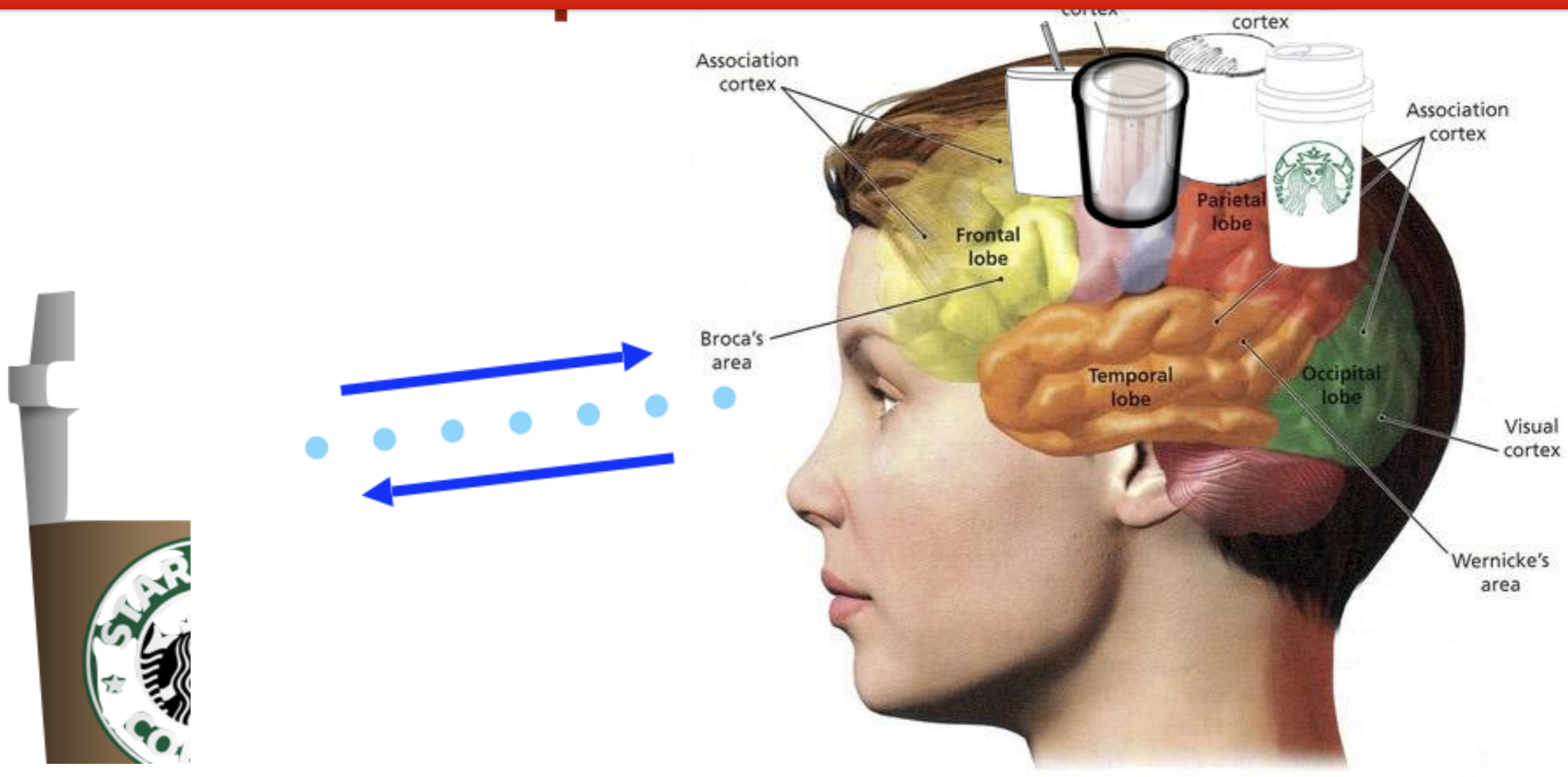


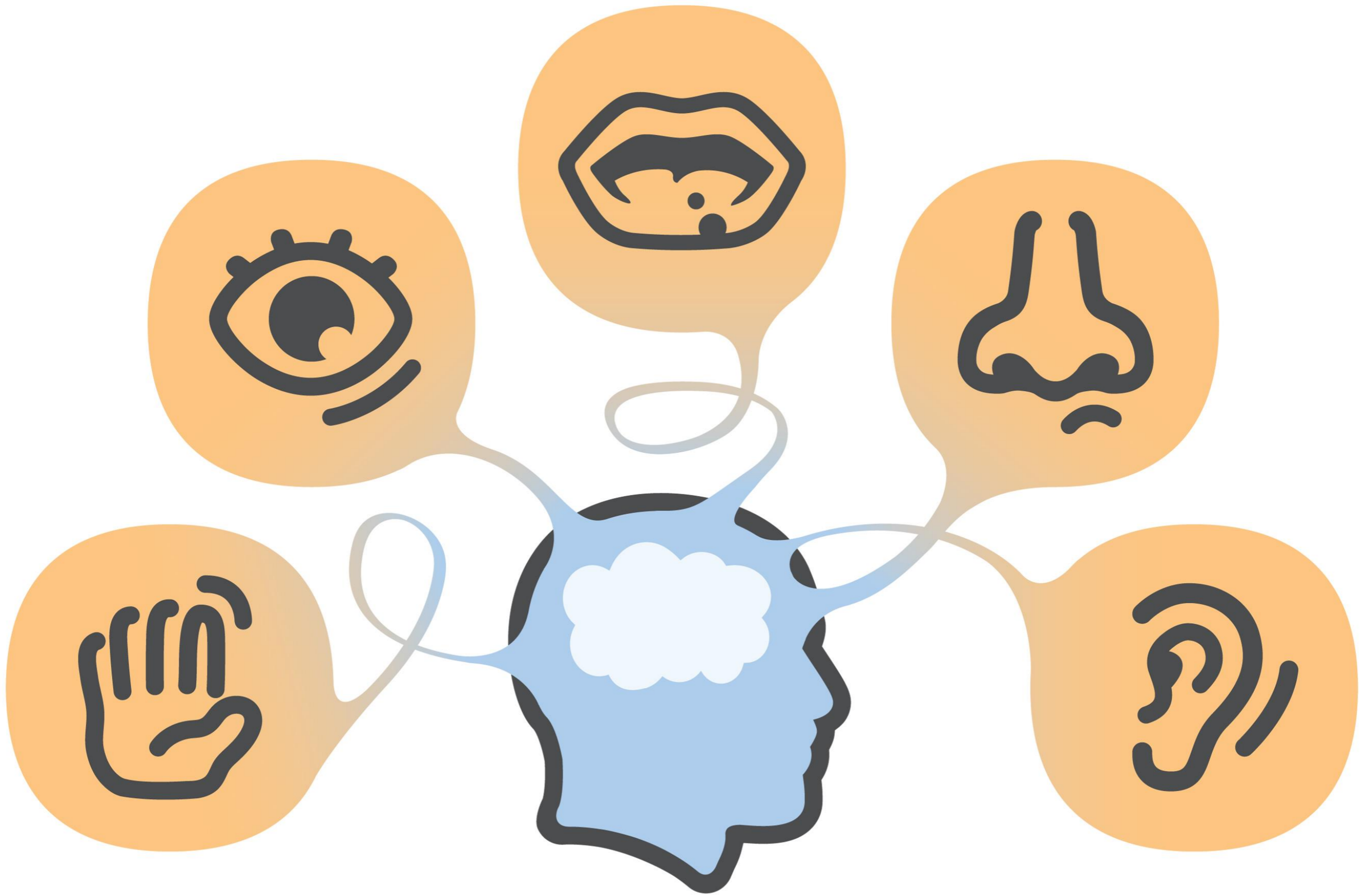




# Processing

We **Predict** the world







# Generative Models

What is this person is saying?



The Constitution Center is at the next  
stop

Language?

# Grammar

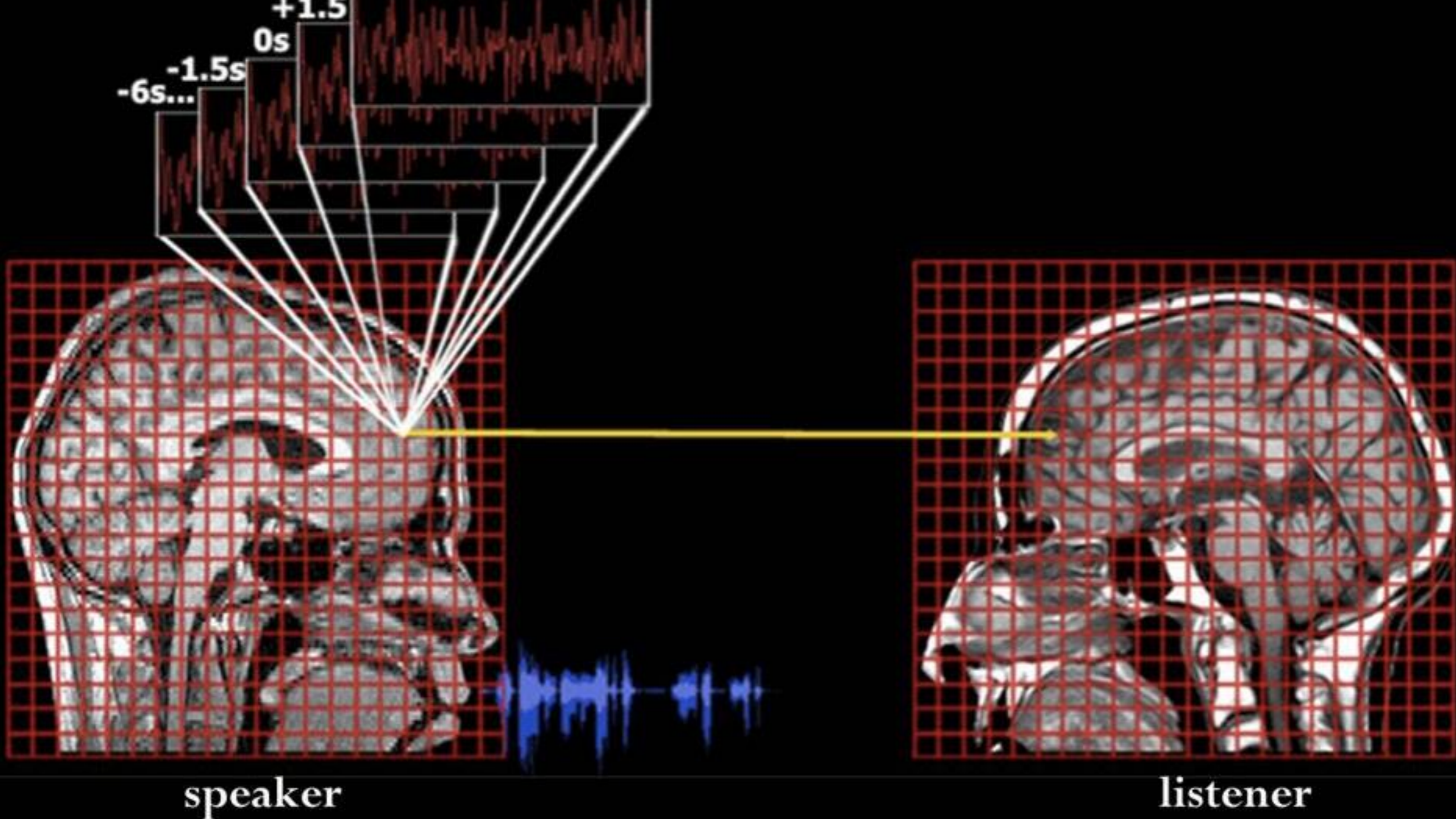
**Hierarchical Generative Models**



Language?

# Simulations

**Hierarchical Generative Models**



# Connecting





# AfterTask

Share an incident that  
changed you as a teacher.

# Stories in Class

STORIES FOR USE IN THE CLASSROOM - adapted from various sources by Curtis Kelly

2

## *The Winner*

Ken was a junior high school student. He loved running. He was very fast. One day, his school had a sports event It was called Special Olympics. Ken ran in the first race and he won. He got a first place ribbon and everyone cheered.

Then, Ken ran in the second race, too. He was winning again, but just before the finish line, he stopped. Then he stepped off the track. Another boy, Billy, won the race.

His mother was surprised. She asked him, "You were winning. Why did you stop?"

Ken replied, "Because I already had a first place ribbon. Billy didn't have one yet."

## *Together Forever*

Isador Strauss was a rich man. He owned a famous store called Macy's. He was taking a trip with his wife on the Titanic, a ship. One night the Titanic hit an iceberg and began to sink. There were only enough rescue boats for the women and children, so most of the men had to stay on the ship. Isador helped women get in the boats. He told his wife, Ida, to get in too, but she refused. She wanted to stay with her husband.

He asked her many times. One time she got in a boat and then she jumped out again. She put her maid in the boat instead. She gave her maid her coat and said "I won't be needing this anymore."

She looked into her husband's eyes and said, "Where



# Digital Storytelling Seminar



Digitales  
Festivals









There is a place called Kashihara Jingu



- He took refuge in NARA park
- "What is the explosion" he thought.
- Someone blasted school.



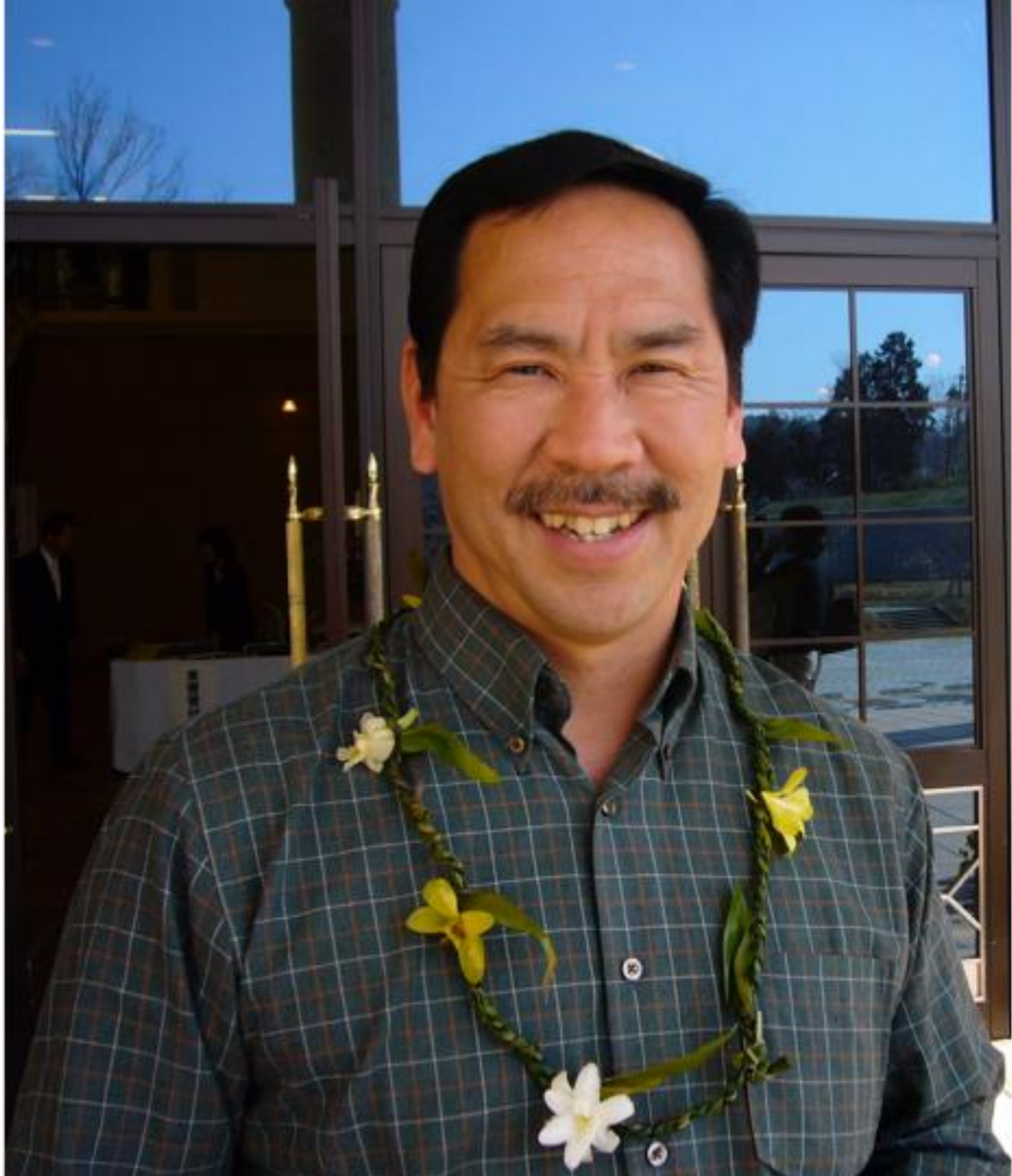




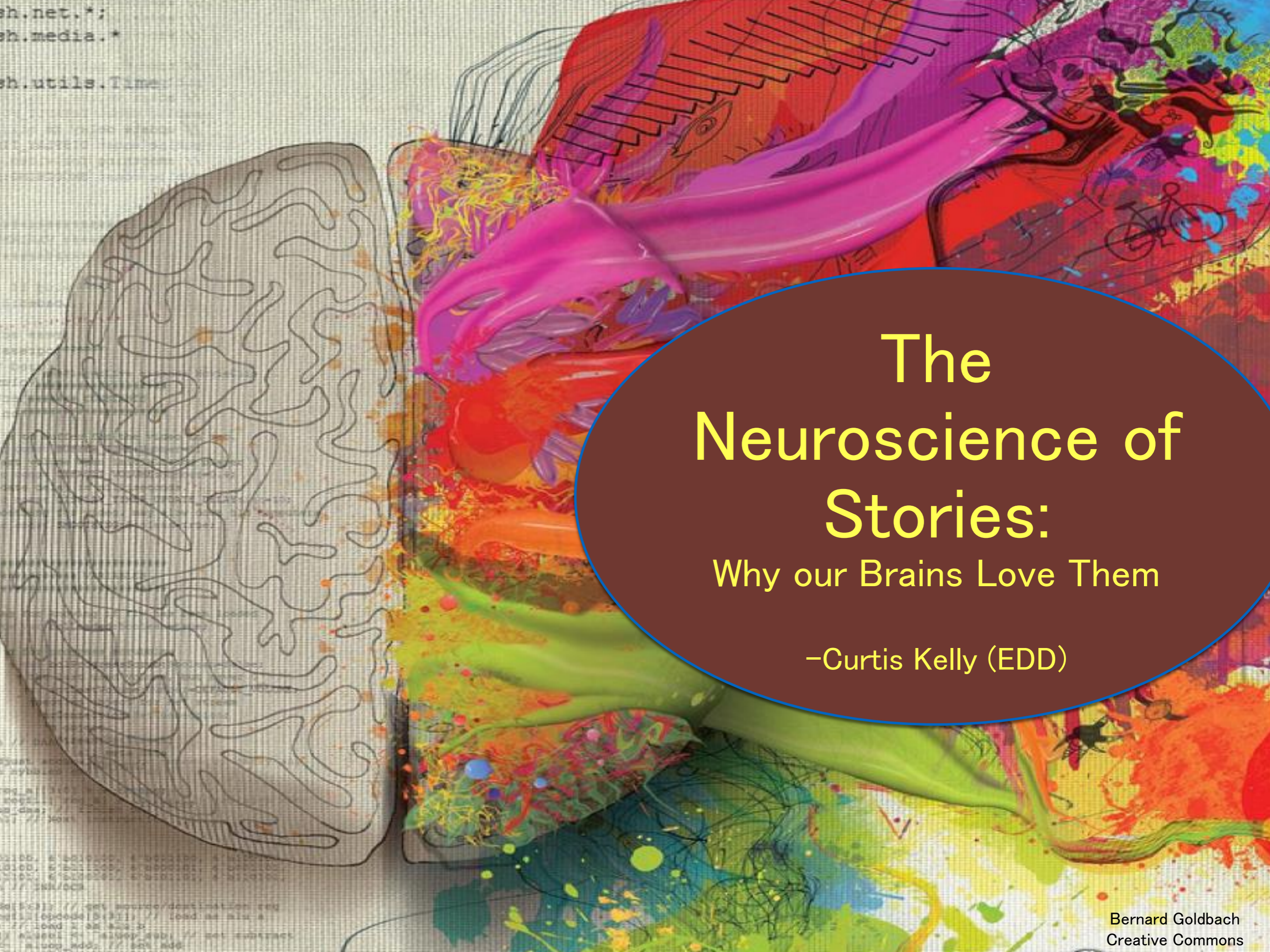
**A little  
superman!!**

Saki Nio









# The Neuroscience of Stories: Why our Brains Love Them

—Curtis Kelly (EDD)



# **The Neuroscience of Stories**

Why our Brains Love them

Curtis Kelly EDD



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