

## The Treachery of Answers



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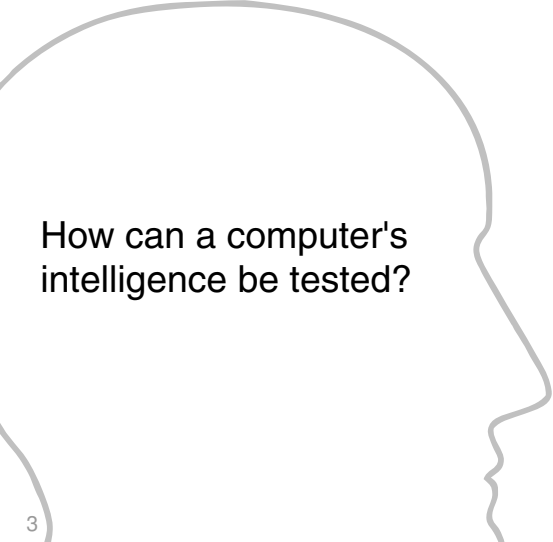
Martin  
Potthast



# Brief Recap of Information Retrieval

# Information Retrieval in a Nutshell

- ❑ **A vague request.**  
Expression of a complex information need: a question
- ❑ **Billions of documents.**  
Text, images, audio files, videos, . . .

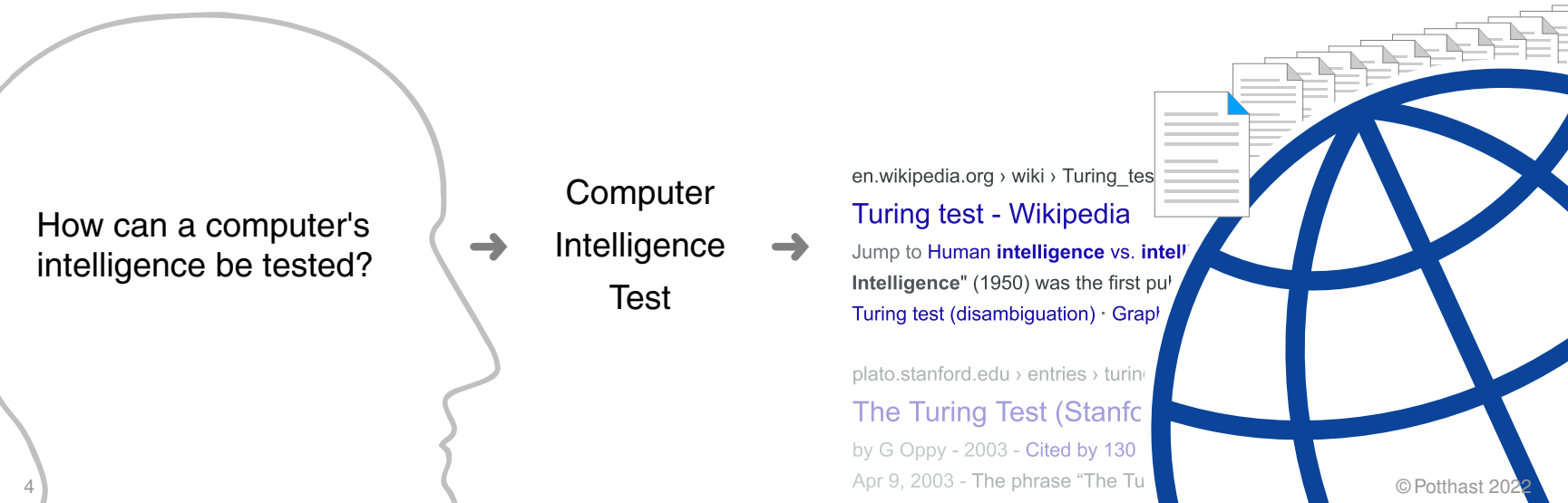


How can a computer's intelligence be tested?



# Information Retrieval in a Nutshell

- ❑ A vague request.  
Expression of a complex information need: a question, or just a few keywords.
  - ❑ Billions of documents.  
Text, images, audio files, videos, ...
  - ❑ High class imbalance.  
Only a tiny fraction of all documents are relevant to the request.
- Retrieve relevant documents in milliseconds.



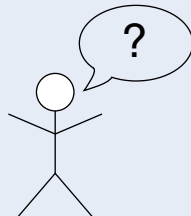


# Architecture of a Search Engine



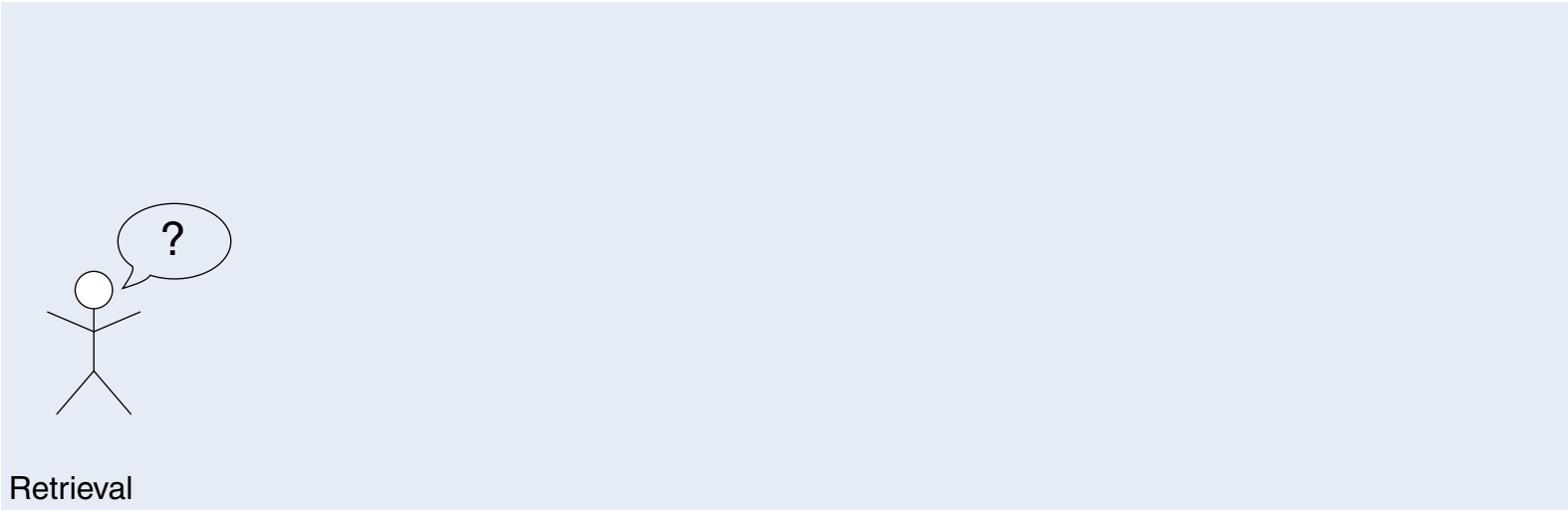
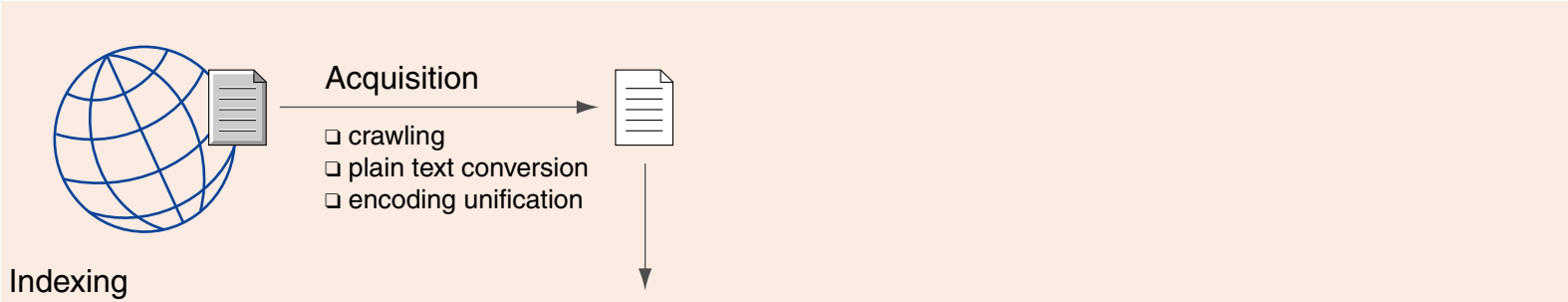
Indexing

Storage

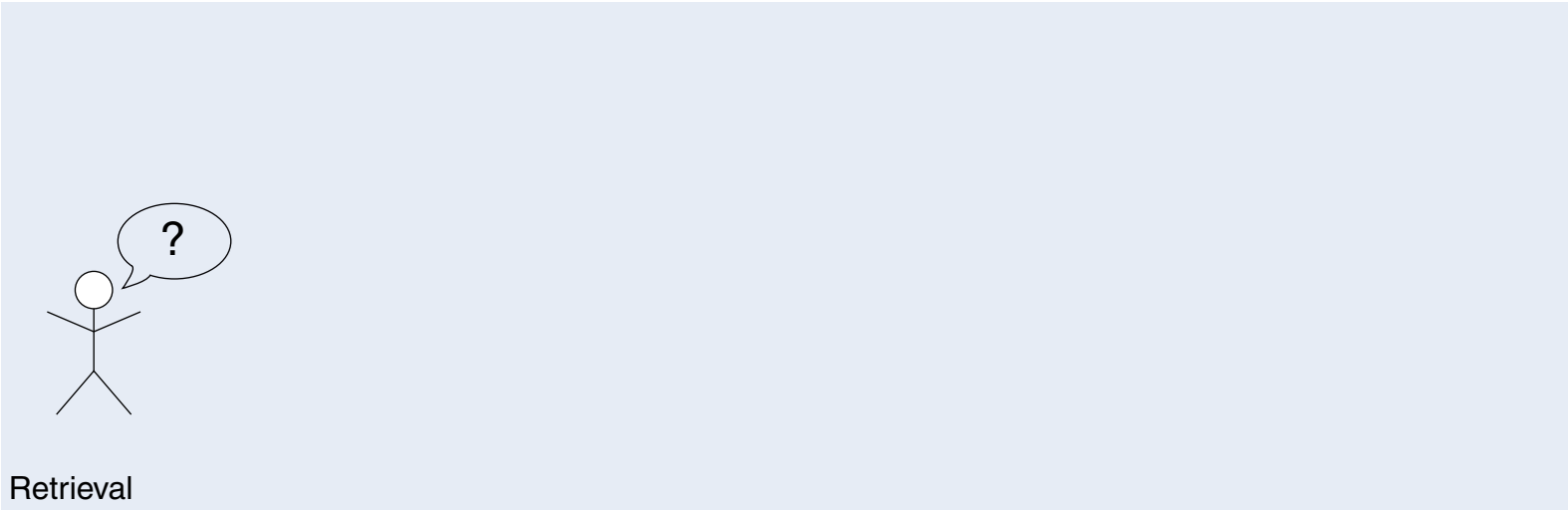
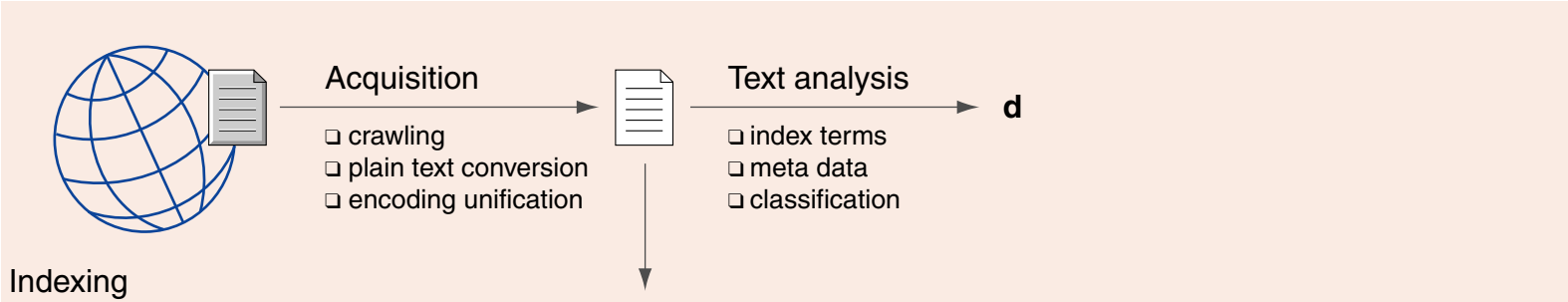


Retrieval

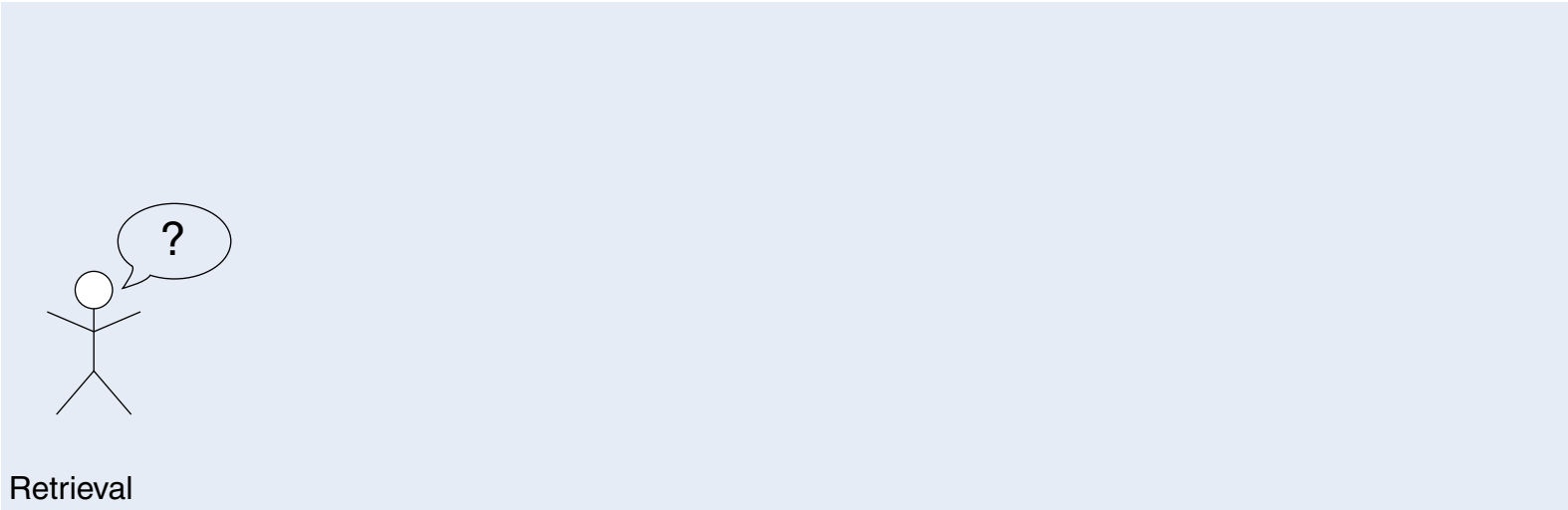
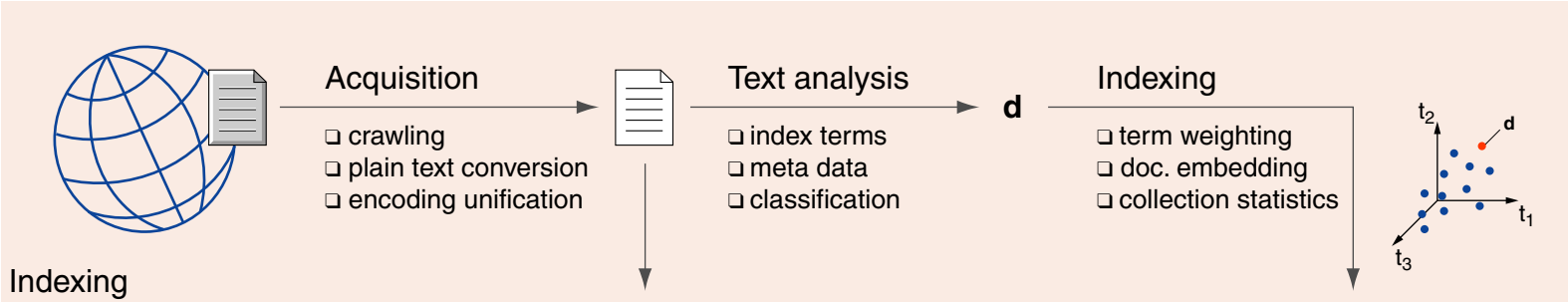
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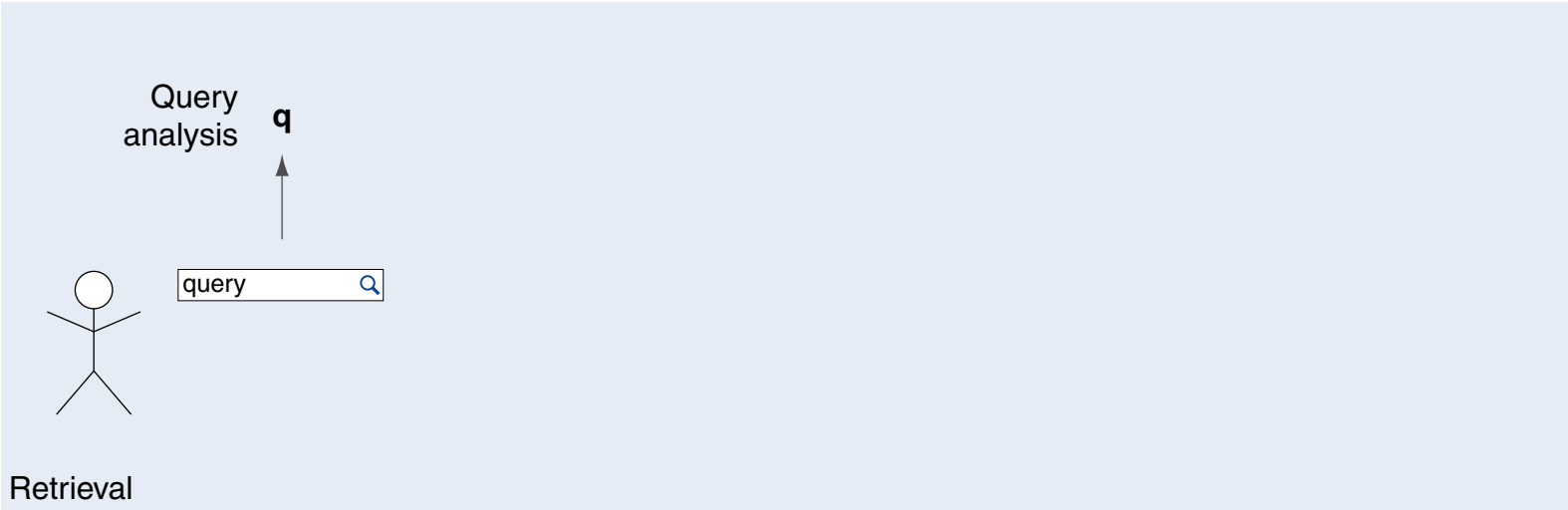
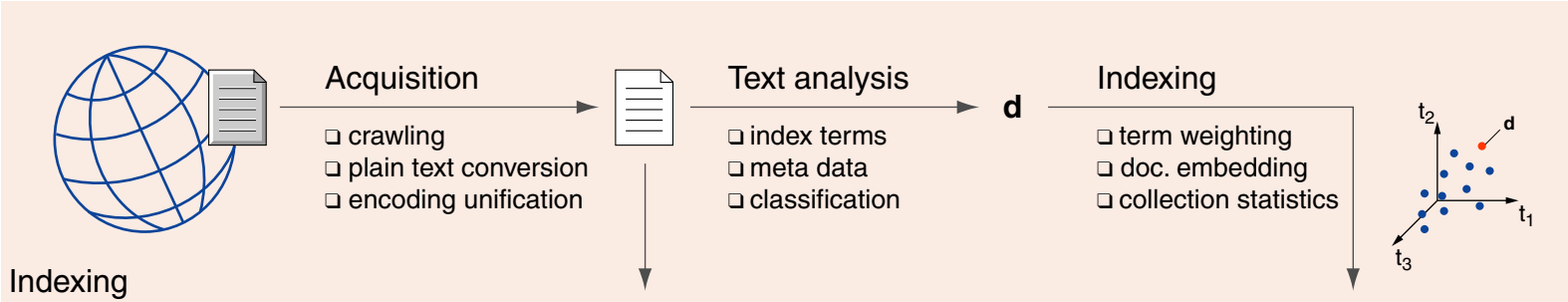
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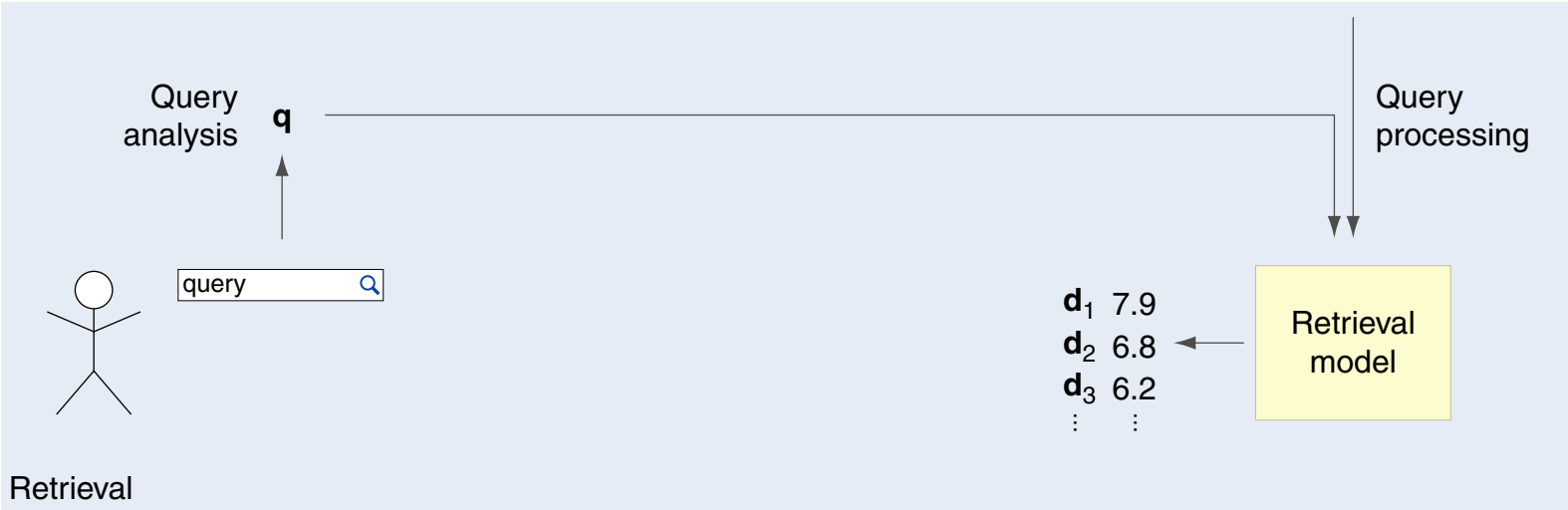
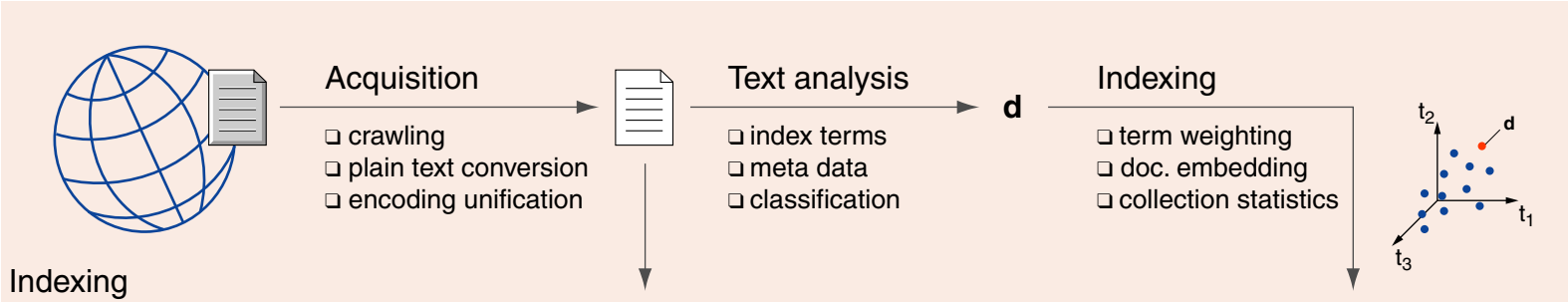
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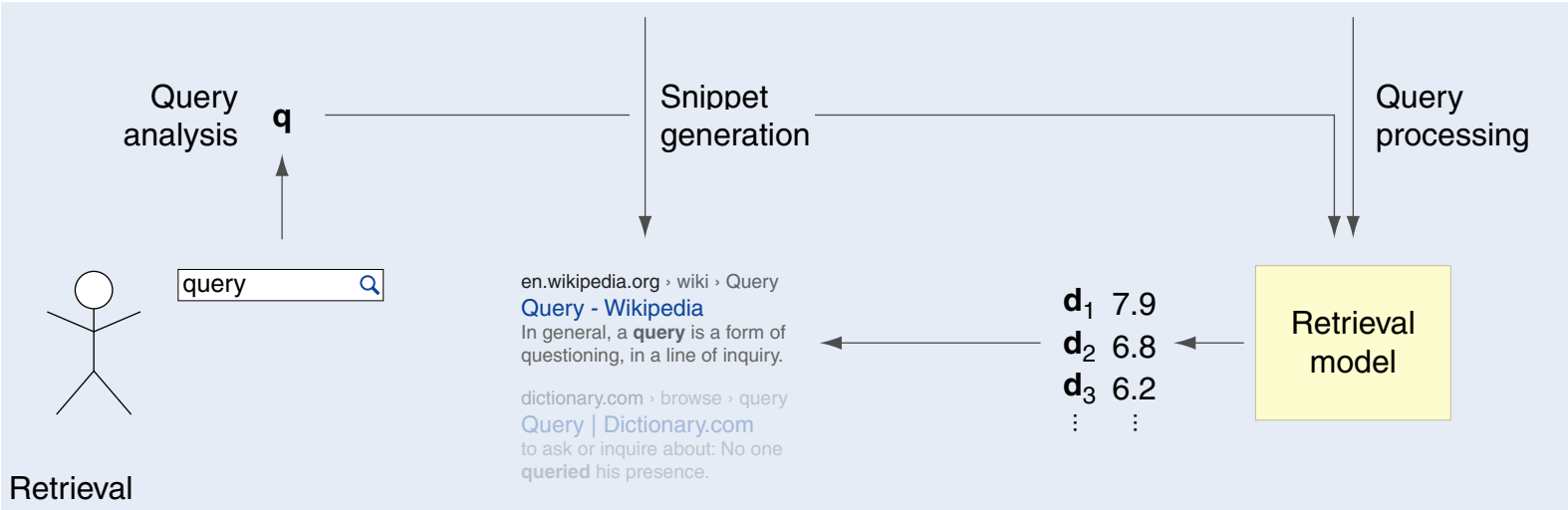
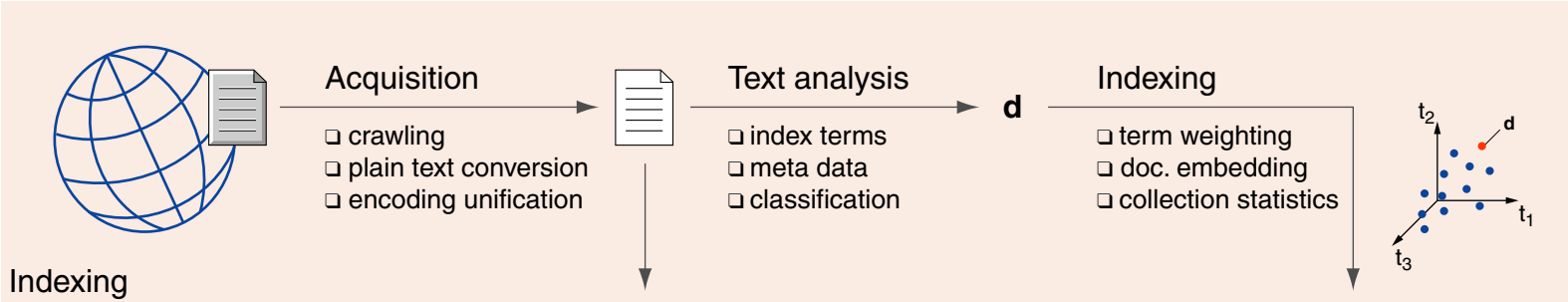
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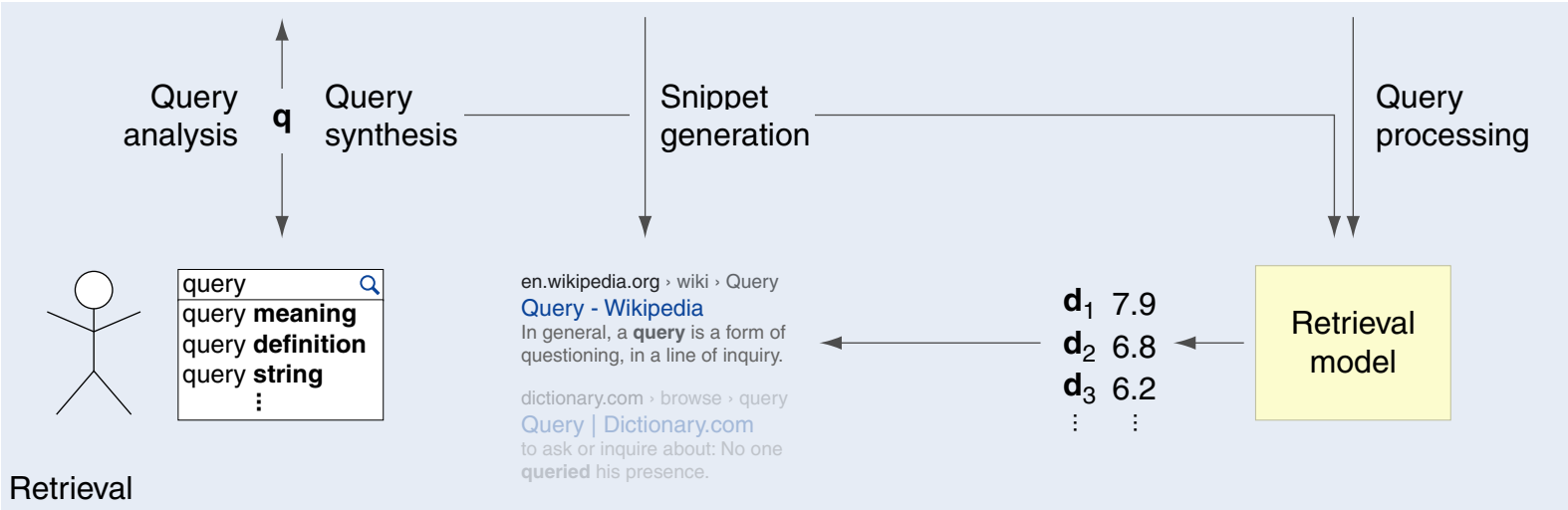
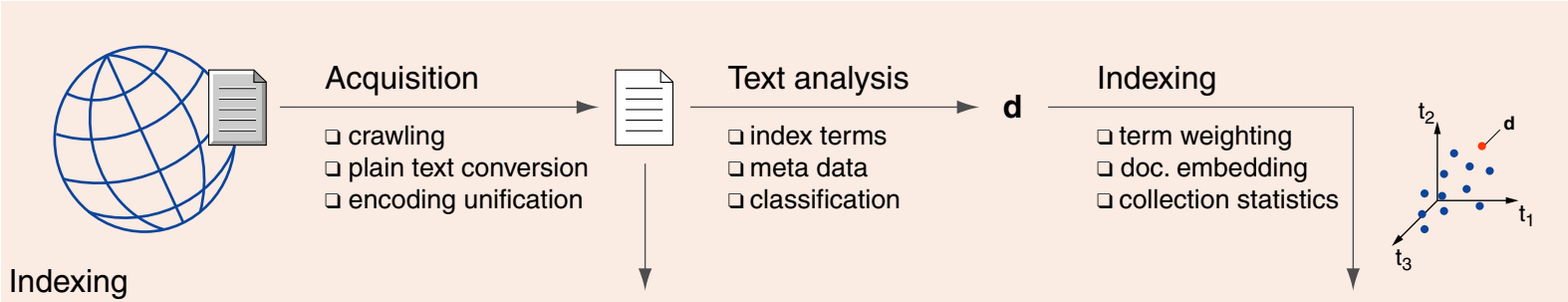
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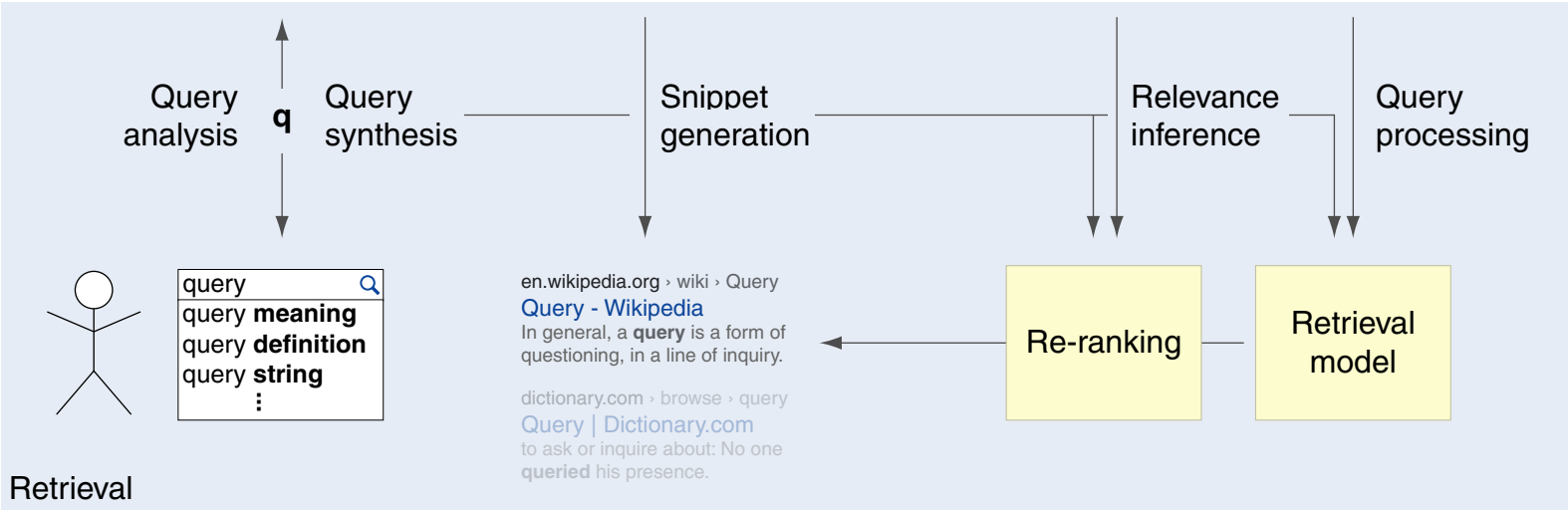
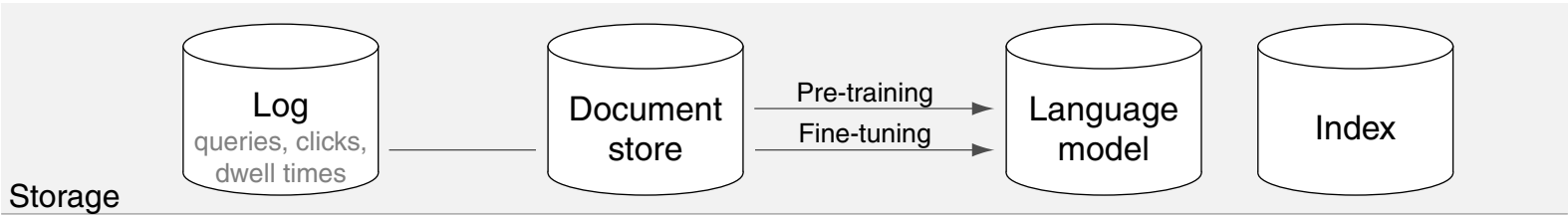
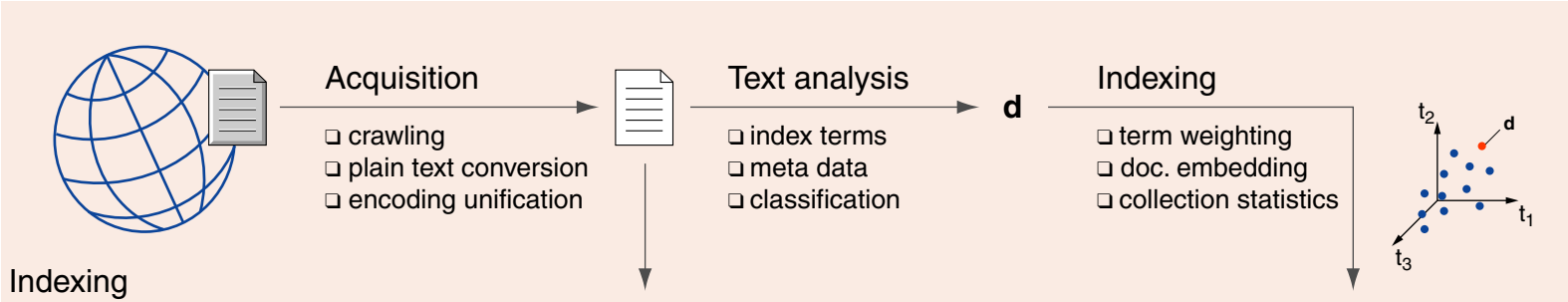


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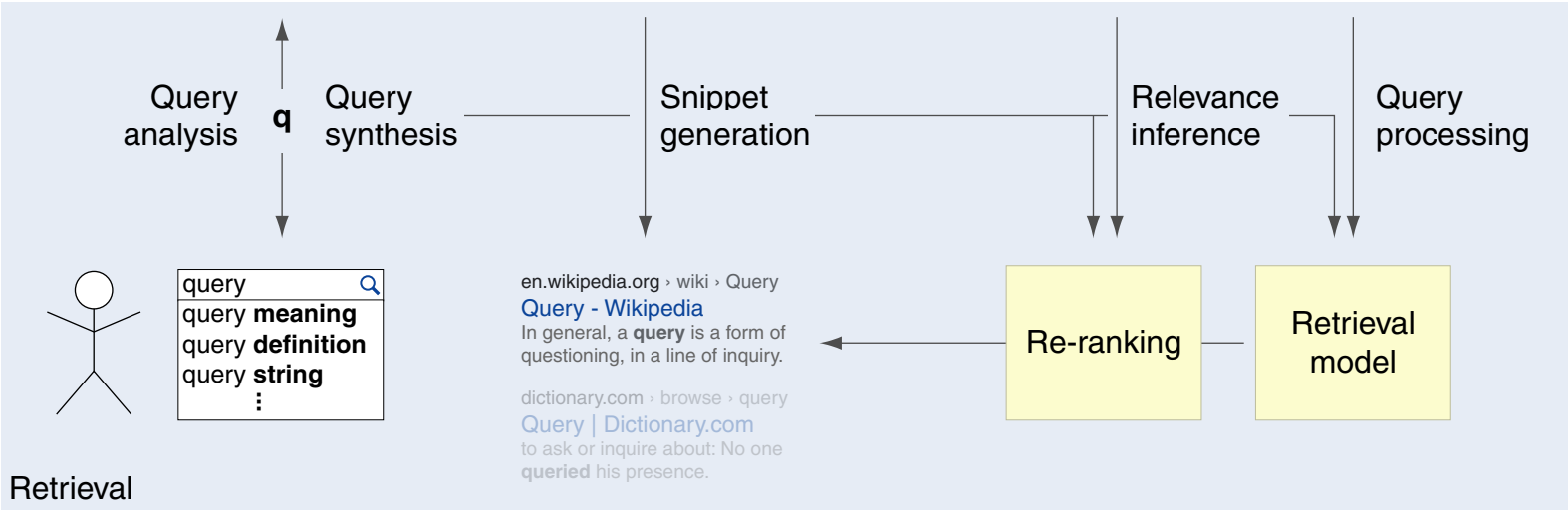
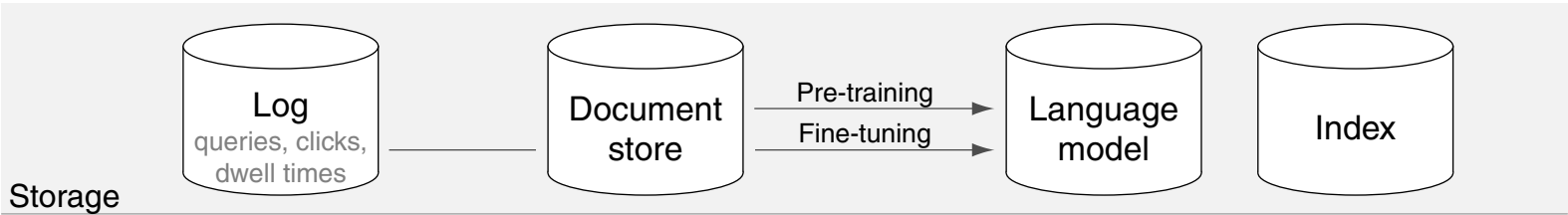
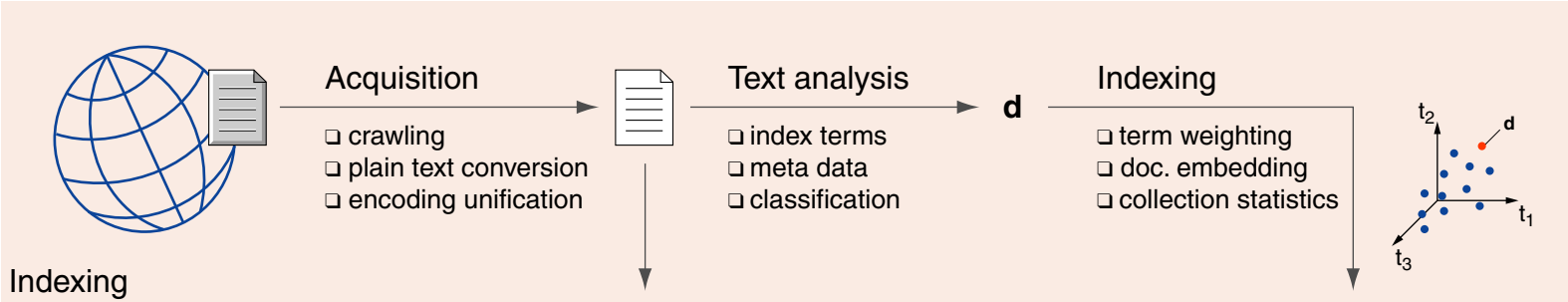




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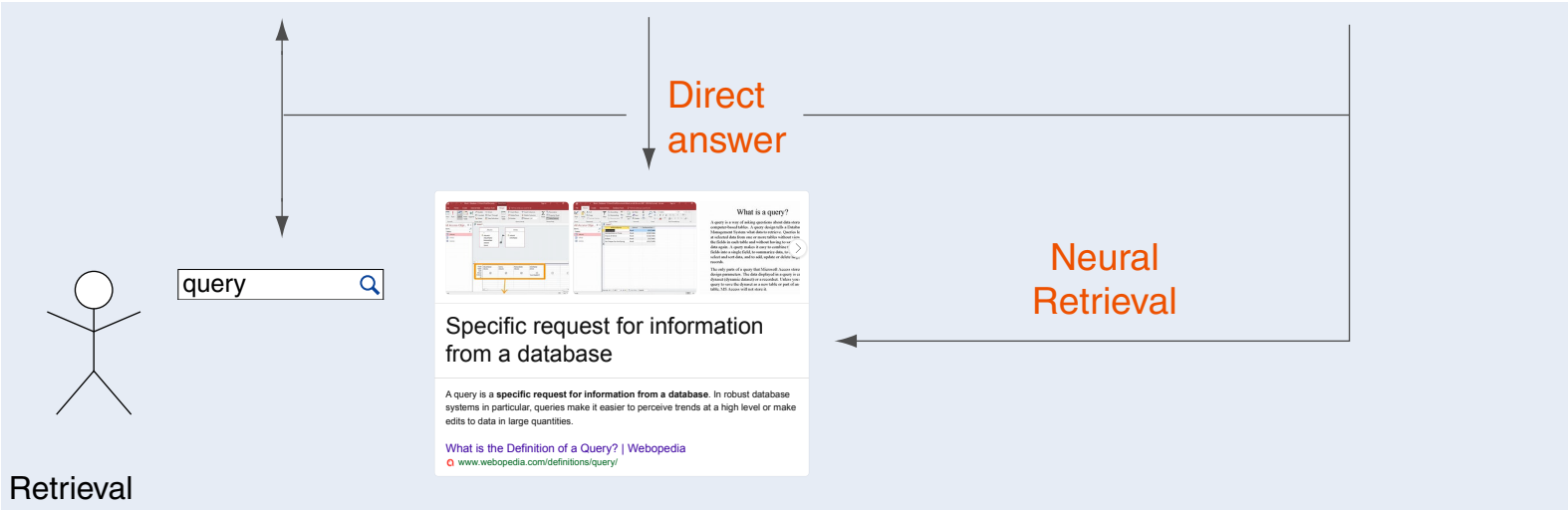
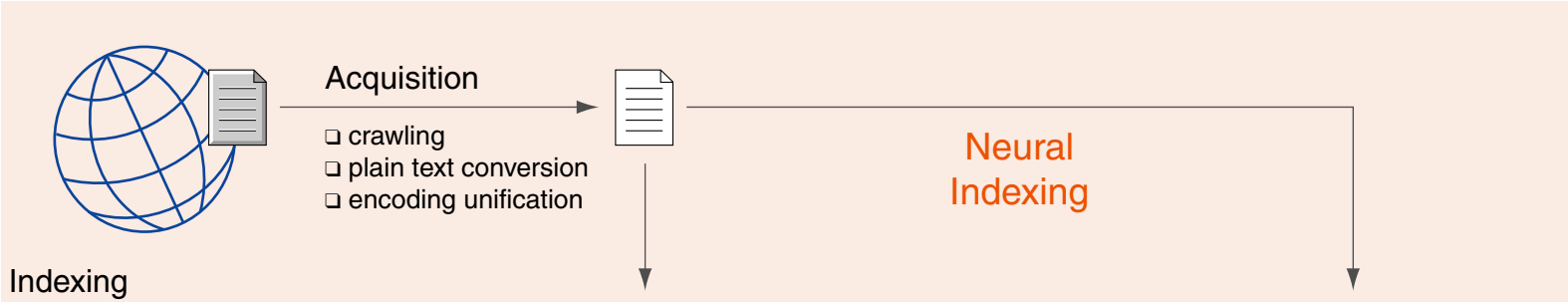


# Architecture of a Search Engine



Evaluation

# Architecture of a Search Engine



Evaluation



## The Treachery of Answers



Cat / Lifespan

**15 years**

Domesticated

*Feedback*

### [How Long Do Cats Live? | petMD](#)

[www.petmd.com/blogs/thedailyvet/.../how\\_long\\_do\\_cats\\_live-11496](http://www.petmd.com/blogs/thedailyvet/.../how_long_do_cats_live-11496) ▾

Aug 8, 2011 - This question, typically rephrased as, "How long will my cat (or dog, horse, etc.) live," is something veterinarians hear on a daily basis.

### [Aging Cats: Changes, Health Problems, Food, and More](#)

[pets.webmd.com/cats/guide/aging-cats-qa](http://pets.webmd.com/cats/guide/aging-cats-qa) ▾

WebMD veterinarian experts answer common questions **cat** owners have ... What else can you expect as your **cat** ages? ... Q: **How long do cats** usually live?

### [What Is the Life Span of the Common Cat? - Cats - About.com](#)

[cats.about.com](http://cats.about.com) › [About Home](#) › [Cats](#) ▾

**How long** is the common **cat** supposed to live? Questions and answers from the About Guide to **Cats**.

### [Ageing - How long do cats live | Adelaide Animal Hospital](#)

[adelaidevet.com.au/pet.../how-long-do-cats-live-ageing-and-your-feline](http://adelaidevet.com.au/pet.../how-long-do-cats-live-ageing-and-your-feline) ▾

Life expectancy depends on many things, including one important factor - whether your cat is an indoor-only cat or an outdoor cat. Indoor cats generally live from **12-18 years** of age. Many may live to be in their early 20s. The oldest reported cat lived to be an

## Cat

Animal



The domestic cat or the feral cat is a small, typically furry, carnivorous mammal. They are often called house cats when kept as indoor pets or simply cats when there is no need to distinguish them from other felids and felines. [Wikipedia](#)

**Scientific name:** Felis catus**Lifespan:** 15 years (Domesticated)**Gestation period:** 64 – 67 days**Higher classification:** Felis**Daily sleep:** 12 – 16 hours**Mass:** 3.6 – 4.5 kg (Adult)*Feedback*



Will the exploitation of wind energy do more harm than good?

**Wind turbines—causing more harm than good?** ... However, a new study by researchers at the Indian Institute of Science (IISc), Bengaluru, claims that **wind turbines**, installed to harness **renewable energy from the wind**, are instead creating deleterious effects on predatory birds and their prey.

Nov 9, 2018



<https://researchmatters.in> › news › w...

[Wind turbines—causing more harm than good? | Research Matters](#)



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Feedback



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 <https://researchmatters.in/news/w...>

[Wind turbines—causing more harm than good? | Research Matters](#)

 About Featured Snippets  Feedback



Help! Chest pain!

### Ten home remedies for heart pain



1. Almonds. When acid reflux is to blame for the heart **pain**, eating a few almonds or drinking a cup of almond milk may **help**. ...
2. Cold pack. A common cause of heart or **chest pain** is a muscle strain. ...
3. Hot drinks. ...
4. Baking soda. ...
5. Garlic. ...
6. Apple cider vinegar. ...
7. Aspirin. ...
8. Lie down.

[More items...](#) • Jan 23, 2020

 <https://www.medicalnewstoday.com> > ...

[How to get rid of chest pain at home - Medical News Today](#)

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The dilemma of the direct answer: [Potthast et al. 2020]

*A user's choice between convenience and diligence when using an information retrieval system.*



# The Treachery of Answers

## Dilemma of the Direct Answer (continued)

Direct answers amplify various cognitive biases, among others:

1. **Authority bias.**  
Puts forward the single result with the authority of the search engine.
2. **Confirmation bias / overconfidence.**  
Likely the most prominent answer, thus confirming people already believing in it.
3. **Naive realism / survivorship bias.**  
Suggests a “simple” one-answer truth.
4. **Mere-exposure effect / illusory truth effect.**  
Exposes users to just one answer (mere exposure increases the liking of ideas).
5. **Outgroup homogeneity bias.**  
Implies a well-accepted opinion.
6. **Reactance.**  
If the direct answer is not the one that one believes in, it can cause reactance in users.

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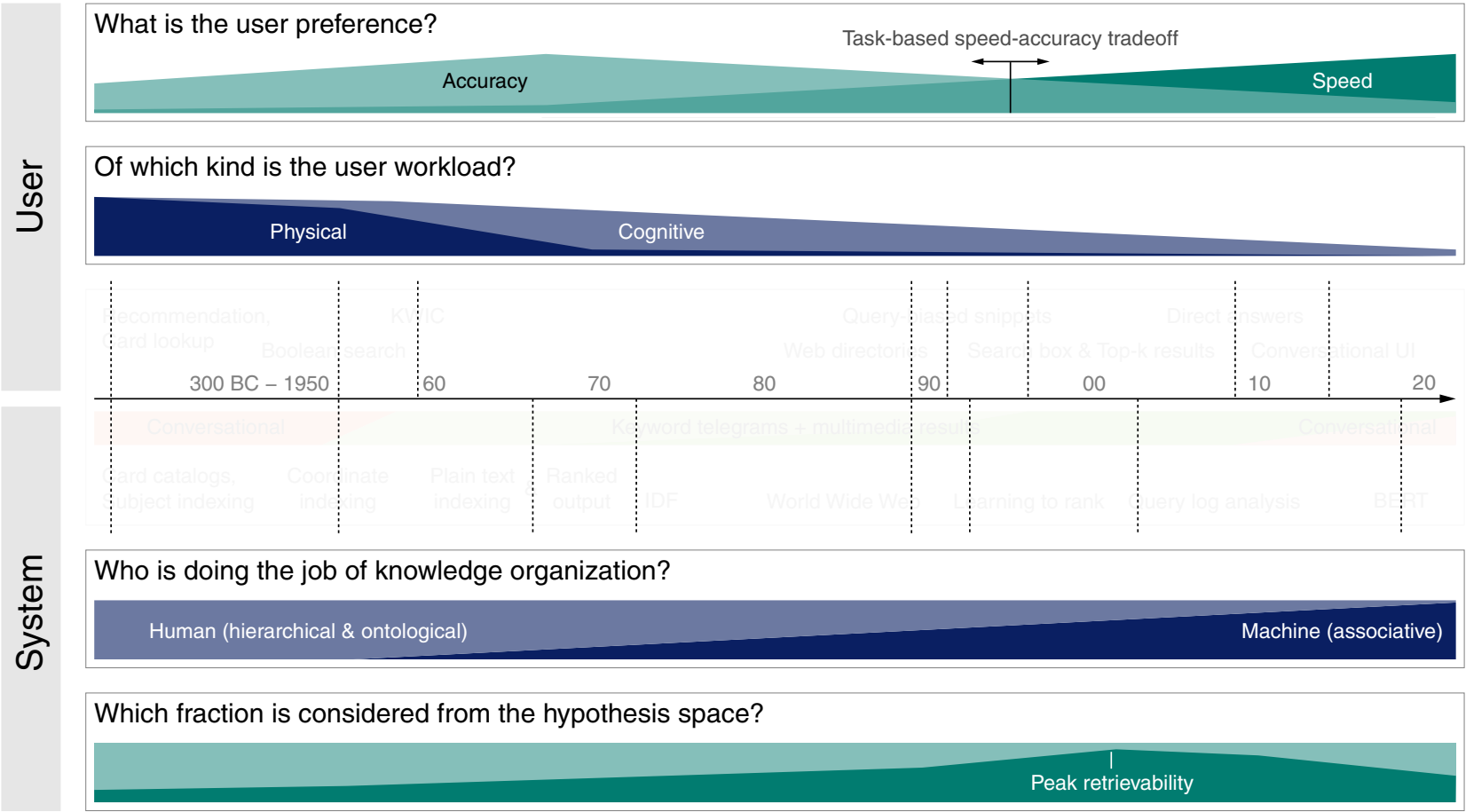
## Dilemma of the Direct Answer (continued)



• M. Potthast, M. Hagen, B. Stein (2020). The dilemma of the direct answer.

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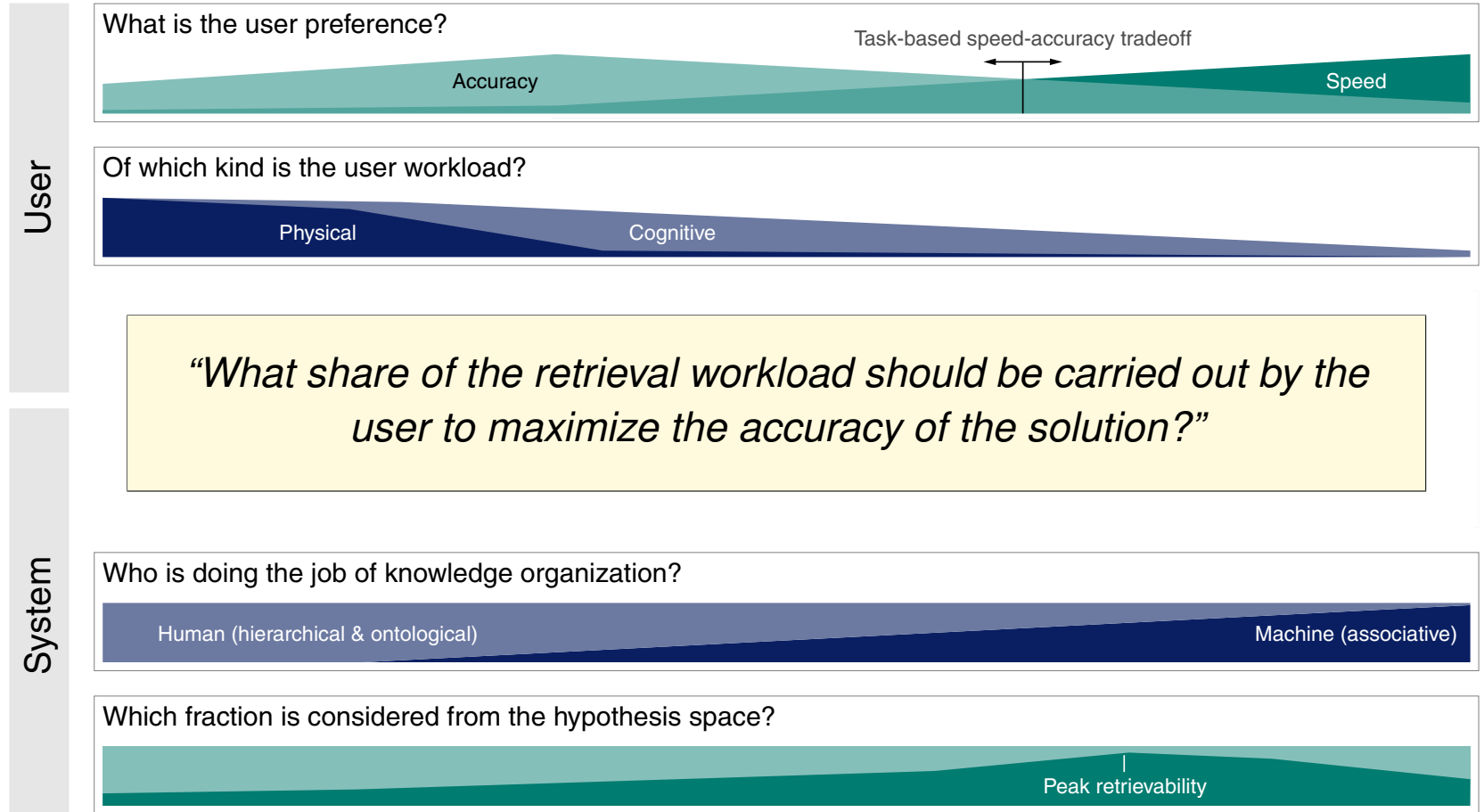
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Hi, how can I help?

How long do cats live?



15 years.



*Ceci n'est pas une réponse.*

## Remarks:

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