A User Study on Clarifying Comparative Questions

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Alexander
Bondarenko

Ekaterina
Shirshakova

Matthias
Hagen

Martin-Luther-Universität Halle-Wittenberg

www.webis.de

A User Study on Clarifying Comparative Questions

Motivation

- Correct information need interpretation is difficult for ambiguous queries.

- Clarification is one of the solutions in conversational search interfaces.

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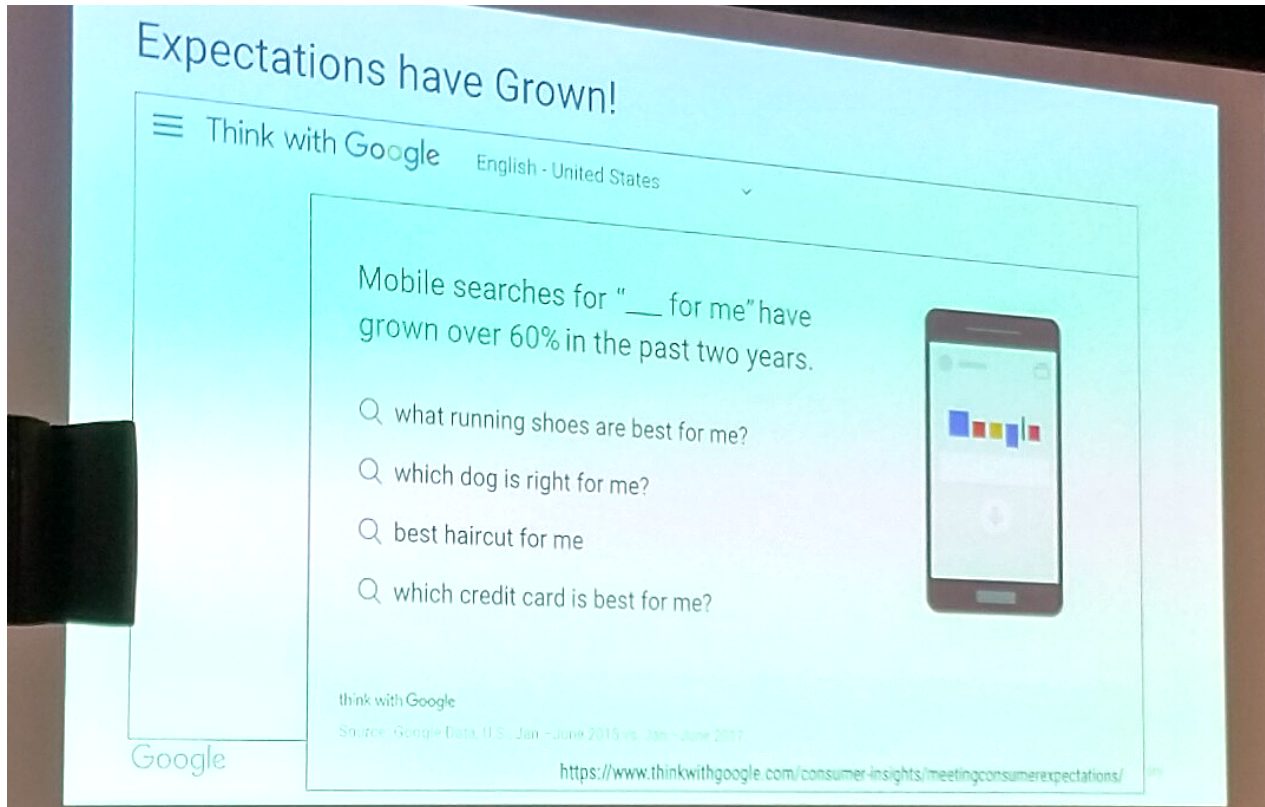

Photo of a presentation at WSDM '20; presenter is unknown.

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Comparative questions in a search engine log [Bondarenko et al.; WSDM '20]:

- 75% have no *aspect*; example: "Which is better, Bali or Phuket?"

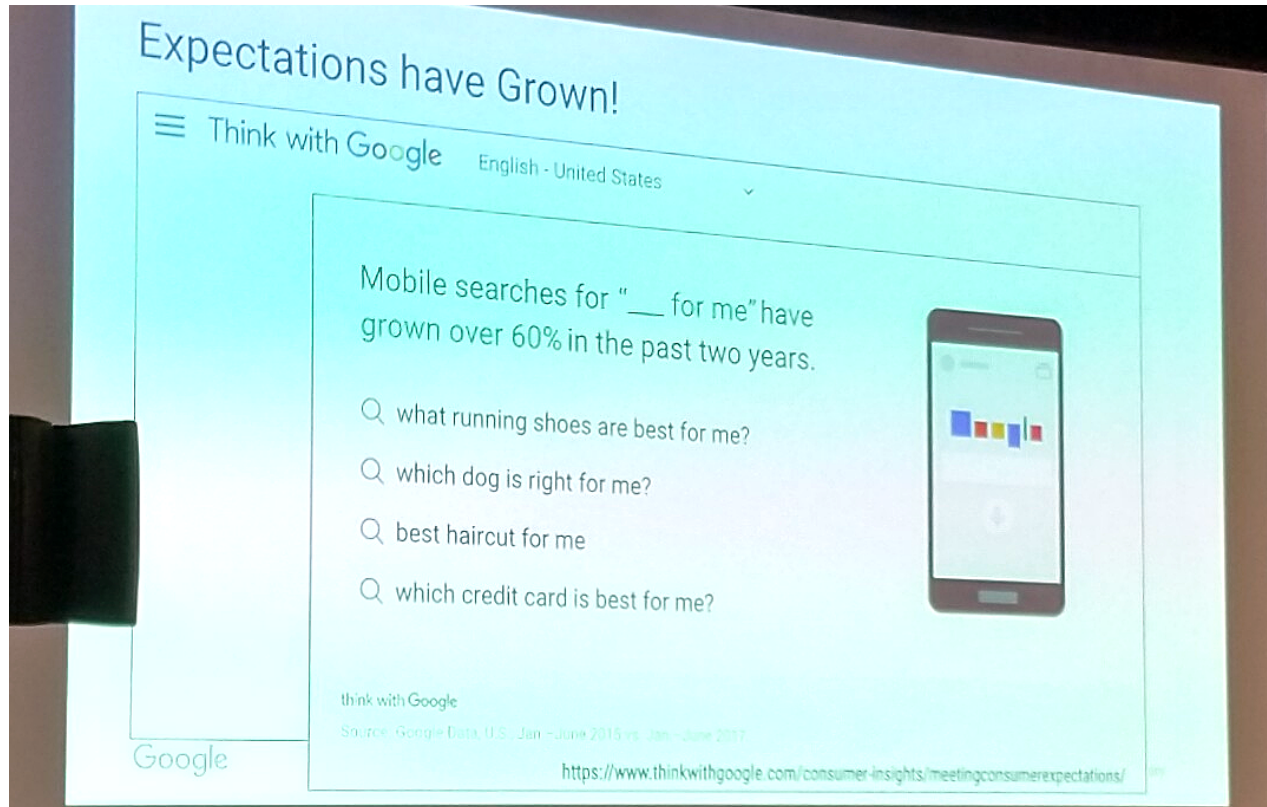- 55% have no to-be-compared *objects*; example: "What is the best antibiotic?"

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A User Study on Clarifying Comparative Questions
Contribution

- ○ A user study on clarifying comparative questions [Bondarenko et al.; CHIIR '22].

- ○ Questions with unclear comparison aspects: "Which is better, Bali or Phuket?"

- ○ Questions without explicit comparison objects and aspects: "What is the best antibiotic?"

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U (Turn 1): Which is better, Bali or Phuket?
S (Turn 2): Over which aspect do you want me to compare them?
            People usually compare Bali vs. Phuket over:
            (1) nightlife, (2) prices, (3) breakfast.
            Or do you want (4) a general comparison?
U (Turn 3): Night life.
S (Turn 4): Both, Bali and Phuket offer a vibrant nightlife.
            Bali has more of a sophisticated spirit with many
            beach side and rooftop clubs while Phuket has
            more go-go bars and casual nightclubs.
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Initial search without clarification vs. refined search after clarification:

- "Did you find a satisfactory answer to your question?"

- "Was clarification useful / helpful in finding the answer?"

- "Was the system overall pleasant to use?"

A User Study on Clarifying Comparative Questions
Conclusions and some results

- ○ A user study on clarifications in the scenario of vague comparative searches.

- ○ 7 participants, 15 and 10 predefined comparative questions.

- ○ Questions with unclear comparison aspects: "Which is better, Bali or Phuket?"

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- In at least 70% of the cases, the participants used clarifications to refine the initial searches.

- More often participants used the aspect clarification than the object clarification.

- The majority enjoyed the experience with the system's clarification component and found clarifications helpful for finding satisfactory answers.

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Future work

- Actual approaches that generate clarifying suggestions for comparison aspects and objects.

- Larger user study.

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thank you!

Backup

User Study Interface Design

You have a choice problem and need to choose between two (or more) options. To come to an informed decision, you submit a comparative (or superlative) question to a search system (question will be shown to you). Please click START to start the study and follow the instructions.

START

(A)

You want to spend your next vacation either in Bali or in Phuket. You research on the Web to find different opinions and facts about Bali and Phuket that will help you to come to a decision.

START

(B)

You ask:
Which is better, Bali or Phuket?
SEARCH

(C)

You ask:
What is the best antibiotic?
SEARCH

(D)

(A) Generic user study instructions.
(B) Example scenario Bali vs. Phuket (unique for each question).
(C) Example question with unspecified comparison aspect.
(D) Example question with unspecified comparison objects.
(E) Example interaction for aspect clarification.
(F) Example interaction for object clarification.
(G) Search results without clarification.
(H) Search results with aspect clarification.
(I) Search results with object and aspect clarification.

You asked:
Which is better, Bali or Phuket?
Over which aspect do you want me to compare them?
People usually compare Bali vs. Phuket over:

- ☐ night life
- ☐ prices
- ☐ breakfast
- ☐ None (general comparison)

SEARCH

(E)

You asked:
What is the best antibiotic?
Which antibiotics do you want to compare?
People usually ask to compare:

- ☐ Amoxicillin vs. Ciprofloxacin
- ☐ Amoxicillin vs. Doxycycline
- ☐ Amoxicillin vs. Penicillin
- ☐ None (general comparison)

SEARCH

(F)

Search Results

You asked:
Which is better, Bali or Phuket?
Here is what I found without clarification

Web Document Title - Clickable Link
Snippet
⋮

(G)

You asked to compare:
Bali vs. Phuket over *night life*
Here is what I found after clarification

Web Document Title - Clickable Link
Snippet
⋮

(H)

You asked to compare:
(1) *Amoxicillin* vs. *Ciprofloxacin* (2) over *price*
Here is what I found after clarification

Web Document Title - Clickable Link
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(I)

A User Study on Clarifying Comparative Questions

Clarifying Comparison Aspects ("Which is better, Bali or Phuket?"):

- 15 predefined comparative questions, 7 participants.

- 90% of the initial vague questions were refined with suggested comparison aspects.

- 76% of the participants stated they were able to find satisfactory answers.

- Majority found clarification helpful to obtain good results.

- All enjoyed the system, however, only 15% were entirely satisfied.

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Clarifying Comparison Objects and Aspects ("What is the best antibiotic?"):

- 10 predefined comparative questions, 7 participants.
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- 60% used both, an object and an aspect clarification.
- 84% stated they had found a satisfactory answer.
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