

Saxe, R., & Kanwisher, N. (2003). People thinking about people: The role of the temporo-parietal junction in "theory of mind." *NeuroImage*, 19, 1835-1842.

Experiment 1

Theory of Mind

- Amy and her boyfriend had a fight last night. This morning Amy's roommate bought herself some roses. When Amy came home and saw the flowers, she forgave her boyfriend.
- A woman is walking down the sidewalk. When she is nearly at work she comes to a construction site. A ladder is leaning over her path. She crosses the street to the other side.
- Next year Sarah will be going to college. When her teacher asks her what her plans are for next year, she says she will go to Harvard. Then she knocks her knuckles on the wood table.
- Usually Jonathan leaves his wallet in his drawer, but on Monday he was busy. In the rush, he put his wallet in his pocket. Late that night he looked in his desk drawer. When he saw it was empty, Jonathan called the police. Yesterday Eleanor burned pasta in the pot. She put it in the fridge to throw away later. Michael then cleaned up the pot to make his own dinner. When Eleanor came back, she threw Michael's dinner away.
- Tom and Dan are identical twins. Yesterday the waitress at the café spilled coffee all over Tom and he was very angry. Today Dan is at the cafe and is polite. The waitress feels better about the whole thing.
- A woman is invited to a party on October 31. The invitation says to come dressed up. When she gets there, the women are wearing fancy dresses. Only she is wearing a chicken costume.
- "A pornographic affair" is a French film about an older couple who fall in love and then go their separate ways. Many more teenage boys rent this film than most artistic French films.
- Yesterday a kid visited the museum and spilled juice on the white wall in room 2. Today a group of art connoisseurs is visiting. One says that he admires the vibrant postmodern piece in room 2.
- A man breaks into a mansion. Before taking off, he decides to relax and watch television. Seeing the broken door, a second burglar climbs into the mansion. He sneaks up on the man by the television.
- Phil and Anne have been set up on a blind date. Phil arrives early and sees a woman alone at a table. He sits down and makes conversation. Anne arrives, waits a while, and leaves again.
- A boy is making a paper mache project for his art class. He spends hours ripping newspaper into even strips. Then he goes out to buy flour. His mother comes home and throws all the newspaper strips away.

Mechanical Inference

- The Red Sox are certainly the stronger team, but last night the pitcher hurt his arm. Also, the Yankees have got the home team advantage. So in the end, the stronger team is losing.
- There is a pond behind our cottage in Maine. In the spring the ducks swim back and forth by the docks. In the winter, the pond freezes and the ducks' footprints are visible there.
- The beautiful ice sculpture received first prize in the contest. It was very intricate. Unfortunately, the temperatures that night hit a record high for January. By dawn, there was no sculpture.
- A pot of water was left on low heat yesterday in case anybody wanted tea. The pot stayed on the heat all night. Nobody did drink tea, but this morning, the water was gone.
- The bridge looked perfectly stable and up-to-date. Sadly, all it took was the right combination of wind and people marching in step. The bridge began to sway and then the whole thing crumpled like paper.
- In the studio it looked pretty silly: two toy space shuttles sitting in front of a blue screen. But the special effects were actually well done. When it was shown on TV, the impression was very realistic.
- A figurine was attached to the bow of this yacht before it sailed across the Atlantic. However, the screws that attached the figurine were made of iron, and didn't last. The figurine fell off before the crossing was complete.
- As the car drove further north, some interesting changes were evident. The trees in the arctic tundra were small and sparse. The snow was thick and permanent. After a few hours, even the magnetic compass pointed the wrong way.
- For an hour the colors of the sunset have been fading from the sky. Slowly it is becoming darker. Now finally night has come. Since there is no light pollution here, the big dipper will soon be clearly visible.
- The night was warm and dry. There had not been a cloud anywhere for days. The moisture was certainly not from rain. And yet, in the early morning, the long grasses were dripping with cool water.
- My back yard is surrounded by large maple trees. In the summer the leaves keep the yard very private from prying neighbors. But in winter the protection is gone: all of our neighbors can see right into the yard.
- Low tide came at noon today. The beach by the ocean was all sand and rocks around lunchtime. Dogs and donkeys wandered along it. By five o'clock, the whole thing had disappeared under the waves.

Human Action

- Joan and her neighbor had a big fight last night. This morning Joan told her friend Andrea about the fight. The two of them commiserated and ate chocolates together.
- Maya and Rina are sisters. Now that they are older they get along well together. They go out to dinner at restaurants and talk about life. When they were living at home together, they would fight more often.

- My friend Mary was invited to a party for New Year's eve. The party was at a fancy hotel. There were crystal chandeliers. It was the first time she wore the beautiful dress that her mother made for her.
- "Before the rain" is a film about modern Macedonia. The scenery is stunning and the plot is very complex. It is a story about war and religion and journalism, all in Macedonian. Not many Americans have heard of this film.
- Next week a whole group of school children will visit this exhibit about Egyptian art. The curators are working hard to develop a curriculum to make the ancient art seem vibrant and exciting to ten year olds.
- Two burglars have broken into that house. These two always work together. It is easier to carry the large furniture with two people, even though it means that they will have to share the payoff.
- Dianne and Stewart have been married for twenty-seven years now. They have three children. They still do like to go on vacation together. This year they will go to Cuba for three weeks.
- Benjamin is studying to be an electrical engineer. In his first year of university he had to design a bridge. He made minor errors. When they tested the model, it collapsed.
- Jane is walking to work this morning through a very industrial area. In one place the crane is taking up the whole sidewalk. To get to her building, she has to take a detour.
- This girl is planning to go to college next fall. She visited many colleges all over America and decided to go to MIT. MIT has a reputation as a good place to learn mechanical engineering.
- Christopher always leaves his keys in his pant pocket. This way when he is rushing around he does not have to stop to look for them. When he arrives late for work, he fumbles in his pocket, finds his key and lets himself in.
- Yesterday Dianne tried to cook dinner for some friends but it was disgusting. They took one look and decided to order pizza. She put the pot in the fridge. Later, when she washed it, the food was glued to the pot.

Nonhuman description

(see below)

Experiment 2

False Belief

In fact there was

someone in the lab no one in the lab

.... that night

- When this photograph was taken, the boy in it was two meters away from the camera. The Eiffel tower is beside the boy in the photo; it was about 600 meters away.

In 'real life' the boy is

bigger smaller

...than the Eiffel tower.

- The colour printer cartridge just ran out of blue ink, but kept printing without it. It printed a picture of a healthy grass lawn from that screen over there.

In the original picture, the grass in the image is

green yellow

- This part of the garden is supposed to be reserved for the roses; it's labeled accordingly. Recently the garden has run wild, and dandelions have taken over the entire flower bed.

According to the label, these flowers are

roses dandelions

- The biography describes the room as it was in 1965. Originally the walls were covered in dark wallpaper. By 1965 the paper had been stripped and replaced with cream paint.

The biography says that the room was

light dark

Desire

- Andrew was playing darts. He needed three more points to win, so he aimed for the three-point target on the periphery. Andrew's not very good at darts; he accidentally hit the 8-point bulls-eye.

Andrew aimed to get

3 8

... points.

- Jack wanted to watch Law & Order on Wednesday night, but his girlfriend wanted to watch a taped episode of West Wing. Since he chose the movie they watched Tuesday, on Wednesday they watched West Wing.

Jack wanted to watch

Law & Order West Wing.

- At the restaurant, Jane ordered a corned beef sandwich with tomatoes but no butter or mayonnaise. When the sandwich came it had corned beef, tomato, and mayonnaise. She sent it back.

The sandwich arrived

without with

... mayonnaise

- Nancy was planning to travel in Italy in July, but her summer is very crowded. She is going to Germany and Africa in June and Alaska in August. She cancelled the July trip.

In July Nancy wanted to go to

Alaska Italy.

- Scott wanted a red car for his eighteenth birthday, but the insurance is extra high for red cars with young drivers. In the end he got a blue Mazda.

The car Scott bought was

blue red.

- For her fiftieth, Margaret wanted to go out to dinner with her whole family, but her husband James was on-call, and her daughter Maggie was feeling sick, so they ate at home

On her birthday Margaret ate dinner

at home at a restaurant.

Physical People

- Jason is wearing blue jeans, white running shoes, a grey scarf and matching sweater. He has thick glasses on his long hooked nose, and a long blond beard on his chin.

The scarf Jason is wearing is

blue grey

- Emily was always the tallest kid in her class. In kindergarten she was already over 4 feet tall. Now that she is in college she is 6'4". She is a head taller than the others.

In kindergarten Emily was over

4 ft

6 ft

... tall

- Harry looks just like a math professor. He wears dark old cardigans with holes in the elbows, corduroy trousers and brown loafers over green argyle socks.

The shoes Harry wears are

brown

green

- Dina's hair is long and wild. It runs in black curls all the way down her back and gets caught in her belt and her brown backpack, and in other people's buckles.

The colour of Dina's hair is

black

brown

- Christine is much too thin. Her knee bones stand out from her legs and her knuckles are swollen like an old woman's. Only her smooth cheeks show that Christine is still a teenager.

Because she is thin, Christine's

knees

knuckles

... are swollen

- Each girl wears her uniform slightly differently. Blair wears her shirt untucked. Annette leaves one button undone, and refuses to pull up her knee socks to regulation height.

Annette wears her uniform shirt

unbuttoned

untucked.

- JP is ambidextrous. He wears his watch on his right hand because he writes with his left hand. However, he throws balls and plays golf with his right hand, and kicks with his left leg.

JP wears his watch on his

right

left

... hand.

- Alana has her make-up permanently tattooed on her face. She has navy blue eyeliner around her eyes and bright red lip-liner on her lips. This tattoo make-up never fades or washes off.

Alana's tattooed eyeliner is

blue

red

- Dave dresses to match the vehicle he is driving. In his Mercedes he wears a tweed three piece suit and button-down shirt. On his motorcycle, he wears black leather trousers and tight T-shirts.

When he drives his car, Dave wears

leather

tweed

... jackets.

- Missy and Lisa are both on the rowing crew for their high school. Missy is a rower and is tall and muscular in her arms, legs and back. Lisa is the cox. She doesn't row, so she must be short and light.

Missy is

short

tall

- Gigi looks a little like Marilyn Monroe. She has blond curly hair, big eyes and a mole on her right cheek. Gigi also has a beautiful figure and a slow husky voice.

Gigi's mole is on her

left

right

... cheek.

- Evan wore glasses his whole life. When he was younger he had thick brown tortoise-shell frames. In his thirties Evan's glasses were electric blue. Now he is fifty and wears contacts.

In his thirties Evan's glasses frames were

brown

blue.

Nonhuman Description

- The African elephant is much larger than the Indian elephant, and its ears are much bigger too. It uses its large ears like a giant fan to keep cool.

The African elephant is

larger

smaller

- Light from the sun is a combination of seven colors - violet, indigo, blue, green, yellow, orange and red. As the sun's rays strike drops of rainwater in the sky, they are bent, and separate into different colors.

Light from the sun has

six

seven

... colors.

- Saturn is like a smaller version of Jupiter. It is encircled by a beautiful series of rings made of ice-covered particles of rock. The rings may be fragments of a former moon.

Saturn's rings look white because they are

ice

rock.

- The name 'orangutan' means 'man of the wood'. Orangutans live in the tree tops of Asian forests. They have reddish hair, long arms and no tails. Their hands are very similar to human hands.

Orangutan's hair is

reddish

yellowish.

- The most common bird to be found in towns in Britain is the house sparrow. The house sparrow is small and light brown, with darker wings and tail. Also it has a dark stripe across its eye.

The house sparrow's wings are

lighter

darker

... than its body.

- Nine planets and their moons, plus various lumps of debris called asteroids and comets, make up the sun's solar system. The earth is one of four rocky planets in the inner solar system.

The solar system has

four

nine

... planets.

- The Venus flytrap is one of the rare carnivores among plants. It lives in nutrient-poor soil; its rich protein comes from digesting insects. It has short hairy reddish leaves.

Venus flytraps live in soil that is nutrient

rich

poor.

- Loons are adapted for swimming, not flying. They have heavy heads and webbed feet on powerful legs. A chain of white marking circles their long black necks.

The markings around the neck of a loon is

white

black.

- In Precambrian rock, the only fossils are unicellular organisms. The largest fossils in Jurassic rocks are the fossils of the dinosaurs. Dinosaurs have been extinct for sixty-five million years.

The largest fossils in Precambrian rock are

dinosaurs

unicellular.

- The 'face' on the moon is the result of volcanic and impact craters which never erode. On the earth craters erode in the rainfall. In an eclipse, the moon passes between the earth and sun.

Craters on the moon never erode because the moon has no

sun

rain.

- Komodo dragons are lizards that live in Indonesia. Their skins are tough, dry and grey, but their long tongues are multi-coloured. They hold their heavy body just above the ground.

The tongue of a Komodo dragon is

grey

multi-colored.

- In the warm season Australian beaches are closed because of box jelly fish. Box jelly fish are pale blue, almost transparent, and drift with the tide. Any contact with their tentacles is excruciatingly painful.

Box jelly fish are pale

green

blue.