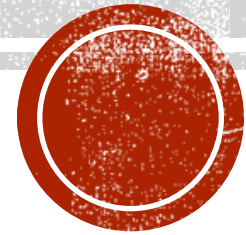


# ACTIVITY PROBLEMS



Here are some sentences in **Hindi**, a language spoken in India.

**Jute laal hain.**

The shoes are red

**Jute safed hain.**

The shoes are white.

**Kameez laal hai.**

The shirt is red.



How would you say “**The shirt is white**” in Hindi?

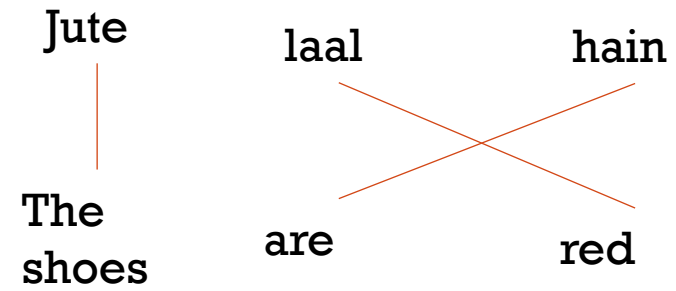


## Phrase Alignment

Jute  
The shoes

laal  
are

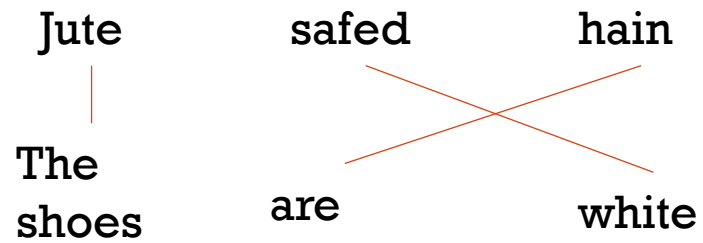
hain  
red



Jute  
The shoes

safed  
are

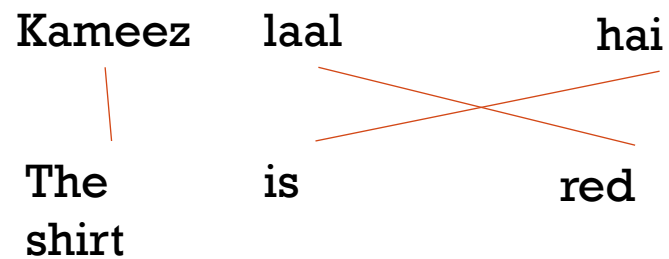
hain  
white



Kameez  
The shirt

laal  
is

hai  
red



## Phrase Translation

The shirt

Kameez

is

hai

white

safed

## Ordering

Kameez safed hai

How does Google Translate work?



Here are some sentences in **Hindi**, a language spoken in India.

**Chai dije.**

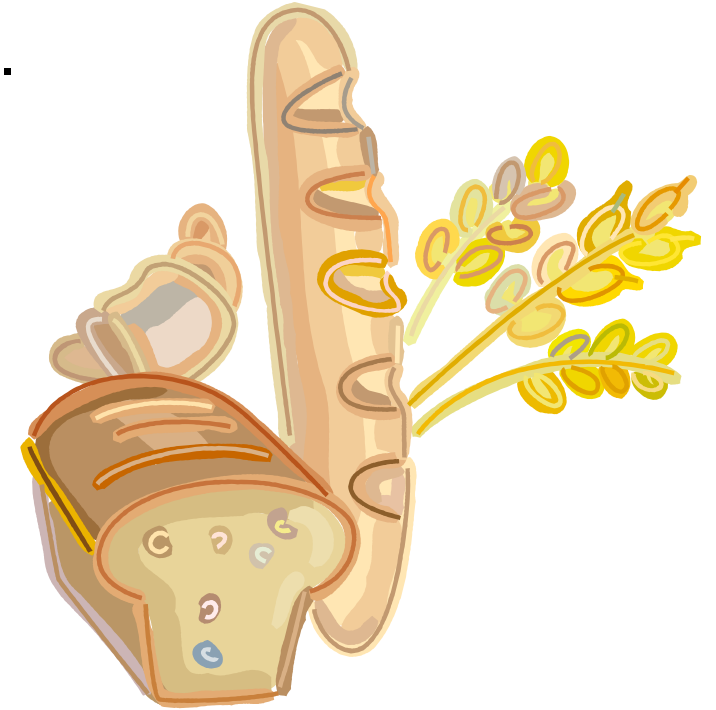
Tea, please.

**Roti dije.**

Bread, please.

**Chawal dije.**

Rice, please.



How would you say “**Water, please**” in Hindi?

Hint: ‘water’ = **pani**



Here are some sentences in **Hindi**, a language spoken in India.

**Char matchliyan hain.**

There are four fish.

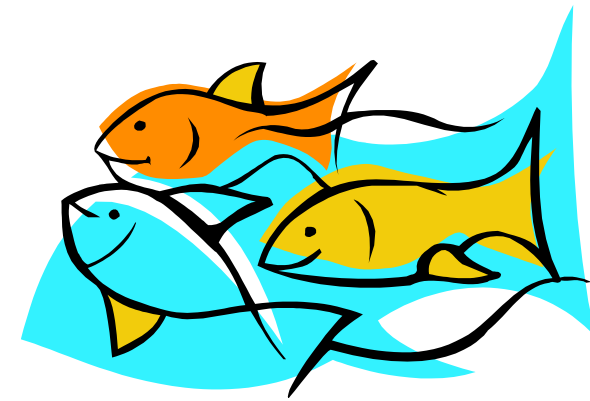
**Char ladkiyan hain.**

There are four girls.

**Che matchliyan hain.**

There are six fish.

How would you say “**There are six girls**” in Hindi?



Here are some sentences in **Japanese**. Just like in America, Japanese schools have many different levels.

**Emi wa chuugakusei desu.**

Emi is a middle school student.

**Ken wa daigakusei desu.**

Ken is a high school student.

**Sayuri wa shougakusei desu.**

Sayuri is an elementary school student.

If the Japanese word for “I” is **watashi**, can you say what kind of student you are?



Here are some sentences in **Japanese**.

**Ritsu wa hana ga suki desu.**

Ritsu likes flowers.

**Chihiro wa hana ga suki jyanai.**

Chihiro doesn't like flowers.

**Asako wa ame ga suki desu.**

Asako doesn't like candy.

Can you figure out what this Japanese sentence means?

**Mizuho wa ame ga ski desu.**



Here are some sentences in **Japanese**.

**San ji desu.**

It is 3:00.



**Go ji han desu.**

It is 5:30.



**Roku ji desu.**

It is 6:00.

You need to know what time it is, and your friend Erika just told you – in Japanese!  
Can you figure out what she said?

**“San ji han desu.”**





Here are some sentences in **Spanish**.

**El perro duerme.**

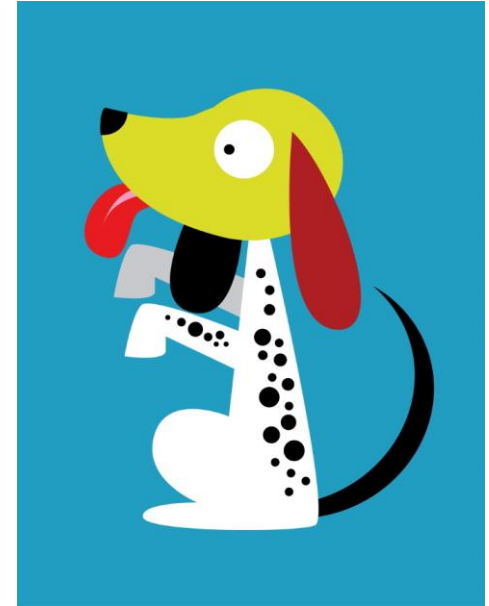
The dog sleeps.

**El perro come.**

The dog eats.

**El gato duerme.**

The cat sleeps.



Can you figure out what this Spanish sentence means?

**El gato come.**



Japanese uses a system of letters known as **kanji**. Each kanji has a specific meaning and pronunciation(s), and kanji can be combined to make new meanings.

今 = “now”

日 = “day”

What do you think 今日 means?



Japanese uses a system of letters known as **kanji**. Each kanji has a specific meaning and pronunciation(s), and kanji can be combined to make new meanings.

中 = “middle”

学 = “school, learning”

What do you think 中学 means?



Japanese uses a system of letters known as **kanji**. Each kanji has a specific meaning and pronunciation(s), and kanji can be combined to make new meanings.

外 = “outside”

国 = “country”

What do you think 外国 means?



Japanese uses a system of letters known as **kanji**. Each kanji has a specific meaning and pronunciation(s), and kanji can be combined to make new meanings.

日本 = “Japan”

語 = “language”

What do you think 日本語 means?



Japanese uses a system of letters known as **kanji**. Each kanji has a specific meaning and pronunciation(s), and kanji can be combined to make new meanings.

食<sup>二</sup>べ<sup>一</sup> = “to eat”

物 = “thing”

What do you think 食<sup>二</sup>べ<sup>一</sup>物 means?



Fill in the blanks so that both phrases make sense!



CREDIT \_\_\_\_\_ GAME

ICE \_\_\_\_\_ CHEESE

COUCH \_\_\_\_\_ CHIP



# SPEECH RECOGNITION: WHICH SEQUENCES OF WORDS ARE MORE PROBABLE?

- How to recognize speech.
- How to wreck an ice peach.
- How to wreck a nice beach.
  
- I sent out a request to my colleagues for an example from a real speech recognition or MT system.





Fill in the blanks so that both phrases make sense!



BASEBALL \_ \_ \_ CAVE

POOL \_ \_ \_ \_ \_ HAT

BOOK \_ \_ \_ \_ \_ UP



Fill in the blanks so that both phrases make sense!



MOVIE \_\_\_\_\_ PARK

AIR \_\_\_\_\_ HERO

ROCK \_\_\_\_\_ GAZING



**Maori** is a language spoken by the aboriginal (native) people of Australia. Some words in Maori, called **loanwords**, are “borrowed” from English.

Can you match each loanword to its picture?

tuuru

wuuru

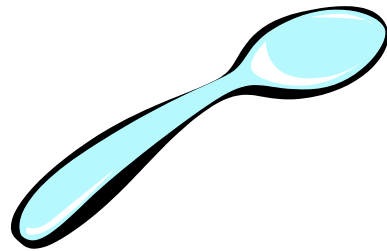
puutu

puunu

**A**



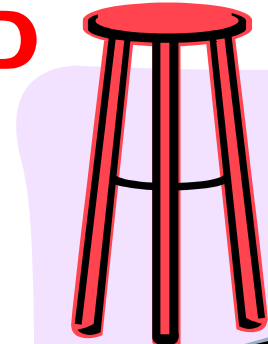
**B**



**C**



**D**



# HOW ARE LANGUAGES DIFFERENT FROM ENGLISH?

- Maori doesn't have consonant clusters like "st" in "stool" or "cr" in "cream".
- Maori consonants are p, t, k, h, m, n, r, ng, and wh.
  - But there is "ch" on the next slide.
- Maori words can begin with "ng" as in "ngaa" which can mean "the (plural)" or "breath".



Some words in **Japanese**, called **loanwords**, are “borrowed” from English.

Can you match each loanword to its picture?

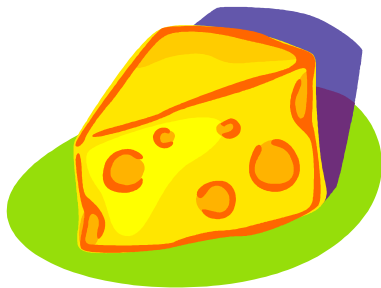
takushii

aisu kuriimu

pengin

chiizu

**A**



**B**



**C**



**D**



**Maori** is a language spoken by the aboriginal (native) people of Australia. Some words in Maori, called **loanwords**, are “borrowed” from English.

Can you match each loanword to its picture?

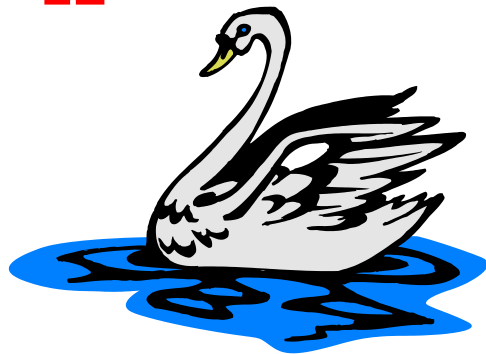
haama

haapa

waana

maati

**A**



**B**



**C**



**D**



Each of these newspaper headlines can have **two different meanings!**

Can you figure out what they are?



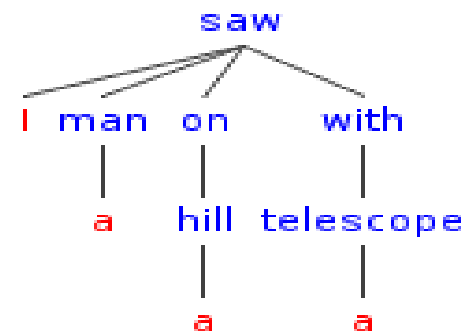
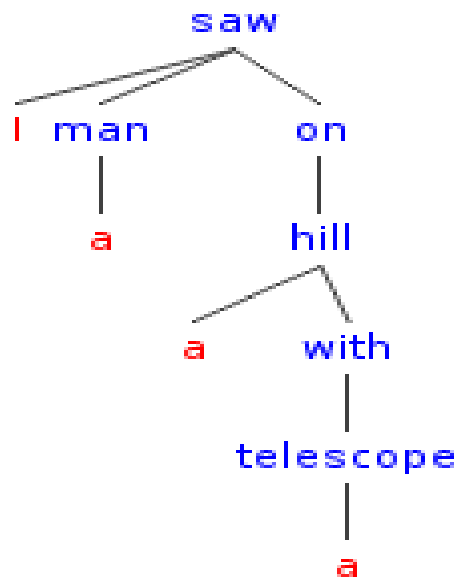
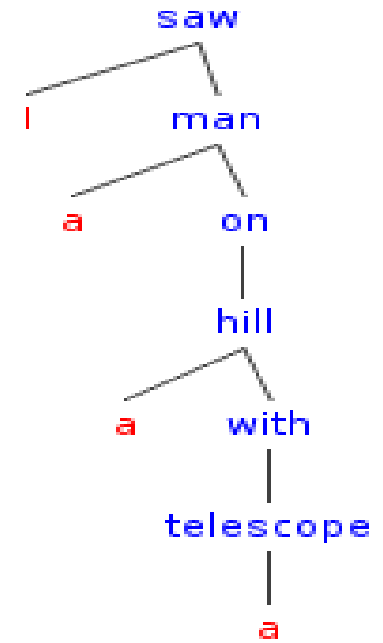
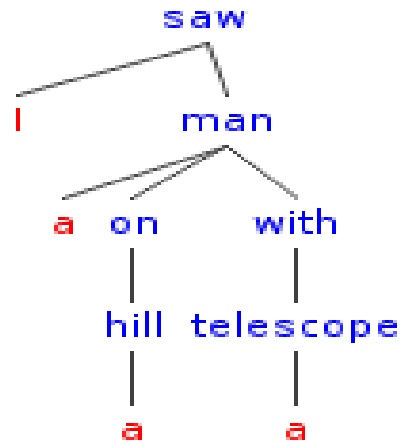
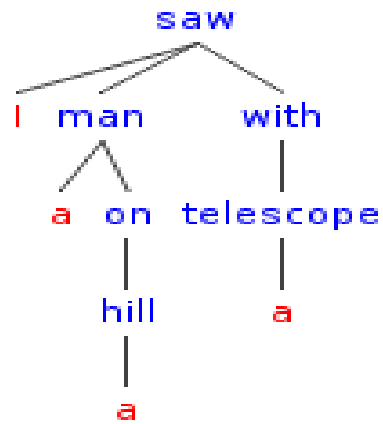
**A. IRAQI HEAD SEEKS ARMS**

**B. STOLEN PAINTING FOUND BY TREE**

**C. KIDS MAKE HEALTHY SNACKS**



# Ambiguity is combinatoric



I saw a man in a park on a hill with a telescope?





**Professor Word** has invented a machine to **read the newspaper aloud**, but it isn't working right!

This ad it just read doesn't make any sense...

“Do you love docks? We l l tick-tock, time is running out Sor dock world's spring sale!

We have watches, grandSather docks, and so much more!

Whether you are a dock col lector or just buying one Sor Sun, stop by dock world today!”

Can you figure out which **THREE MISTAKES** the machine is making?



# OPTICAL CHARACTER RECOGNITION

- Converts pictures of old books into searchable text. But it makes some mistakes.



You are in **ANNINO** Station in Moscow, Russia. You need to get off at the “**MITINO**” stop. Can you figure out which train to board just by looking at these **Russian** signs?

Hint: The sign for ANNINO is **АННИНО** in the Russian alphabet!

1



2



3



4





Can you change

**BOB'S RAFTS**

to

**BARB'S CRAFTS**

in just **FOUR** moves?!



**Hint:** one move = remove, add, or move a letter



# THIS IS HOW YOUR SPELL CHECKER WORKS!

This is how your spell checker works.



# THEYOUTH THEVENT

- How many ways can you break this into words?
- Some languages like Chinese and Japanese are written without spaces.
- I'm waiting for a Chinese example from a student.

