Clarifying False Memories in Voice-based Search

Motivation
How to communicate to the user that and how their query was corrected in a voice-only retrieval setting?
Case study: queries containing false memories.

Conclusions
- Even wrong corrections are preferable to ending the dialog
- Systems should communicate their query modifications back
- Systems should rather suggest than correct (matter of tone)

User-centric study
12 participants from a university background.
14 tasks each: find specific information by means of a tailored Amazon Alexa skill. Example task:

Scenario: You try to remember the title of a controversial book that came out in the 1990s and claimed scientific evidence that whites are genetically superior to blacks. You think its title was like “The something Factor.”

Interaction start: Alexa. Explore!
What is the title of the book from the 1990s that claimed superiority of Whites and is called “The something Factor”?

Post-interaction questions:
The system... Agree Neutral Disagree Don’t know
was helpful
behaved as I expected
was easy to hear/understand
was pleasant to use

Scenarios are based on real known-item queries from Yahoo!
Answers (dataset: Webis-KIQC-13).
Answer for the example above: „The Bell Curve“.

Should the system correct if it is unsure?

Yes: Wrong „correction” seen as better than no answer
None (no correction attempted)
Direct (corrected but not clarified)
Negatively clarified
Positively clarified

How to best clarify corrections?

In case the misremembered attribute is corrected:
Clarification is better than just giving the answer

In case an other attribute is modified (see above):
Suggest (positively clarified), do not correct (negatively clarified)

Does language fluency affect satisfaction?

Much less than in similar studies.
Possible reason: fewer own formulations needed in this one

Analyzed response types
For each type but „none“:
2 tasks: system corrects misremembered attribute.
2 tasks: system modifies other attribute (not what user intended)