

Generating Funny Dialogue between Robots based on Japanese Traditional Comedy Entertainment

☆ Ryo Mashimo	Konan University(Japan)
Tomohiro Umetani	Konan University(Japan)
Tatsuya Kitamura	Konan University(Japan)
Akiyo Nadamoto	Konan University(Japan)

Background



AIBO(SONY)



ASIMO(HONDA)

The rapid progress of robotics has supported the research and development of robots of many kinds. Many entertainment robots have been developed such as AIBO and ASIMO.



It is difficult for robots to communicate smoothly with humans.

Background

Kanda et al described the way in which people feel friendly to robots when they just watch dialogue between robots.



We focus on the dialogue between robots.

We create entertainment robots to amuse people by their dialogue.



It is not attractive contents for users in a usual dialogue between robots.

Background



'Manzai'

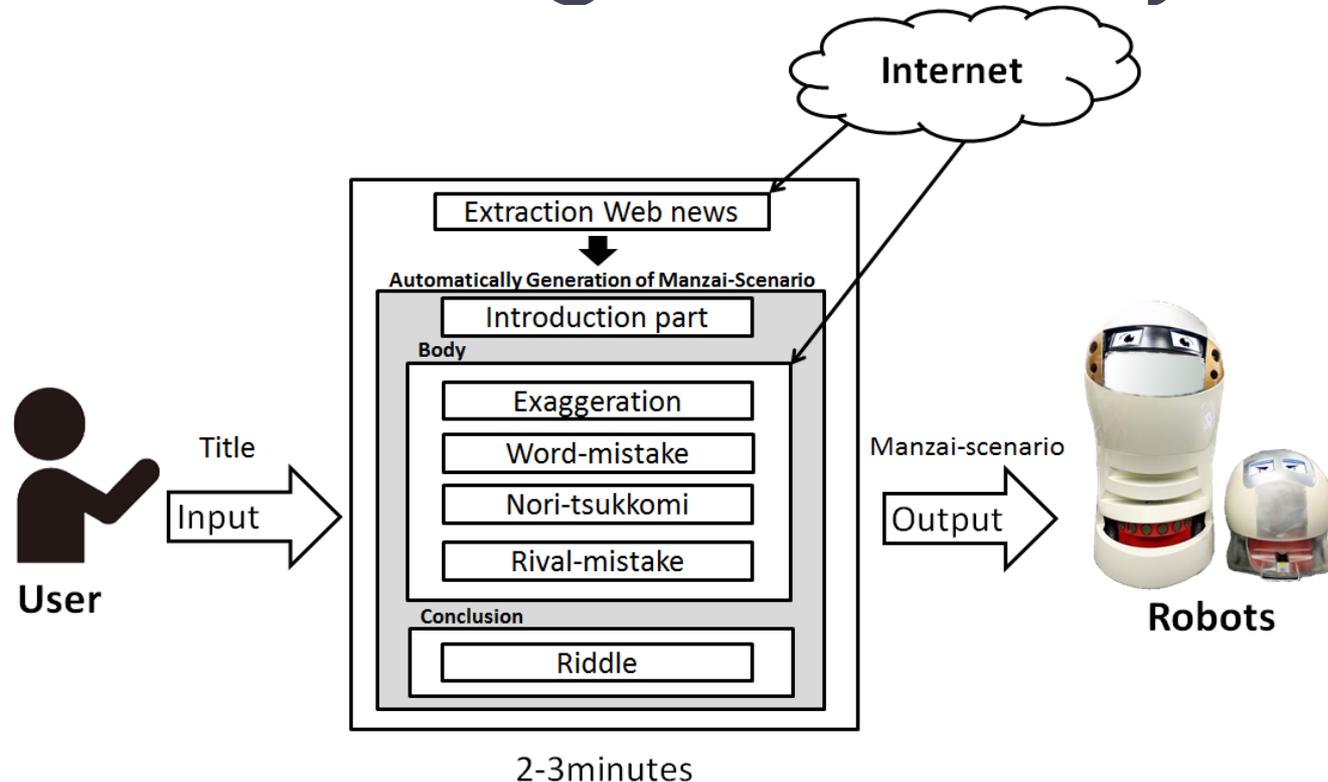
Japan has a traditional type of humorous comedy called 'Manzai', which is a kind of standup comedy.

'Manzai' is typically a show of two comedians performing humorous dialogue routine.

The 'Manzai' metaphor is useful to create acceptable humorous dialogue between robots.

Automatic generation of 'Manzai' scenario which consists of humorous dialogue from web news articles.

Manzai scenario generation system



1. User inputs a keyword to the system.
2. The system gets a news article that includes the keyword from the internet.
3. In real time, the system generates a 'Manzai' scenario that consists of humorous dialogues using fluffy patten and misunderstandings.
4. Our 'Manzai-Robots', perform a 'Manzai' routine in real time.



What is Manzai?

- It usually includes two performers who are 'boke' and 'tsukkomi'.

'Boke'

- The 'boke' says things that are stupid, silly, or out of line, sometimes using puns.

'Tsukkomi'

- The 'tsukkomi' delivers quick, witty, and often harsh responses

Manzai-robots



They have laptop computer in their body

- Ai-chan
 - Perform: 'Tsukkomi'
 - Tall: 100cm
 - 'Ai-chan' is a server.
 - connected the internet, generates 'Manzai' scenarios in real time.
- Gonta
 - Perform: 'Boke'
 - Tall: 50cm
 - 'Gonta' is a client.
- Their eyes are small display, and they can change their eyes based on their scenario.

100cm



Ai-chan
('Tsukkomi')

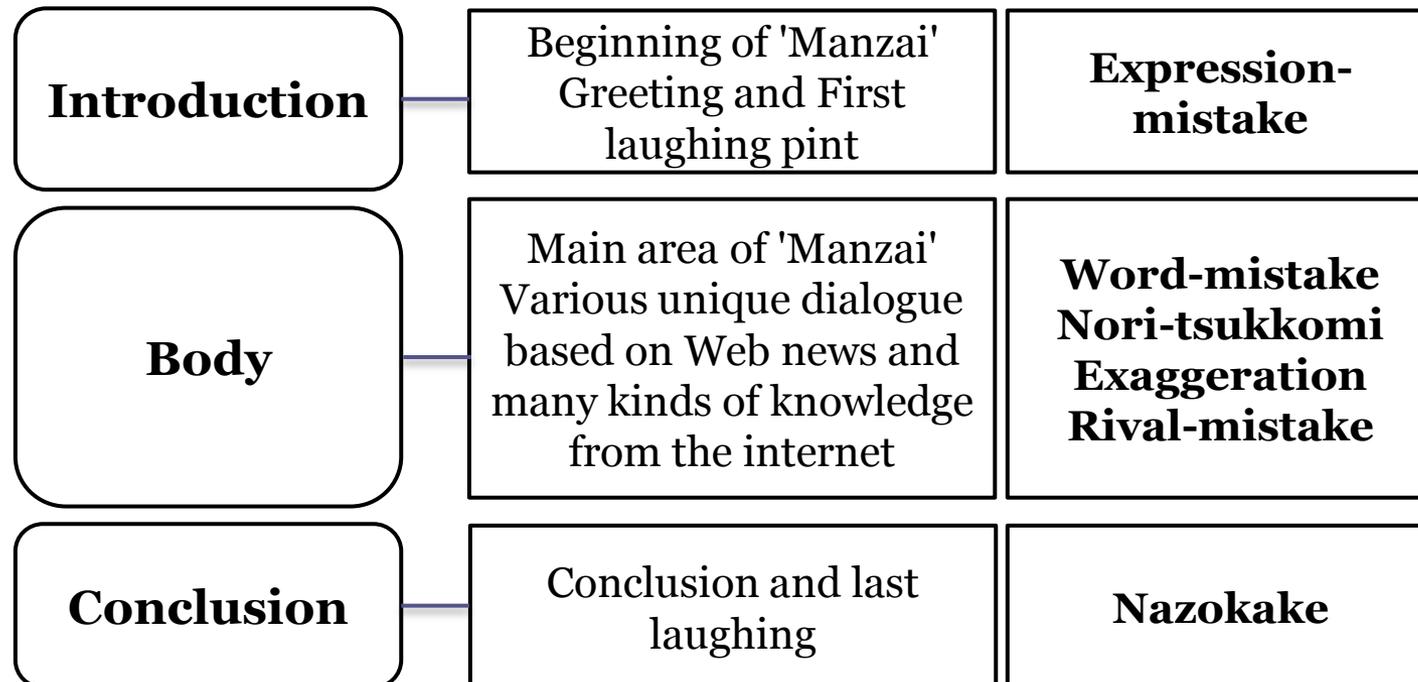
50cm



Gonta
('Boke')

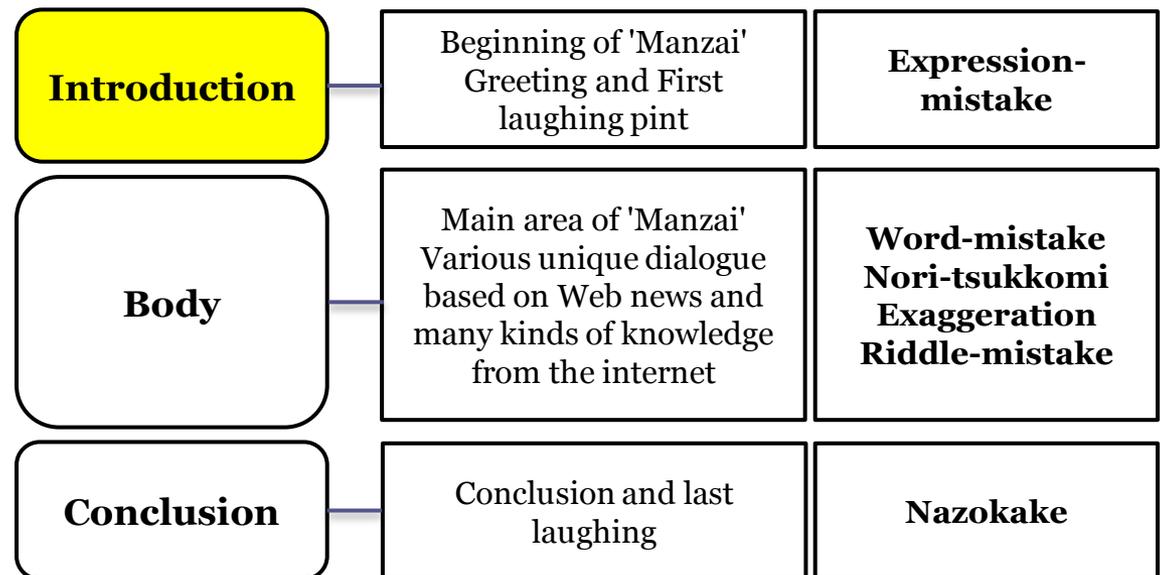
How to Generate Manzai scenario

- When a user inputs keywords for 'Manzai' to be watched, we automatically generate the web news of a keyword-based 'Manzai' scenario based on the three parts of real 'Manzai' routines.



Introduction part

- The introduction consists of several short dialogues.
- In our system, it includes a season-related greeting and a discussion where the theme of the original web content is first presented.



Introduction part

Boke(Gonta)

Hello Everyone. How are you? It is June: the rainy season in Japan.

Hmm " World Cup soccer has started!!"
I did not know that.

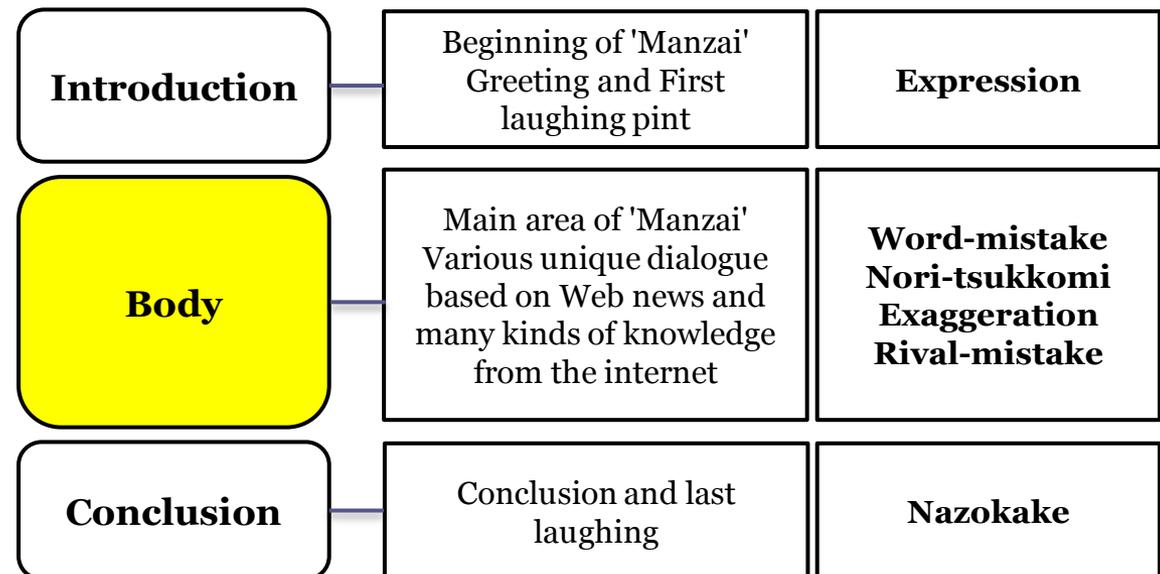
Tsukkomi(Ai-chan)

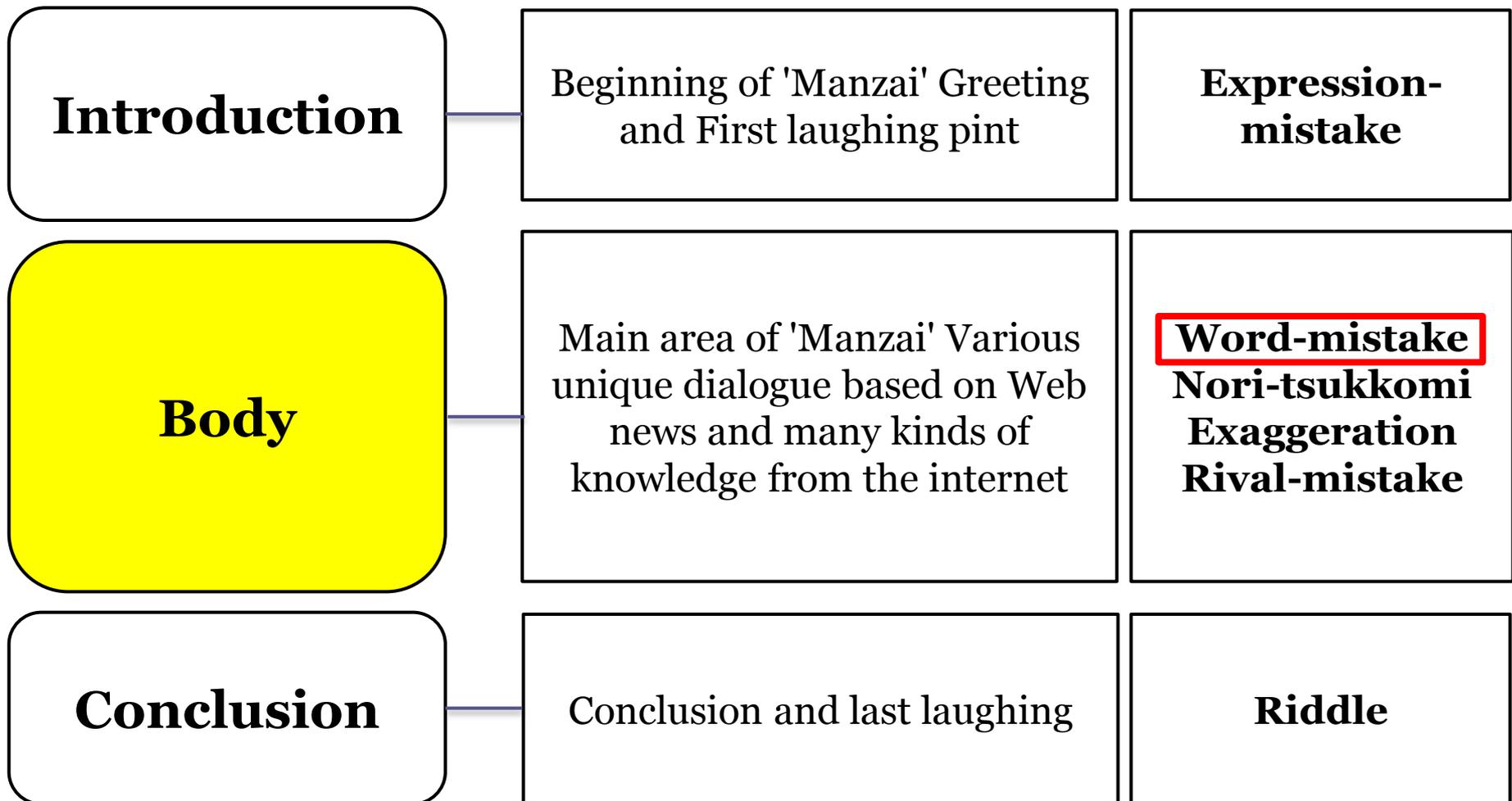
Ah yes, the rainy season has started. Anyway, have you heard the news?

That sounds interesting.
Let's start a 'Manzai' routine about World Cup soccer!!

Body part

- The body part is the main part of 'Manzai' scenario.
- We propose four type of dialogue, which are 'exaggeration', 'word-mistake', 'nori-tsukkomi', and 'rival-mistake'.





Word-mistake component

- This component is an intentional word-mistake.
- A typical word-related mistake is to change a single word to another word based on changing only one character in a word.
- For example: **nose** is change to **hose**.

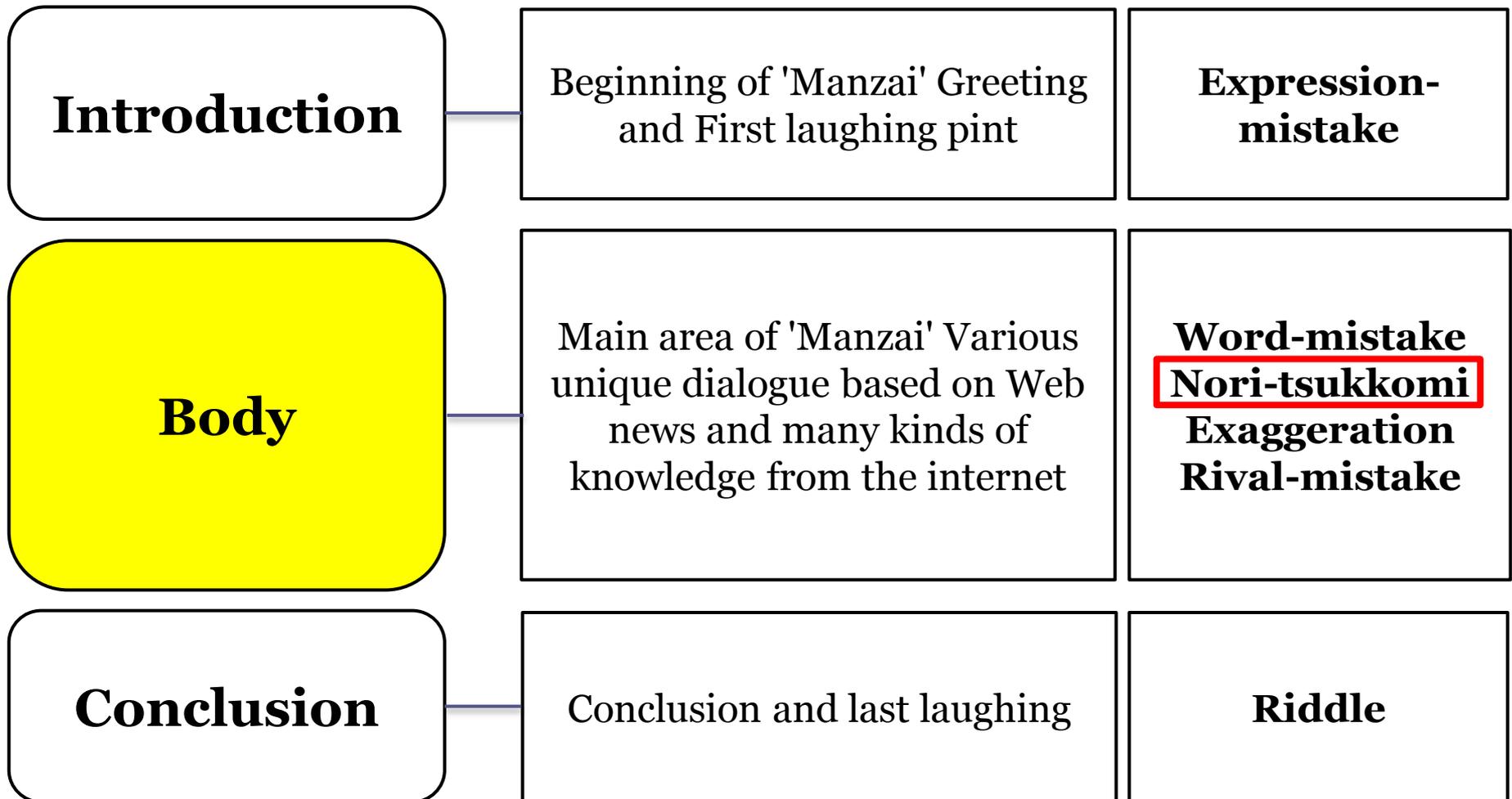
'Boke' (Gonta)

He waters the garden using his **nose**.

Oh no! I have messed that up. He actually waters the garden with his **hose**.

'Tsukkomi' (Ai-chan)

Is it right? With his **nose**?
The **nose** means
` ` Anatomically, a **nose** is a protuberance in vertebrates that houses the nostrils, or nares, which admit and expel air for respiration in conjunction with the mouth.



Nori-tsukkomi component

- 'Nori-tsukkomi' : 'tsukkomi' (smart) actor is the **boke's (stupid) technique that agreement to boke's stupid sentence temporarily.**
 - First boke says funny dialogue.
- 
- But in 'nori-tsukkomi' , 'tsukkomi' doesn't correct the dialogue, and the says agreement of boke's dialogue.
 - After that, he realize his mistake and correct own dialogue by himself.

Nori-tsukkomi component

'Boke' (Gonta)

He waters the garden using his **nose**.

Oh no! I have messed that up. He actually waters the garden with his **hose**.

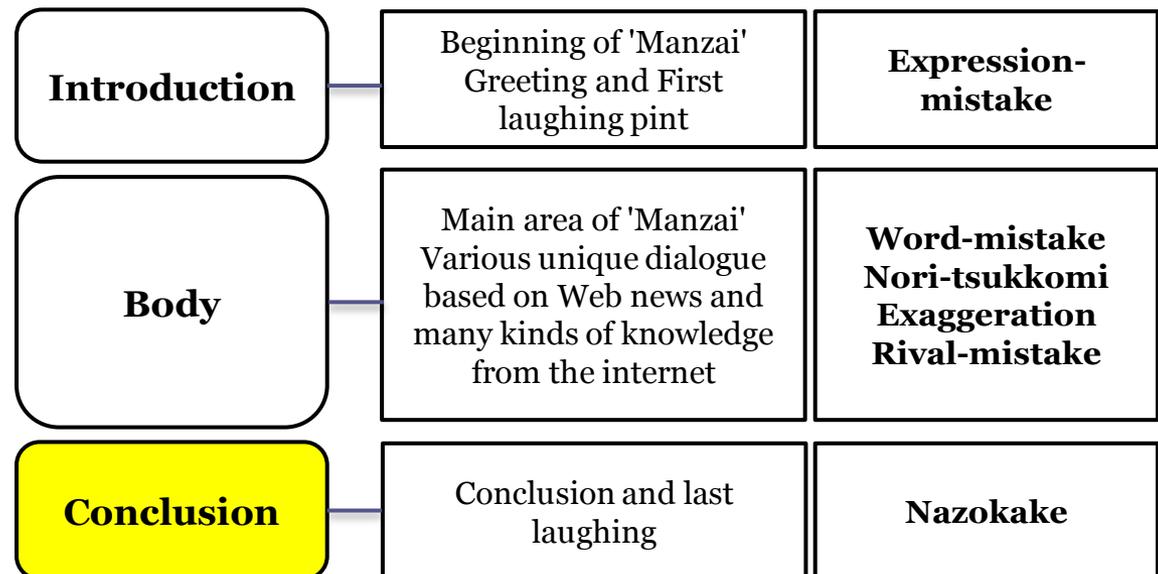
'Tsukkomi' (Ai-chan)

**That's right!! His nose is long.
Humm....**

No way!! A nose means "Anatomically, a nose is a protuberance in vertebrates that houses the nostrils, or nares, which admit and expel air for respiration in conjunction with the mouth." You have made a mistake! It is not a nose, it is his hose!!

Conclusion part

- The conclusion part consists of farewell and the final laughing point.
- We use an automatically generated like riddle in our conclusion part.



Riddle

- In Japan, riddles are usually "What is the similarity between X and Y"; the answer is typically a homonym: Z and Z'.

'Boke' (Gonta)

What is the similarity
between **soccer** and
baby?

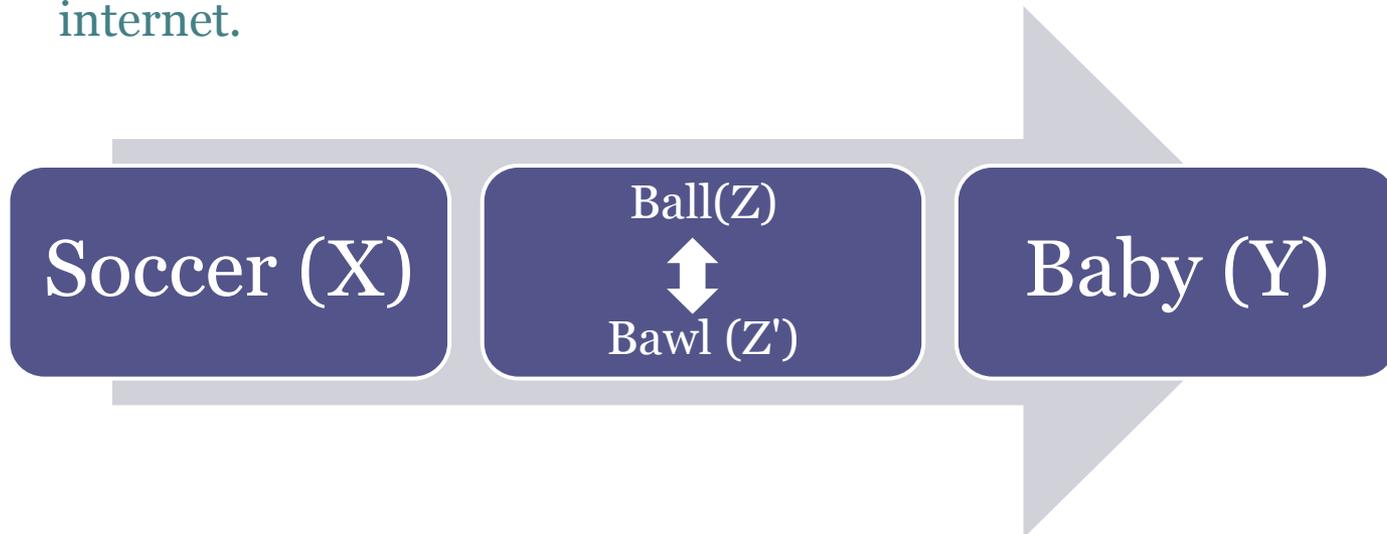
Both of them have a **ball**
(**'bawl'**)!!

'Tsukkomi' (Ai-chan)

I don't know. What?

Riddles flow

- The flow of generating riddles follows:
 1. Word X from web news article.
 2. Word Z becomes that have a co-occurrence ratio to X from the internet.
 3. Word Z' becomes that homonyms of candidates of Z from the Japanese dictionary for children.
 4. Word Y becomes that have a co-occurrence ratio to Z' from the internet.



Demo movie



Djokovic overwhelm the Wawrinka.

“Barclays ATP World Tour Finals” (Tour Finals) to take place in London, United Kingdom from November 9 through November 16. The best eight players of this season gather and are subsequently divided into two groups of four. They play an elimination round in a round robin format (Groups A and B). Then the two players with the best records in each group progress to the semifinals.

World number one Novak Djokovic (Serbia) defeated Stan Wawrinka (Switzerland) 6-3, 6-0 and achieved the second win in the round robin phase. He moved much closer to the year-end world number one spot.

Conclusion

- We proposed the robot scenario system, which automatically generates a funny dialogue scenario from a web news article in real time.
- Our generated 'Manzai' scenario consists of three parts: the Introduction, Body, and Conclusion.
- Furthermore, we proposed components of various types to generate funny dialogue.
- We conduct an experiment to assess the benefits of our proposed system, and results show that our proposed system is beneficial.

Future work

- We will generate components of many kinds and increase the accuracy of those components.
- Furthermore, we will conduct experiments with elderly people to measure how beneficial our system is for elderly people.