

# Defining Words with Words

Iuliana-Elena Parasca\*, Andreas Lukas Rauter\*, Jack Roper\*, Aleksandar Rusinov\*  
Guillaume Bouchard, Sebastian Riedel, and Pontus Stenetorp

\* Contributed equally to this work.



# Games With a Purpose

- Annotations as a **byproduct** of gameplay
- Jurgens and Navigli (2014), von Ahn et al. (2006), ...
- However, suffers from shoehorning

## **Our strategy**

Use an **existing** language game that captures **semantic phenomena** as inspiration.

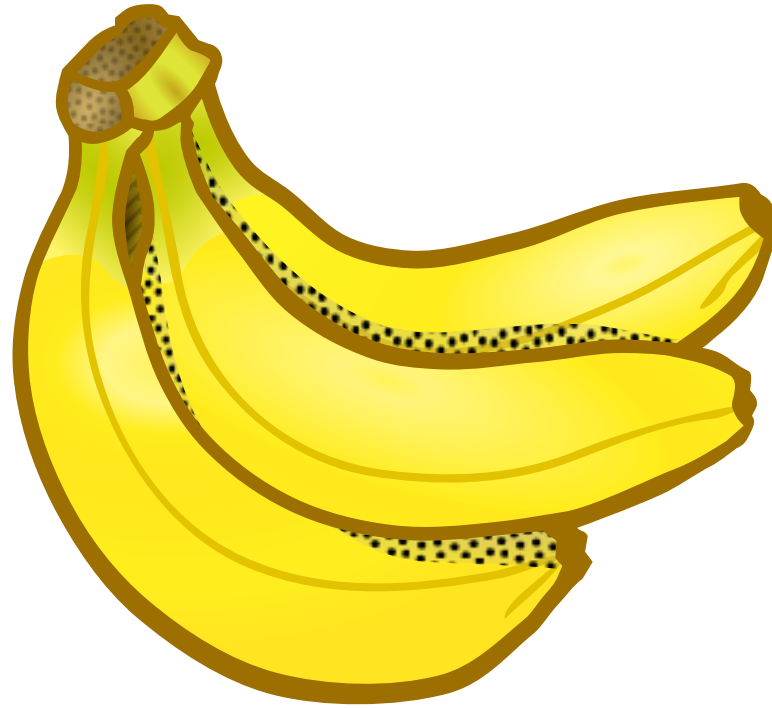
# Pyramid



- 2nd only to "Jeopardy!"

# Let's Play!

1. Fruit
2. Yellow



# Let's Play Again!

1. Freedom
2. Burger



# The “Dictionary” Hypothesis

Words are **similar** if they have **similar definitions**.

# Meet the Word Sheriff

🔊 Sound Off

You are a guesser!  
5 clues allowed

The clues provided are:  
1. binding  
2. legal

Your current guesses are:  
1. book

contract

Clue: legal

11 seconds

Me  
23 (+0)

Player  
30 (+0)

Player  
50 (+10)

Player  
50 (+50)

<http://comp3096.herokuapp.com/>



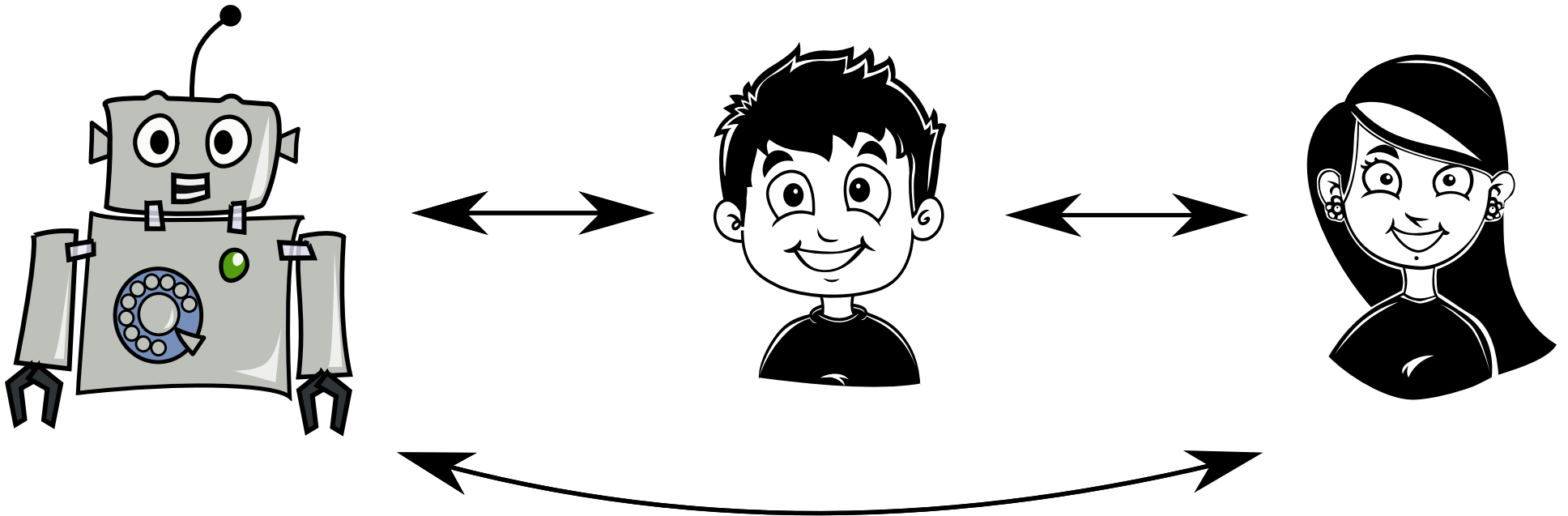
## **Initial Limited Release**

- 5-day release within the UCL CS department
- 246 games played
- 85% stated they would play again

# Psycholinguistic Analysis

- *Hypernymy*: animal, horn ⇨ rhinoceros
- *Antonymy*: win ⇨ lose
- *Background knowledge*: teeth, tongue ⇨ mouth
- *Compositional*: japanese, spice ⇨ wasabi

# “Communicative” Evaluation



- Essence of language: communication
- Learning to **infer** and **explain**

## **Next steps**

- “Professional” user-interface
- User studies
- Vocabulary expansion

**Thank you for your attention**

ご清聴ありがとうございました

Tack för er uppmärksamhet

**Comments and criticism is most welcome**

# Word Associations

- “Say the first word that springs to mind”
- Example: man  $\mapsto$  woman
- Key difference, no *goal* state

# Do people play language-based games?

- "Words With Friends" (2009): 10 - 50 million installs
- "WordBrain" (2013): 10 - 50 million installs
- "Codenames" (2015): #19 on BoardGameGeek

# Expressivity limitations?

