

# Towards Understanding the Impact of Length in Web Search Result Summaries over a Speech-only Communication Channel

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## Search Results via Audio

What if output of search results were presented via a speech-only communication channel?



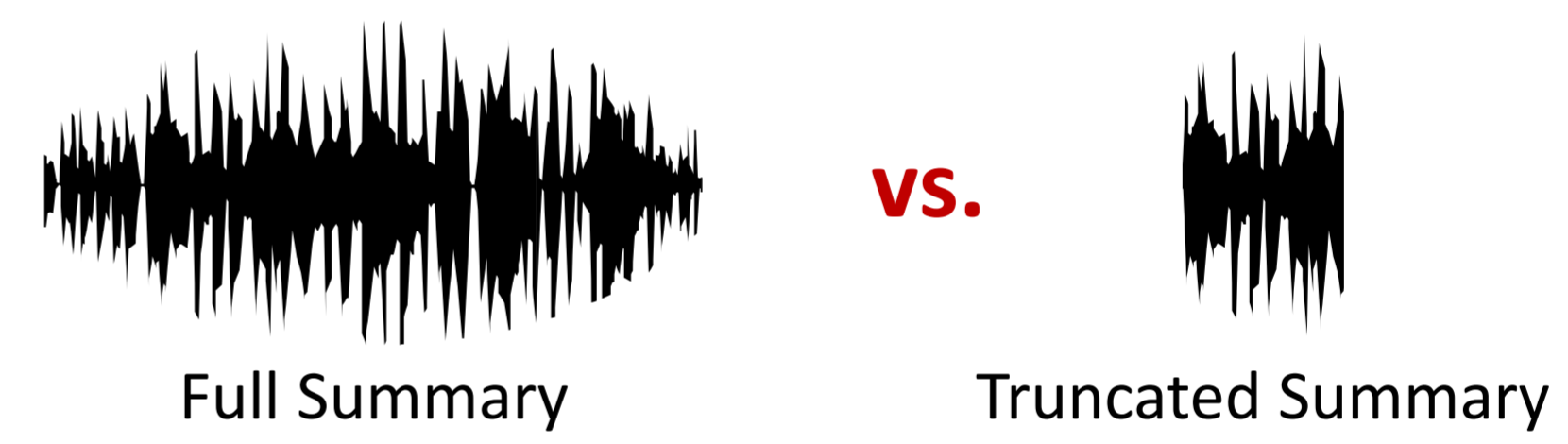
- Hands-free activities
- Mobile/wearable technology, smart environments
- Vision impaired / low-literacy populations

## Challenges

- Cognitive processing / memory limitations
- Slow, sequential, transient communication channel
  - No 'skimming', no memory aid
- Reading out text search results lists is ineffective
- Complex speech-enabled apps use screen for results lists

## Research Questions

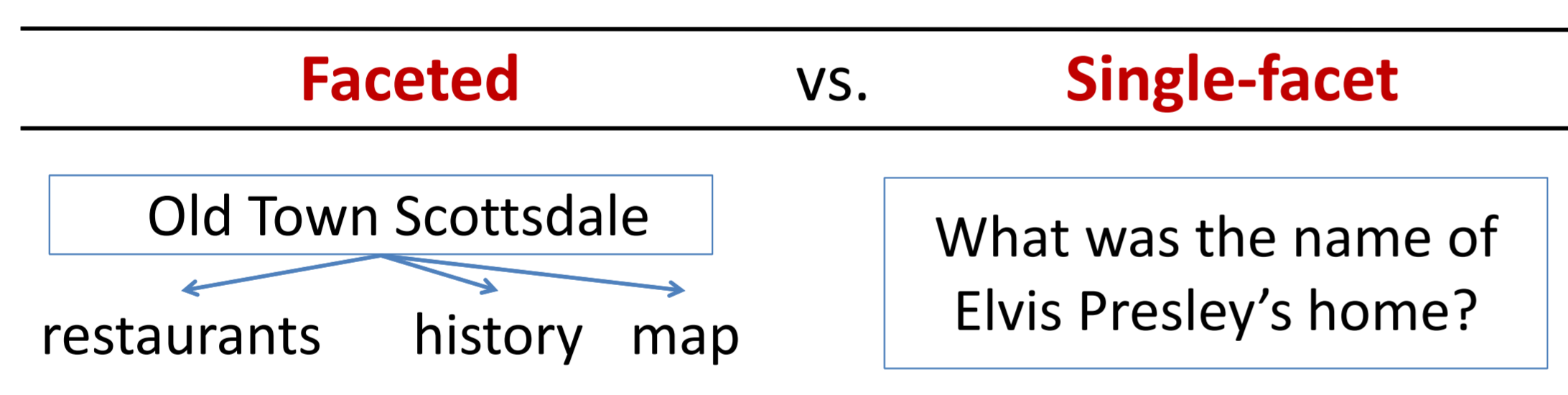
- How to better support processing of spoken results lists
  - What is impact of **length** of results summaries?
  - Are shorter spoken summaries as **effective** and **preferred** as longer more informative summaries?



## Experimental Design

Varying summary length, compare effectiveness and preference of users

- TREC 2013 Web Track queries



- Search Result Summaries
  - **Full**: Google-generated text summaries for top 5 results
  - **Truncated**: Manually selected subset of contiguous 9 words in 'Full'
- Text summaries as baseline

A) The search results you will hear answer the query:  
What are the health benefits associated with eating dark chocolate?

Link to MP3  
Did you hear a voice speak in the audio?  
 Yes, I did.  
 No, I didn't.

- User preferences from crowdsourcing platform
  - Post-task and exit questionnaires

1. The search results I heard are informative.

Strongly disagree 1 2 3 4 5 Strongly agree

2. The search results give me a good overview of the available options.

Strongly disagree 1 2 3 4 5 Strongly agree

3. The search results give me enough information to select the most relevant result.

Strongly disagree 1 2 3 4 5 Strongly agree

4. The search results are presented in a way that is easy to understand.

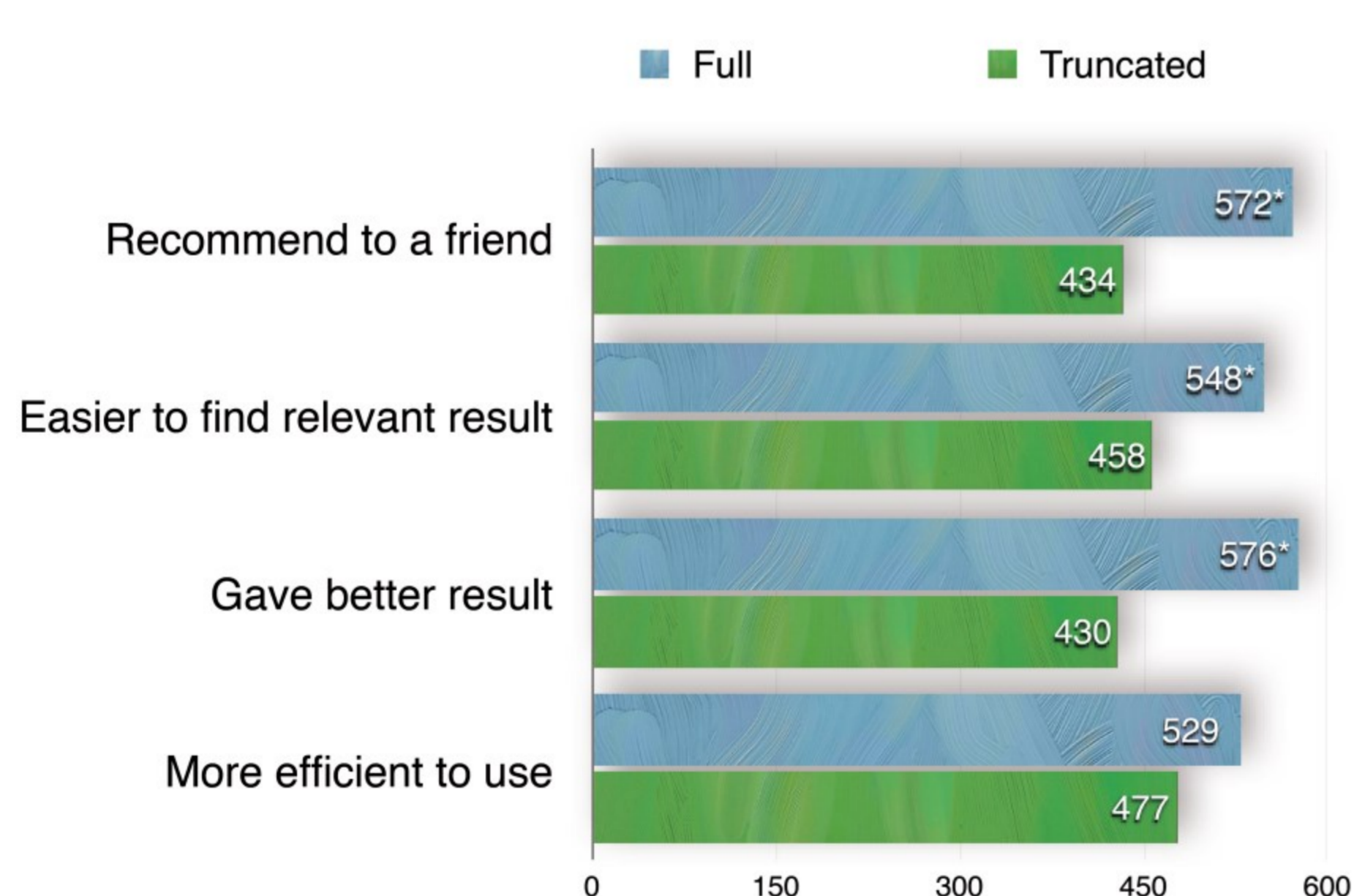
Strongly disagree 1 2 3 4 5 Strongly agree

5. I am confident I can recall the search results that I heard.

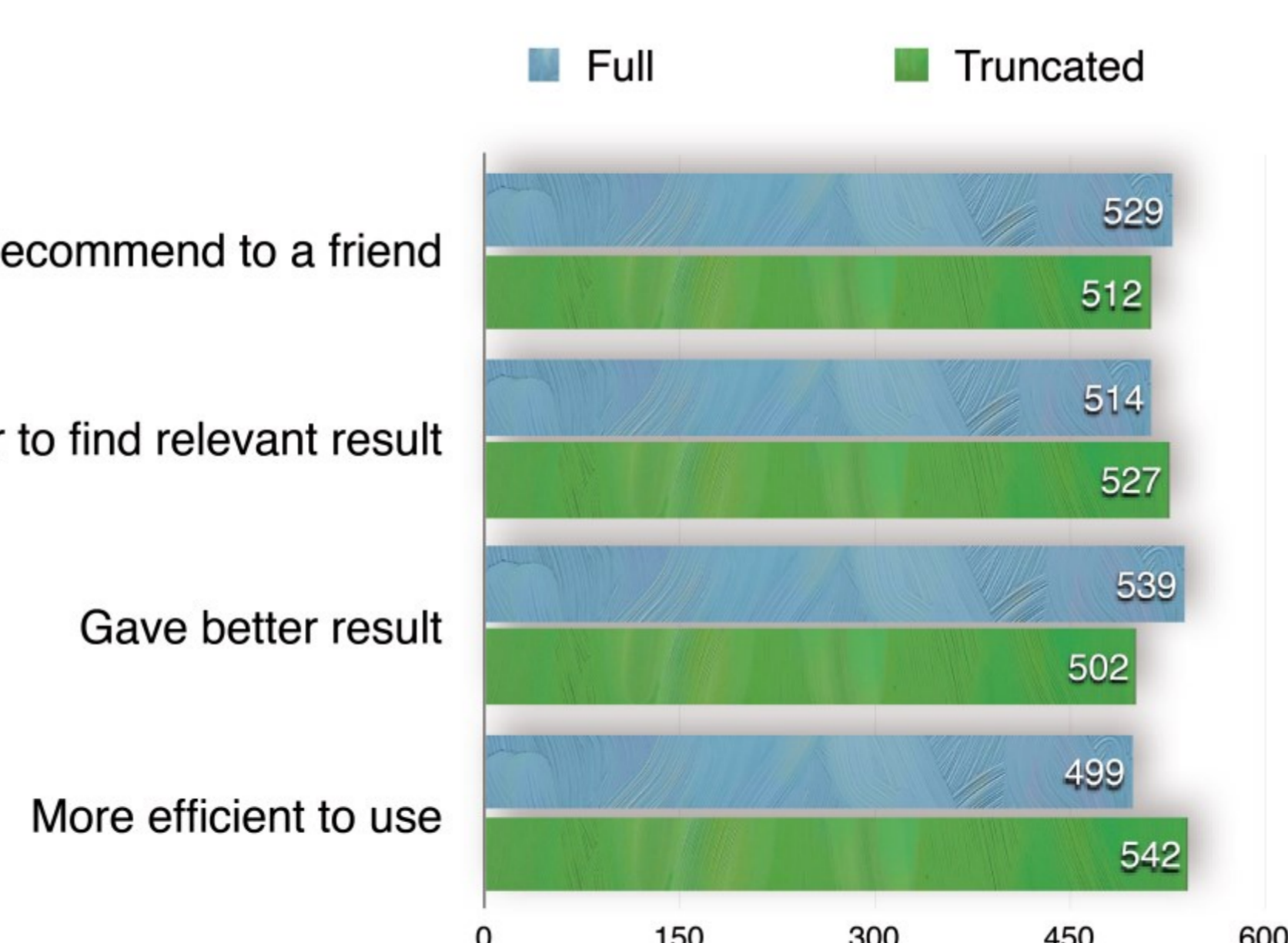
Strongly disagree 1 2 3 4 5 Strongly agree

## Results

### Text Summaries



### Audio Summaries



$\chi^2$  goodness-of-fit, \* represents statistically significant difference ( $p > 0.01$ )

## Conclusions

- No preference for longer summaries over shorter (or vice versa)
- Real differences between single-facet (simple) vs. faceted (complex) queries
- Need for more sophisticated (interactive?) approaches for result-presentation over audio for faceted queries