

Feedback for the essay “Communication Breakdowns between Families and Alexa” by Syed Zain Ali

Declared research questions: (1) What types of communication breakdowns occur in conversations with voice assistants? (2) How do families repair these communication breakdowns?

Content: The essay starts with an introduction describing the motivation and the context for the presented research, as well as defining the research questions for the essay. Then follows a related work section that introduces the papers the essay is based on. Then two sections follow that each deal with a declared research question, divided into subchapters for different studies and providing a conclusion on the topic. At the end, there is also a general conclusion for the entire essay. The essay includes a table of contents, references, a list of abbreviations, a list of tables and a list of figures.

Strengths:

- Overall, the essay has a good chapter structure
- The research questions are clearly defined and addressed in the essay
- The selection of literature is appropriate to investigate the topic at hand and provides some interesting perspectives, such as the use of humour by the voice assistant in breakdown situations
- Examples and figures/tables are mostly used appropriately to support the presented points
- The author provides good suggestions regarding design of repair algorithms in voice assistants
- Subsection 4.7 is particularly good in concluding section 4 and the overall conclusion in section 5 features some good discussion points as well

Weaknesses:

- readability: some paragraphs are just too long and also touch upon too many topics, the readability of the essay would be improved if they had been split, especially in the introduction and section 2
- inappropriate citations: in the introduction you use verbatim quotes from [4] and [5] without identifying them as such which also leads to secondary citation from those sources' sources. This is not just messy, but strictly speaking, also counts as plagiarism. You should avoid it by either citing the primary sources such as Lunenberg or Wadensjö (either as a verbatim quote or reformulated) or rephrasing the content of the secondary sources and then giving both the primary and the secondary source as your literature references.
- sometimes the language used is inappropriate for a scientific text: either when providing too simplistic statements not confirmed by scientific evidence (such as “For humans, it’s *easy* to identify miscommunication...”, page 1) or using colloquial language and contractions (such as “To the extent, *it’s ok...*”, page 15)
- repetitions: sometimes the same point is repeated, just in a slightly different way. Repetitions across chapters are of course, acceptable, to reiterate specific points or refer to previously established information, but these repetitions often happen in the same chapter and feel redundant, for instance, in the introduction
- chapter content and structure:
 - o chapter 2 is very difficult to understand and doesn’t read like a coherent text at times. It feels like you are trying to mention all the relevant background topics, but cannot really tie them together, you jump from the definition of human-computer interaction to the role of parents and joint media attention without establishing any intermediate connection between these topics. You should have introduced your key concepts more smoothly, for example, by starting with the conceptualisation of HCI, then introducing the topic of conversation breakdowns and repair in human-human

interaction and how it transfers to HCI, then speaking about various user groups and potential differences between them – here you can start talking about the role of parents in child-computer interaction, and so on.

- some things included in sections 3.2.1 and 3.2.2 belong into the section 3.1 as they relate to the study methodology, for example, the number of participants or the length of the study
- in section 4.1 your distinction and connection between joint media engagement practices and repair strategies is unclear. It would have been better to perhaps make a list or a table for the former, similar to table 2, and then describe the connection between these two practices, e.g., that repair strategies are used within those joint media engagement practices. You also call them both strategies which makes it even more confusing to understand how they belong together.
- in section 4.3 you only present the first two As, however, in these cases it is necessary to present the entirety of the model before focussing on important aspects. Also, you don't present all relevant factors here, for example, exo factors are missing
- So what are the results of the study you describe in 4.5? This is largely missing.
- presentation of scientific results: when talking about studies, you only describe their findings in general qualitative statements. This is insufficient to give the reader a clear idea of the results. In an essay like that where the discussion of the papers is front and centre, you should include information such as statistical significance of the results, effect size and whatever other quantifiers were given by the authors. Additionally, you should include clear information on what kind of analysis was conducted and what method was used when discussing the methodology of the paper, this is missing for some papers you talk about
- missing sources for some statements: some of the statements in your analysis, while not inherently wrong, are not built up on scientific evidence and are worded in a manner that is too imprecise or lacks sufficient nuance. For example, on page 7 you talk about the difficulties of young children to code-switch and succeed at turn-taking. You claim that children at an early age are unable to take turns in conversation, but that is an incorrect framing, as children actually develop turn-taking skills very early, but they refine them throughout their childhood in a lengthy process influenced by many social and environmental factors
- factual inconsistencies such as calling regression analysis qualitative or concluding that breakdowns arise due to user errors or incorrect queries even though your examples show a different picture and you even speak about variations in pronunciation and dialects. Sometimes breakdowns simply arise due to low accuracy of machine learning models in speech recognition and natural language understanding and the lack of representative training data for different user groups.
- list of references: duplicate references in the list (7 and 15, 8 and 13), each reference should be present on the list only once and assigned a unique ID which makes it identifiable throughout the text; wrong authors given for reference number 2; incorrect publisher information for some sources: researchgate and semantic scholar are just websites where research is hosted, these papers were originally published in journals or conference proceedings, for example, source number 2 was published in the journal "Frontiers in Computer Science" volume 4.
- formatting: too much empty space at the end of certain pages, page numbers lacking in the list of tables

Further remarks:

- it's good scientific practice to add a reference to a paper every time you talk about it even if you refer to it by name in the text.

- note that the analysis in study [2] was conducted on the German conversations, select dialogues were translated solely for the paper, so the translation errors wouldn't influence the results of the study
- when you are speaking about unspecified people, I recommend using "they" instead of "he", e.g., "Mostly the person who has initiated ... needs to paraphrase their wording..." (page 11)
- Here is some information on the first-person perspective in scientific writing, just FYI: <https://abrilliantmind.blog/first-person-pronouns-in-scientific-articles/>

Given the strengths and the weaknesses of this paper, it is hereby graded with 2.3.