

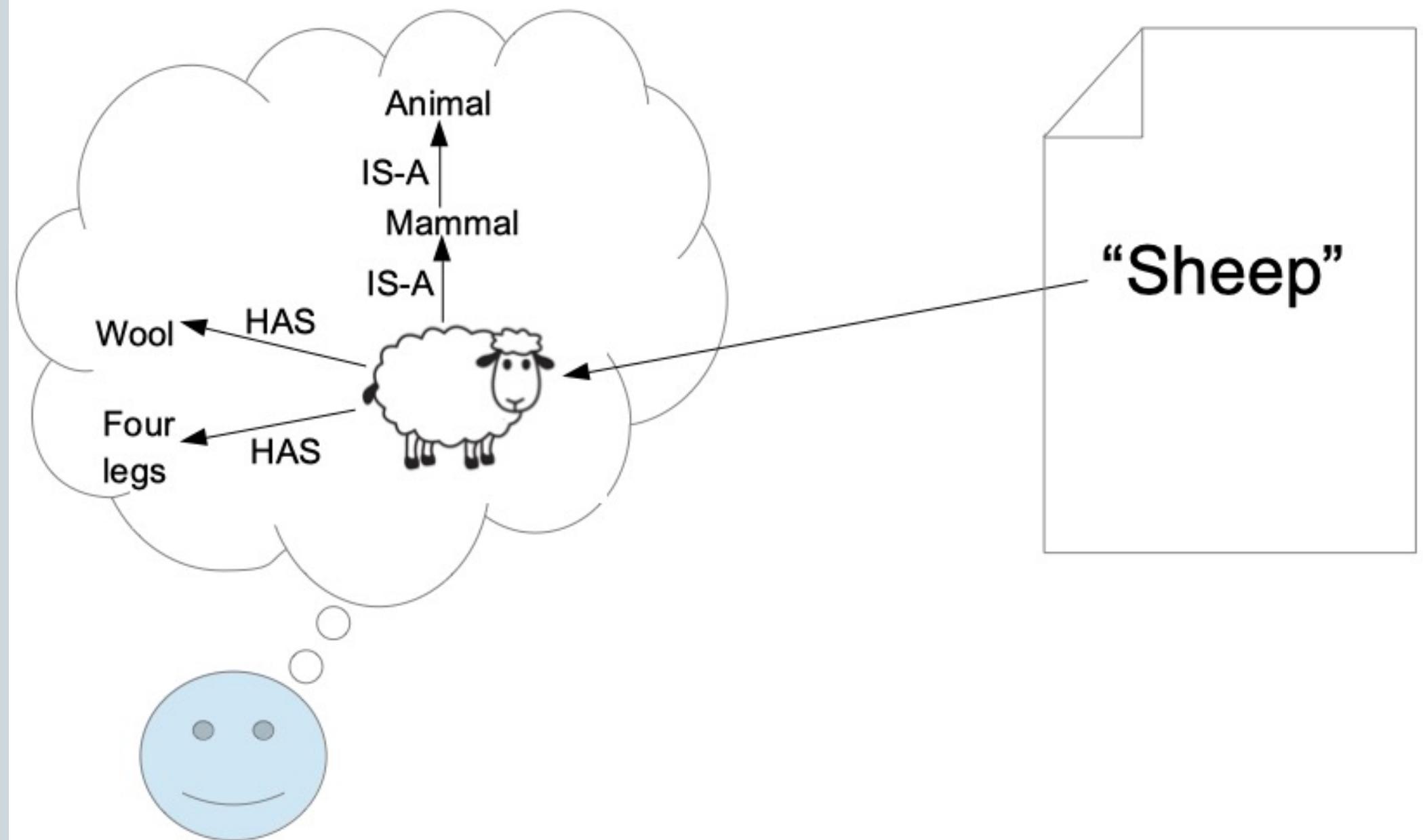
Distributional semantics



Representing words

- So far we have looked at how we might represent documents
- How can we represent words numerically, so we can build computational models of language?
- How can we account for:
 - Their similarities?
 - Their meaning, or semantics?
- We can use *distributional semantics*, taking a word's context as a proxy for its meaning
- Use this to build vector based representations of words

Lexical semantics



An experiment – wombling and snetches

The Captain's side raked first. Tom staked. The hired sportsmen played so hard that they **wombed** too fast, and were shaky with the rakes. Tom fooled around the way he always did, and all his stakes dropped true. When it was his turn to rake he did not let Captain Najork and the hired sportsmen score a single rung, and at the end of the **snetch** he won by six ladders.

From How Tom beat Captain Najork and his hired sportsmen
by Russell Hoban and Quentin Blake

Distributional semantics

- “You shall know a word by the company it keeps” (JR Firth)
- The contexts in which words appear correlate with their meaning
- We understand a word by its distribution: the set of contexts in which it is found
- “Don't think, but look!” (Wittgenstein) - i.e. the meaning of a word is the description of its use,

Words in context – concordances and collocations

W WebCorp: The Web as Corpus x +

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Results for query "cheese"

case insensitive,
using the Bing API

Jump to collocates table
Jump to options

1: by texture Cheeses by color Vegetarian Cheeses **Cheese** recipes Cheese facts Serving and storage Cutting
2: by color Vegetarian Cheeses Cheese recipes **Cheese** facts Serving and storage Cutting tips Cheese
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9: learn more about the wonderful combinations. **Cheese** is nutritious food made mostly from the milk of
10: animals and process their milk. That's when the **Cheese** was born. Explore this site to find out about
11: this site to find out about different kinds of **Cheese** from all around the world. You can search the
12: You can search the database of 2015 variaties of **Cheese** by names, by country of origin, by kind of milk
13: includes information on most famous sorts of **Cheese** such as Cheddar, Camembert, Stilton or Parmesan,
14: de Chavignol. Did you know? The most expensive **Cheese** in the world is Pule and it's made from donkey's
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27: match cheese and wine? POPULAR CHEESES American **Cheese** Asiago Blue Cheese Bocconcini Brie Buffalo
28: POPULAR CHEESES American Cheese Asiago Blue **Cheese** Bocconcini Brie Buffalo Mozzarella Burrata
29: Chihuahua Colby Colby Jack Comte Cotija Cream **Cheese** Dubliner Edam Emmental Feta Fior Di Latte
30: Edam Emmental Feta Fior Di Latte Fontina Goat **Cheese** Gorgonzola Gouda Grana Padano Gruyere Halloumi

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Thank you

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