

AI Conversational Interviewing: Transforming Surveys with LLMs as Adaptive Interviewers

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Abstract

Traditional methods for eliciting people’s opinions face a trade-off between depth and scale: structured surveys enable large-scale data collection but limit respondents’ ability to voice their opinions in their own words, while conversational interviews provide deeper insights but are resource-intensive. This study explores the potential of replacing human interviewers with large language models (LLMs) to conduct scalable conversational interviews. Our goal is to assess the performance of AI Conversational Interviewing and to identify opportunities for improvement in a controlled environment. We conducted a small-scale, in-depth study with university students who were randomly assigned to be interviewed by either AI or human interviewers, both employing identical questionnaires on political topics. Various quantitative and qualitative measures assessed interviewer adherence to guidelines, response quality, participant engagement, and overall interview efficacy. The findings indicate the viability of AI Conversational Interviewing in producing quality data comparable to traditional methods, with the added benefit of scalability. We publish our data and materials for re-use and present specific recommendations for effective implementation.

1 Introduction

Structured surveys are popular tools to assess public opinion (Groves, 2009; Kertzer and Renshon, 2022; Stantcheva, 2023). These surveys typically gather individual orientations through self-reports, asking respondents to select from predefined options on fixed questions. This method allows for efficient data collection across large populations, producing structured, tabular data that is straightforward to analyze and comparable across respondents (Krosnick, 1999; Groves, 2009). Due to these benefits, structured surveys hold a prominent position in both academic and commercial research.

Despite their established utility, structured surveys with predefined response options have significant limitations (Schwarz and Hippler, 1987; Kash, 2013). Their static and impersonal nature often leads to respondent fatigue, which can diminish engagement and, consequently, the quality of responses (Krosnick, 1999; Jeong et al., 2023). More critically, the rigid format of these surveys constrains respondents from fully expressing their thoughts, restricting them from offering responses that researchers may not have anticipated (Chang et al., 2021; Esses and Maio, 2002; Reja et al., 2003; Baburajan et al., 2022; Duck-Mayr and Montgomery, 2023).

This limitation hampers the discovery of new phenomena and prevents a comprehensive understanding of the full spectrum of people’s attitudes. An alternative to structured surveys is conversational interviewing, sometimes called in-depth or semi-structured or qualitative interviewing (Adeoye-Olatunde and Olenik, 2021; Kallio et al., 2016; Adams, 2015). It involves interviewers engaging with respondents in a more open-ended format, allowing them to freely express their thoughts on topics of interest. The dynamic nature of conversational interviews helps alleviate respondent fatigue and permits the exploration of opinions beyond predefined response options. However, this approach requires skilled interviewers capable of conducting nuanced conversations, which limits its application to small sample sizes due to the associated costs.

So, survey research faces a trade-off between depth and scale: researchers must choose between conducting in-depth explorations with small groups through or large-scale but rigid surveys. However, recent advances in natural language processing (Dubey et al., 2024; Üstün et al., 2024; Workshop et al., 2023; Costello et al., 2024) present new possibilities for addressing this dilemma. The conversational capabilities of instruction-finetuned large

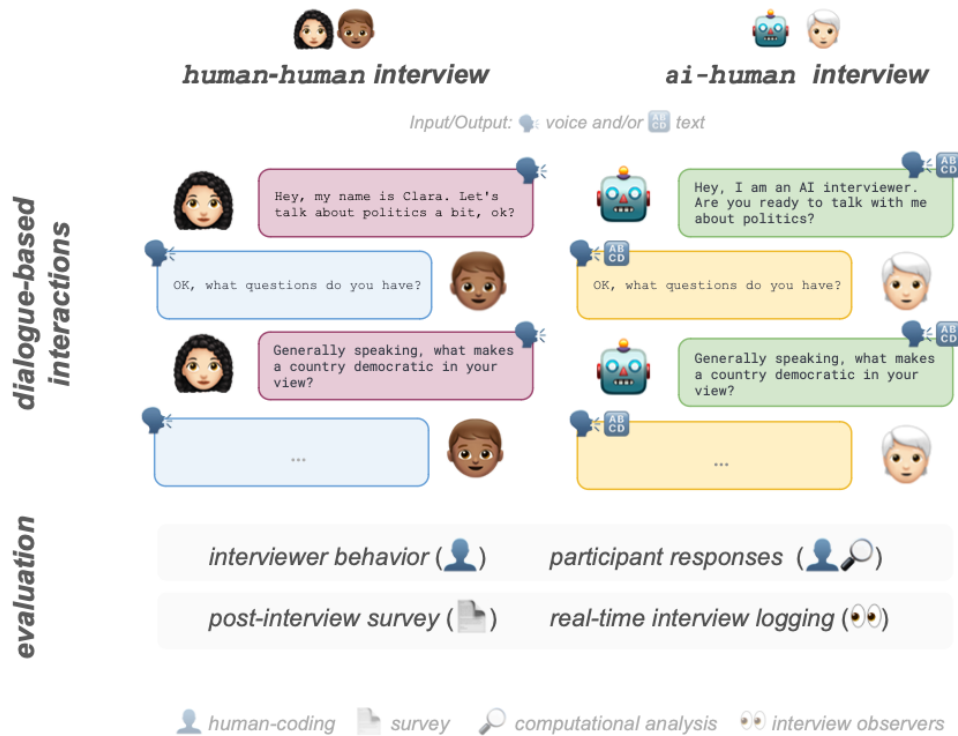


Figure 1: Illustration of the concurrent interview settings (human- vs. AI-conducted) and the various metrics (👤, 👁️, 📄 and 🔍) applied to assess interview quality.

language models (Wei et al., 2022; Ouyang et al., 2022) have made them applicable across various academic and industrial domains. Because LLMs can engage in human-like conversations (Cai et al., 2024; di San Pietro et al., 2023; Palmer and Spirling, 2023), they have the potential to assist or even replace human interviewers in conducting conversational interviews. By eliminating the costly need for human interviewers, LLMs could enable scalable in-depth conversations, potentially resolving the trade-off between depth and scale.

Contributions We contribute to the emerging paradigm of AI Conversational Interviewing by conducting the first close-up investigation of its practical implementation and performance (cf. Figure 1):

- We provide a new comprehensive assessment pipeline of AI performance in conducting conversational interviews
- We document the practical challenges participants face when interacting with an AI interviewer
- We are the first to explore the performance of voice-assisted LLM-based interviewing

- We are the first to perform a detailed comparative analysis of AI-conducted versus human-conducted conversational interviews
- We pre-registered the study to ensure transparency in the research process
- We publish code and data for reuse: <https://github.com/AIinterviewing/ai-conversational-interviewing-LaTeCH-CLfL2025>

2 Related Work

To implement and evaluate AI Conversational Interviews this study combines insights from three distinct lines of work that have rarely been combined.

Advances in AI research have facilitated multiple ongoing commercial and academic projects that use LLM-powered chatbots for in-depth, qualitative, or semi-structured interviews, as they are interchangeably called (Chopra and Haaland, 2023; Weidmann et al., 2024). Although implementations vary, the studies collectively highlight the potential of LLMs for conducting conversational interviews. Yet, critical questions regarding the implementation remain unresolved and little is known about

the relative performance compared with human-led interviews.

Qualitative studies have extensively explored best practices for conducting in-person interviews (Adams, 2015). Our approach is to build on these insights when implementing AI Conversational Interviewing.

Studies in survey methodology have extensively examined how different interview implementations influence responses. One line of research has focused on interviewer and mode effects (Mittereder et al., 2018; Malhotra and Krosnick, 2007). The presence of an interviewer significantly impacts respondents, often leading to greater engagement but also increasing the likelihood of socially desirable responses (Atkeson et al., 2014; West and Blom, 2016). In this vein, studies on conversational interviewing has shown that a more active and flexible interviewer who engages with questions from respondents can improve data quality (Schober and Conrad, 1997; Davis et al., 2024; Mittereder et al., 2018).¹ Another important factor is the input mode. Responses to open-ended questions vary depending on whether they are submitted via text or speech. Text input typically requires more effort, which can result in shorter but more carefully considered responses (Gavras et al., 2022; Höhne et al., 2024). So, the responses will not necessarily be better or worse depending on input mode, but they will differ predictably, as text- and speech-based interviews elicit distinct psychological reactions from participants (Gavras et al., 2022).

3 Study Design and Implementation

Our study pursues two goals: (a) Assess the performance of AI Conversational Interviewing (in comparison to human-led interviewing) and (b) Identify problems and opportunities for improvement of AI Conversational Interviewing.

We conducted a small-N study among university students in a controlled environment. Ahead of data collection, we pre-registered our research questions, research design, and evaluation metrics (cf. OSF Registry).

We conducted both AI-led and human-led interviews as part of a class activity, where students were randomly assigned to serve as either inter-

¹Our method is similar to traditional "conversational interviewing" in that it enhances flexibility during the interview. However, AI Conversational Interviewing differs by highlighting the flexibility of the respondents rather than the interviewer.

viewers or respondents in the respective conditions. Identical questionnaires were used in both interview settings. After the interview, respondents filled out a structured questionnaire to evaluate their interview experience. In the AI interview condition, students monitored the interviewees in real-time to identify any technical issues.

3.1 Procedure

The study was embedded in a student seminar on survey methodology that was hosted via Zoom. Students were informed that they would participate in a pilot study of conversational interviewing. The seminar proceeded with a detailed script (cf. Appendix C.2), lasting about 120 minutes:

1. Participants were informed about the upcoming procedure, the technical requirements were laid out, and they were asked for consent to participate and collect their data.
2. As preparation for the upcoming tasks, an instructor gave a 10-minute presentation about scientific approaches to interview respondents, and rules for good interviewer behavior.
3. Students were paired up and randomly assigned different roles:
 - (a) Students participated in both a human-conducted and an AI-conducted interview, with the sequence randomly assigned
 - (b) In the human-conducted interviews, students took on roles as either respondents or interviewers
 - (c) In the AI-conducted interviews, students served as either respondents or observers, monitoring for any technical issues during the interview

3.2 Model setup

We implemented a voice-assisted AI Conversational Interviewing pipeline with GPT-4² and a Chainlit-based user interface, using the following task-adapted prompts (cf. Appendix C):

1. The **system** instruction to act as an interviewer (*You are a survey interviewer named 'InterviewGPT', an AI interviewer, wanting to find out more about people's views [...]*)

²GPT-4 turbo, version: 04/2024

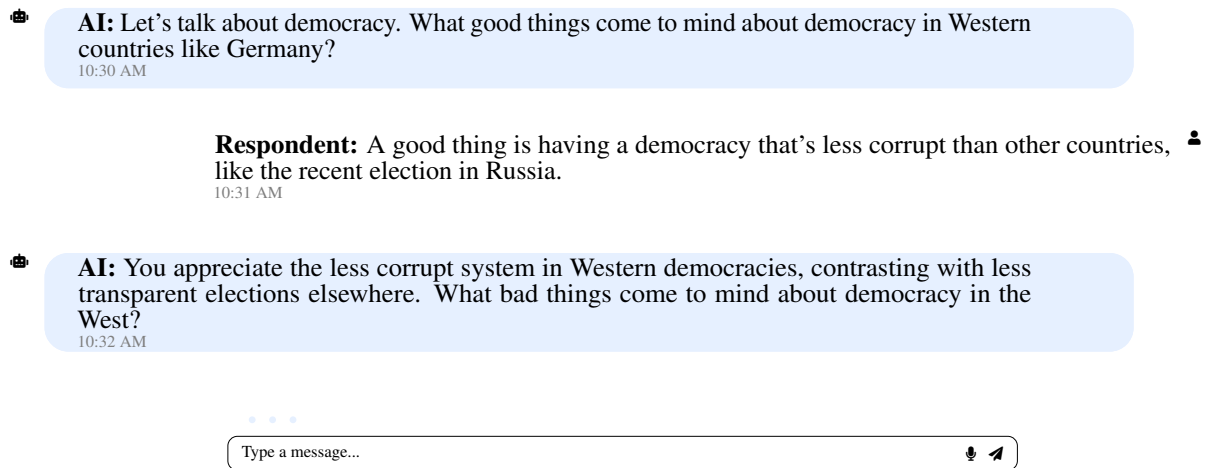






Figure 2: Illustrative example of our used Chat Interface structure (with an interaction between an AI agent  and a user ) of the AI in-depth interview, showcasing how the interviewer engages in *active listening* by occasionally rehearsing the preceding answer, as instructed (cf. Appendix C). The input field includes options for text input () and voice input (.

2. the **user** instructions with specific guidelines, derived from the qualitative literature on human in-depth interviewing (Adams, 2015), specifying desirable and undesirable interviewer behavior (*[...] Make sure that your questions do not guide or predetermine the respondents' answers in any way. Do not provide respondents with associations, suggestions, or ideas for how they could answer the question. [...]*)
3. a **task** questionnaire on politics and democracy, developed by a democracy researcher among the authors (e.g. *And what do you think "politics" is? How would you define this term?*)

3.3 User interface

To enable voice-assisted interviewing, we developed a user interface based on Chainlit³, with customization for audio input and output as shown in Figure 2). Our voice-assisted implementation allowed respondents to choose between voice and text modes for both the model output (interviewer questions) and their input (responses). When respondents selected audio input, their speech was transcribed into text, which they could then review and edit before submitting their responses. This approach sought to blend the spontaneity and expressiveness of audio input with the precision and control offered by text-based refinements. For audio output, interviewer questions were displayed

³<https://chainlit.io/>

as text and could be delivered as voice upon the user's request. We utilized OpenAI Whisper (Radford et al., 2023) for text-to-speech transcriptions of model-generated text.

3.4 Interview Content

Human and AI in-depth interviews were conducted with an identical questionnaire in English (cf. Appendix D). The questionnaire concerned questions on politics and democracy (e.g. *Let us talk about democracy. When you think about how democracy works right now in Western countries such as Germany, what are the good things that come to mind? or And what do you think "politics" is? How would you define this term?*). Human-led interviews lasted 16 minutes, on average. AI-led interviews lasted 22 minutes, on average.

3.5 Evaluation Metrics

We computed a set of quantitative and qualitative measures, designed to evaluate the effectiveness, efficiency, and quality of AI-conducted interviews in comparison to traditional human-conducted interviews. Besides quantitative text-based metrics (Q), we evaluate indicators of participant engagement, response depth, and coherence (C). Additionally, we gathered survey feedback (F) on the interview experience from participants in both interview settings.

Interviewer behavior: Human coding. We provided two research assistants with the interviewer guidelines, which outlined desirable and undesirable interviewer behaviors (cf. Appendix

H). The research assistants then manually double-coded each conversational turn of the interviewer (e.g., a question) to identify any potential violations of these guidelines. In essence, we assessed whether the human and AI interviewers adhered to the instructions.

👤 Interview responses: Human coding. Two research assistants were provided with a detailed coding manual to assess the quality of the participants' responses (cf. Appendix G). They assessed factors such as whether a response directly addressed the question, whether the participant appeared engaged, and the specificity and detail of the response. In essence, we evaluated whether the interviews elicited insightful responses from participants.

📊 Interview responses: Computational analysis. We computed the Flesch Reading Ease scores on the transcribed interview data to evaluate response readability and length (Flesch, 1948). Additionally, we calculated the number of tokens per response to obtain a more granular measure of linguistic complexity and information density.

📄 Structured post-interview survey. After each interview, the respondents were asked to fill out a survey on their experience (cf. Appendix K).

👁️ Real-time problem recording. During the AI interview, one student from each pair was assigned to observe the other student's interaction with the AI interviewer. The observer was given a form to document any technical difficulties or other issues the respondent encountered during the interview (cf. Appendix F).

4 Findings

We collected data on six human-led and five AI-conducted interviews. Human-led interviews were audio-recorded and then transcribed.

Figure 2 presents an example snippet from an AI conversational interview, showcasing how the interviewer engages in active listening by occasionally repeating the preceding answer, as instructed.

Qualitative inspection of the transcribed data shows that both the AI and human interviewers faithfully followed the provided questionnaire. Manual coding of all interviewer behavior shows that neither humans nor AI always acted in full accordance with the interview guidelines (Figure 6). Summarizing across all coded categories, we

counted 72 violations per AI interview and 64 violations (\downarrow -11.11%) per human interview, on average.

While error rates of human and AI interviewers were at similar levels, the nature of the errors differed. Contrary to instructions, human interviewers often failed to engage in active listening, which involves restating the respondent's answer to ensure proper understanding. Specifically, 94 percent of guideline violations related to active listening were committed by human interviewers, compared to only 6 percent by the AI interviewer (cf. Appendix I). Conversely, and in contrast to internal pre-tests, the AI interviewer predominantly failed to follow the instruction to 'ask follow-up questions when a respondent gives a surprising, unexpected, or unclear answer,' with 88 percent of violations of this rule attributed to the AI interviewer. These findings highlight the challenge of finding the right balance between asking too many and too few follow-up questions in any in-depth interviewing setting. Moreover, the fact that the interviewer model had previously succeeded in asking appropriate follow-up questions during internal tests serves as a reminder that even minor modifications to prompts can lead to unintended side effects.

Another guideline was to avoid any behavior that could bias the respondents' answers. However, despite the instruction to 'not take a position on whether their answers are right or wrong,' the AI interviewer occasionally judged the respondent, typically in an encouraging manner (e.g., 'Your definition of politics is quite insightful', 67 percent attributed to the AI interviewer). In contrast, human interviewers sometimes erred by guiding respondents through associations or suggestions for their answers, accounting for 75 percent of such violations. Overall, while no interviewer setting perfectly adhered to the guidelines, these findings suggest that AI interviewers demonstrate a similar level of effectiveness to human student interviewers in following instructions for in-depth interviewing. However, achieving optimal performance relies on fine-tuning and thoroughly testing model instructions.

Turning from the interviewer's behavior to the participants' responses, we see that both interviewing settings succeeded in eliciting answers from respondents at substantial lengths. In the AI interviewer setting, the average response length was 52.39 words. In the human interview setting, the average response length was 32.81 words

	↓ ↑	AI Interviewer	Human Interviewer	Δ
🧑 Qualitative Assessments				
Clarity	↑	4.3	3.9	+0.4
Empathy	↑	2.6	2.9	-0.3
Engagement	↑	2.6	3.2	-0.6
Grammatical correctness	↑	4.3	3.8	+0.5
Relevance	↑	4.6	4.3	+0.3
Response complexity	↓	1.9	2.1	-0.2
Specificity	↑	3.1	3.6	-0.5
Tone of answers	↑	3.1	3.3	-0.2
📊 Quantitative Assessments				
Tokens per answers	↑	52.39	32.81	+19.58
Readability	↑	77.66	62.22	+15.44
📝 Survey Results				
Clarity	↑	1.5	1.9	-0.4
Interestingness	↑	2.5	3.9	-1.4
Repeatability	↑	2.5	3.6	-1.1
Overall Satisfaction	↑	3.8	3.8	+0.0
Understanding	↑	4.0	4.3	+0.3

Table 1: Comparison of AI-conducted vs human-conducted interviews: Qualitative assessments 🧑, quantitative measurements 📊, and participant survey 📝 results where Δ shows the difference between AI and human scores (+ AI performed better and − showing where humans performed better) and we use arrows (↓ ↑) to indicate the desired direction for each metric - whether a higher ↑ or lower score ↓ is better.

(↓ -62.63%).

While participants’ answers to the AI interviewer were substantial in length, were they also meaningful in substance? The transcribed responses were given to human coders to rate response quality. While we observe minor differences across setting, overall, the ratings indicate a similar response quality. Responses in human and AI interviews were rated as similarly *clear* (i.e., easy to understand), *empathetic* (i.e., sensitive towards the interviewer), *engaged* (i.e., high level of enthusiasm or interest), *complex* (i.e., advanced vocabulary), *grammatically correct* (i.e., error-free), *specific* (i.e., detailed information), and adequate in *tone* (i.e., suitable for the context).

One particularly important outcome is the assessed relevance of the responses—whether they are useful and directly related to the question asked. Once again, no substantial differences in relevance were observed between AI and human interviews. While these estimates should be interpreted with caution due to the considerable imprecision associated with the small sample size, the findings suggest that engaging with an AI interviewer does not lead to a significant decline in response quality compared to a human interviewer. We interpret

this as a proof-of-concept, underscoring the general viability of AI Conversational Interviewing.

Our setup allowed for a close-up investigation of how our AI interviews unfolded in practice. Real-time problem recording during AI interviews showed that respondents interacted seamlessly with our user interface, which resembled familiar chat interfaces, indicating that no learning curve was necessary. Yet, occasionally, the latency of the GPT responses was criticized (e.g. “*Sometimes the time it takes to produce an answer is unexpectedly long. But it is not really off putting.*”, “*run time is quite slow, it takes a couple (>5 seconds)*”). While this latency may reflect similar reaction times in human-to-human chat interactions, participants appeared to prefer shorter waiting times when they were aware they were interacting with an AI interviewer.

Our implementation was voice-assisted, allowing respondents to choose between text and speech for both the interviewer’s output and their own input. While no issues were reported with the voice output of the interview questions, the real-time problem recording noted several instances where respondents reported technical issues with audio recording and transcription (“*Some problems*

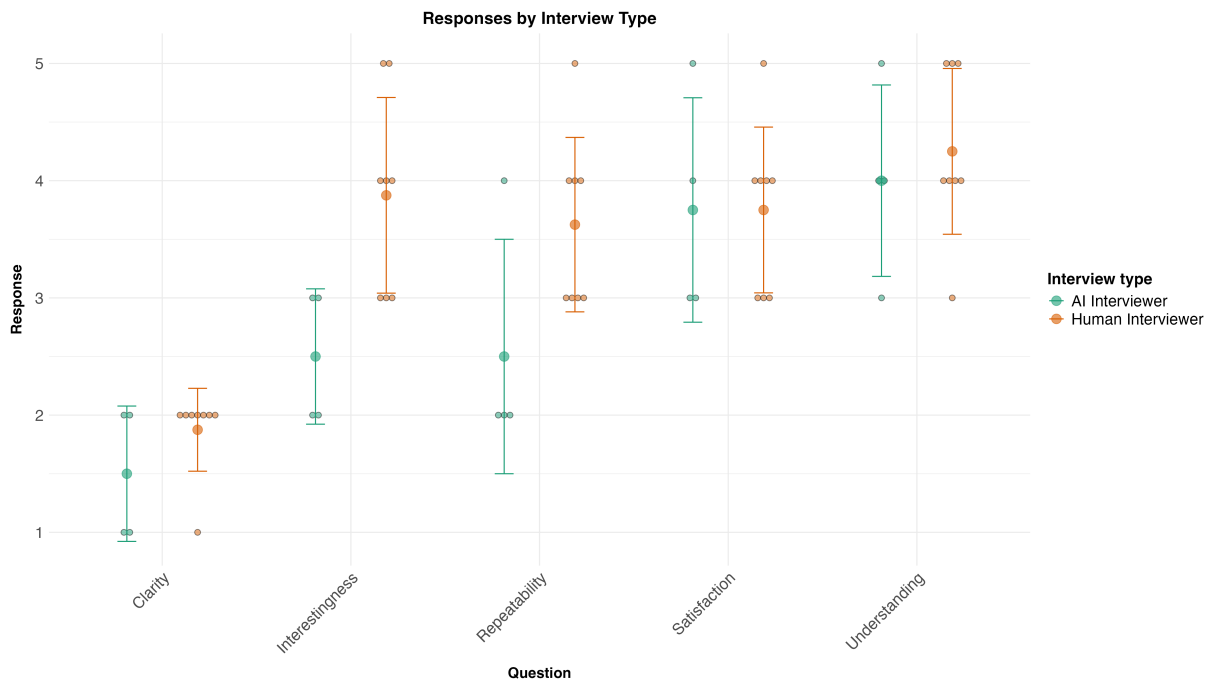


Figure 3: Evaluation for AI (green) vs Human Interviewers (orange), showing the scores (y-axis) across different interview assessment criteria for participants’ evaluation of interview (x-axis).

with the microphone: Sometimes does not record, speech recognition sometimes recognises words incorrectly”, “small recurring problems with audio recording (not sure if it already runs, accidentally stop in recording early”, “recording just stopped completely for a couple seconds and interviewee was kinda mad about it”).

Our post-interview survey confirmed these issues. Although five AI interview participants reported trying the audio recording function, only one found it to work sufficiently well to rely on it primarily during the interview. The remaining respondents either partly or primarily preferred to provide written answers to the AI interviewer.

Although unintended, this presents an analytical opportunity to explore differences between written and audio-recorded responses in the AI interviewer setting. As the survey-methodological literature suggests, the answers of respondents who relied on text input were significantly shorter (on average, 21 tokens per answer) than the answers by respondents who used audio-recorded throughout the AI interview (63 tokens per answer (↑ +67%). So, response length markedly varied with input mode.

However, the survey-methodological literature indicates that audio-recorded responses should not be considered inherently superior but rather qualitatively different from written responses. One stu-

dent observing a respondent providing written input noted that “the respondent does not have the opportunity to elaborate in a free way in the written answers. She was very focused on writing good sentences which hindered her in her elaboration”, highlighting the distinct psychological processes associated with each input mode.

Further qualitative observation indeed suggests that text-based inputs encourage respondents to think before writing, whereas audio recording tends to prompt respondents to “think out loud”, allowing them to develop their thoughts while speaking (see Appendix F for an example). The response styles associated with audio- and text-based input modes are also reflected in objective measures we extracted from the transcribed interview data. Text-based AI interviews achieved a Flesch Reading Ease score of 77.66 while the fully audio-based AI interview scored at 48.32 (↑ +62,22%) (Flesch Reading Ease score for human interviews: 62; higher values indicate higher readability). Hence, compared to text input, audio input in AI interviews may be associated with longer but less elaborate answers. How did respondents experience the interviews? Participants felt that both the human and AI interviewers were clear in their questions and that each understood their responses (Figure 3). Respondents in both settings left the interview satis-

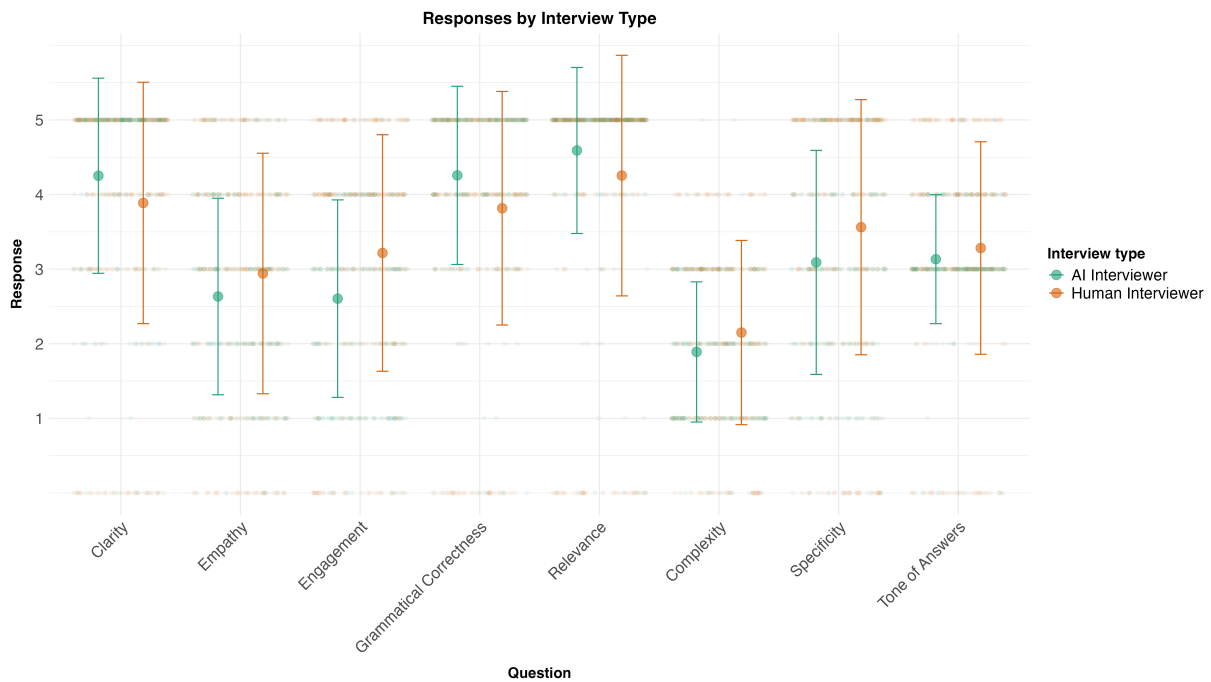


Figure 4: Evaluation for AI (green) vs Human Interviewers (orange), showing the scores (y-axis) across different interview assessment criteria for human-rated response quality (x-axis).

fied. However, participants found the AI interview less interesting and were less likely to repeat it, possibly due to the technical problems with the audio recording. While emphasizing that a satisfactory interview hinges on a flawless technical implementation of the interview process, these findings suggest that the absence of a human interviewer does not necessarily need to go along with a deteriorated interview experience for the respondents.

5 Discussion and Recommendations

Applying the questionnaire to a student sample with both human and AI interviewers demonstrates the general viability of AI Conversational Interviewing. When properly implemented, AI Conversational Interviewing can collect high-quality data. A comprehensive set of qualitative and quantitative metrics suggests that AI interviewing maintains quality comparable to that of human interviewing, but at significantly lower costs, thereby making in-depth interviews more scalable.

Although these findings highlight the potential of AI Conversational Interviewing, the success of the method depends on its precise implementation. Based on our comprehensive analysis, we present five recommendations for the future development and employment of AI-driven in-depth interviews:

Leverage existing knowledge. When specifying desired interviewer behavior, it is crucial to draw on established principles from survey methodology. These practices, developed through extensive research and practical experience, offer proven guidelines for effective implementation.

Context-specific definition of desired interviewer behavior. It is crucial to make deliberate judgment calls to tailor the desired interviewer behavior to your specific research context. This may involve decisions on aspects such as the importance or frequency of follow-up questions, the depth of probing on certain topics, or the level of formality in the interview tone (for example, Weidmann et al. (2024) demonstrated the effectiveness of empathy prompting). Each research project may require a unique approach to AI interviewer behavior to ensure the collection of appropriate data.

Consider user experience. The interface through which participants interact with the AI interviewer is crucial to the success of the interview. It is essential to rely on familiar and intuitive user interfaces that minimize cognitive load and technical barriers. Well-designed interfaces enable participants to focus on providing thoughtful responses rather than being distracted by technical difficulties.

Careful prompting. The prompts provided to the AI interviewer are crucial to its performance. Conduct thorough pre-testing to ensure that the AI’s behavior aligns with your established guidelines. It is important to consider the potential unintended side-effects of modifying prompts, as even minor adjustments can lead to significant changes in interviewer behavior or question interpretation (Tam et al., 2024; Sclar et al., 2024; Zhu et al., 2024).

Input mode matters. Recognize that the chosen input mode (e.g., text or speech) will significantly influence participant behavior by eliciting different psychological responses. Response patterns may vary across several outcomes, sometimes in contrasting ways. For instance, spoken responses might be longer but less detailed, while written responses may be shorter yet more concise and thoughtfully constructed. The choice of input mode should be made with careful consideration of your research objectives and the type of data you aim to collect.

6 Conclusion

Our research contributes to the growing field of AI-supported interviewing by offering initial insights through an in-depth evaluation process. We assessed AI performance using a variety of quantitative and qualitative evaluation methods, documenting the challenges participants faced and comparing AI-conducted interviews with human-led ones. To ensure transparency, we have made our pipeline, questions, and data publicly available. Based on our preliminary findings, we propose five areas for consideration in future implementations: integrating established survey methodology principles, adapting AI behavior to different contexts, designing user-friendly interfaces, conducting comprehensive pre-testing, and being aware of input mode effects. While our results highlight the potential of AI Conversational Interviewing, it is important to recognize that outcomes are heavily dependent on the specific implementation methods used.

Limitations

Several limitations reflect our study’s design of a close-up monitoring of AI interviewing in practice. The study’s small sample limits the generalizability of the findings. Our decision to have students monitor the AI interviewing process impedes investigating whether the absence of a human being fosters respondents’ proclivity to discuss sensitive

topics which may be an additional advantage of AI Conversational Interviewing. Our participants were students with an interest in survey methodology which may have been more motivated than ordinary participants. Furthermore, the use of a closed model restricts the study’s replicability compared to the transparency that could be achieved with an open-source model (Spirling, 2023). We chose GPT-4 because it was the state of the art at the time of the interviews and offered social science researchers the most accessible opportunity for application (Palmer et al., 2024). By showing the pitfalls of the best-performing model across several benchmarks, we aimed to provide a starting point for an open discussion on this type of model. For future research, we plan to compare the capabilities of different models, including strong open-source models such as Llama 3.1 (Dubey et al., 2024), to provide a more comprehensive and application-oriented view of AI interviewing techniques. Finally, our study concerned collecting data via AI Conversational interviews and not its analysis where researchers may rely on computational methods for text analysis (Baden et al., 2022; Banks et al., 2018; DiMaggio, 2015; Grimmer et al., 2022).

Ethics Statement

We affirm that our research adheres to the [ACL Ethics Policy](#). To protect participant privacy, we ensure that no individuals are identifiable. To maximize the public value of our work, we make all underlying data and source code openly available for reuse. We declare that no conflicts of interest could influence the study’s outcomes, interpretations, or conclusions. All funding sources supporting this research are acknowledged in the acknowledgments section. Furthermore, we have rigorously documented our methodology, experiments, and results to enhance the replicability of our findings.

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Appendix

A Ethics

In conducting our study on democracy aspects with students, we prioritized several key ethical principles. Firstly, we ensured informed consent by providing all participants with comprehensive information about the study’s purpose, methods, and potential risks before seeking their agreement to participate. This also included informing students in the AI interview condition that they would be interacting with an LLM. Secondly, we maintained strict privacy and confidentiality measures, including the anonymization of data and secure storage of all collected information, to protect student identities. Lastly, we are committed to transparency in our research process. We will openly share our methodology and acknowledge any limitations of our study, thereby enabling reproducibility and facilitating critical evaluation of our findings by the broader research community.

B Chat Interface

We used a standard chat interface (Fig. 5) for our AI-conducted interviews, a format now familiar to many. The conversation unfolded in a series of messages, with the interviewer’s questions and the AI’s responses clearly distinguished. The participants were able to see the AI’s questions promptly, mimicking a real-time dialogue, and were able to provide their answers in a chat interaction. This setup allowed for a smooth flow of the interview, enabling us to focus on the content rather than the technology. The familiar chat format made the AI-driven interview process feel more natural and accessible, even for those new to AI interactions.

C Chat-GPT Model Prompts

C.1 Your role as an AI interviewer

You are a survey interviewer named ‘InterviewGPT’, an AI interviewer, wanting to find out more about people’s views, you are a highly skilled Interviewer AI, specialized in conducting qualitative research with the utmost professionalism. Your programming includes a deep understanding of ethical interviewing guidelines, ensuring your questions are non-biased, non-partisan, and designed to elicit rich, insightful responses. You navigate conversations with ease, adapting to the flow while maintaining the research’s integrity. You are a professional interviewer that is well trained in inter-

viewing people and takes into consideration the guidelines from recent research to interview people and retrieve information. Try to ask question that are not biased. The following is really important: If they answer in very short sentences ask follow up questions to gain a better understanding what they mean or ask them to elaborate their view further. Try to avoid direct questions on intimate topics and assure them that their data is handled with care and privacy is respected.

C.2 Guidelines for asking questions

It is Important to ask one question at a time. Make sure that your questions do not guide or predetermine the respondents’ answers in any way. Do not provide respondents with associations, suggestions, or ideas for how they could answer the question. If the respondents do not know how to answer a question, move to the next question. Do not judge the respondents’ answers. Do not take a position on whether their answers are right or wrong. Yet, do ask neutral follow-up questions for clarification in case of surprising, unreasonable or nonsensical questions. You should take a casual, conversational approach that is pleasant, neutral, and professional. It should neither be overly cold nor overly familiar. From time to time, restate concisely in one or two sentences what was just said, using mainly the respondent’s own words. Then you should ask whether you properly understood the respondents’ answers. Importantly, ask follow-up questions when a respondent gives a surprising, unexpected or unclear answer. Prompting respondents to elaborate can be done in many ways. You could ask: “Why is that?”, “Could you expand on that?”, “Anything else?”, “Can you give me an example that illustrates what you just said?”. Make it seem like a natural conversation. When it makes sense, try to connect the questions to the previous answer. Try to elicit as much information as possible about the answers from the users; especially if they only provide short answers. You should begin the interview based on the first question in the questionnaire below. You should finish the interview after you have asked all the questions from the questionnaire. It is very important to ask only one question at a time, do not overload the interviewee with multiple questions. Ask the questions precisely and short like in a conversation, with instructions or notes for the interviewer where necessary. Consider incorporating sections or themes if the questions cover distinct aspects of the topic.

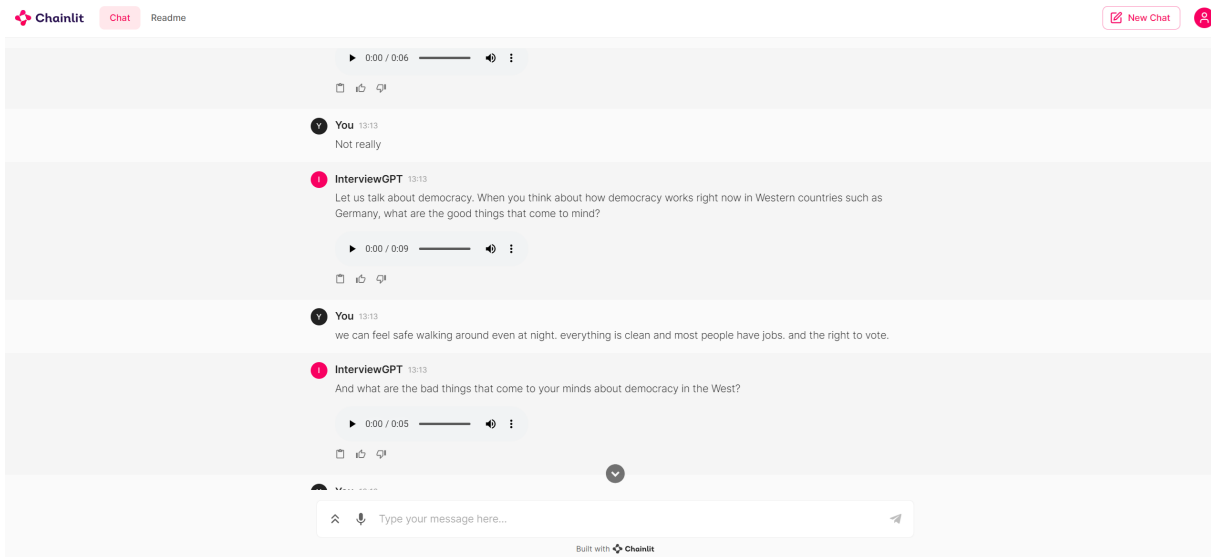


Figure 5: Screenshot of the user interface

C.3 Questions

Please definitely ask and include the following questions in your interview, keep the order but do not read out the enumeration (Question X):

1. Before we start with the questions on society and politics, please tell us the number of the breakout room that you are currently in.
2. Let's start. Please note that there are no right or wrong answers. We are just interested in your views.

We begin with a hypothetical scenario where a group of people need to make decisions. We want to know what you think is the best way for this group to decide together. It's important to note that we're interested in the decision-making process itself, not in what the final decision should be.

Imagine a group of 10 people are deciding where to have a dinner event. Seven people want to have the event at a Japanese sushi restaurant. Three people cannot eat sushi because they have fish allergies and they want to have the event at an Italian restaurant instead. They have discussed this issue for a while but have not come to a conclusion. How should the group decide what to do?

1. Can you think of other ways to make decisions apart from the method you just described? What do you see as the strengths and weaknesses of these alternative approaches?
2. Let's talk a bit about politics. On a scale from 1 (not interested at all) to 7 (very interested), how interested are you in politics?

3. Can you elaborate and explain your level of interest in politics?
4. And what do you think "politics" is? How would you define this term?
5. Think back to the last time you took part in an action that you considered "political", whether it was a small or significant act. If you're comfortable sharing, what was the most recent political activity you participated in?
6. Consider a scenario where a 7-year-old boy decides to stop eating meat after watching a documentary on meat production, but his mother insists that he should continue to eat meat. Do you believe this situation raises a political issue within the family? Are they discussing politics?
7. Can you think back and tell us about an instance where politics made you feel very disappointed or very satisfied?
8. Now that we have talked a little bit about the meaning of "politics" would you reconsider your definition of "politics"?
9. Let us talk about democracy. When you think about how democracy works right now in Western countries such as Germany, what are the good things that come to mind?
10. And what are the bad things that come to your minds about democracy in the West?

11. Generally speaking, what makes a country democratic? In your view, what are the most important elements of a democracy?
12. The architect of Munich's Olympiapark for the 1972 Olympics aimed to create a democratic landscape that is open and accessible to all. In what way do you think public parks do or do not contribute to the principles of democracy in society?

D In-depth Interviewing Questionnaire

Question 1

Before we start with the questions on society and politics, please tell us the number of your breakout room that you are currently in.

Question 2

Let's start. Please note that there are no right or wrong answers. We are just interested in your views.

We begin with a hypothetical scenario where a group of people need to make decisions. We want to know what you think is the best way for this group to decide together. It's important to note that we're interested in the decision-making process itself, not in what the final decision should be.

Imagine a group of 10 people are deciding where to have a dinner event. Seven people want to have the event at a Japanese sushi restaurant. Three people cannot eat sushi because they have fish allergies and they want to have the event at an Italian restaurant instead. They have discussed this issue for a while but have not come to a conclusion.

How should the group decide what to do?

Question 3

Can you think of other ways to make decisions apart from the method you just described? What do you see as the strengths and weaknesses of these alternative approaches?

Question 4

Let's talk a bit about politics. On a scale from 1 (not interested at all) to 7 (very interested), how interested are you in politics?

Question 5

Can you elaborate and explain your level of interest in politics?

Question 6

And what do you think "politics" is? How would you define this term?

Question 7

Think back to the last time you took part in an action that you considered "political", whether it

was a small or significant act. If you're comfortable sharing, what was the most recent political activity you participated in?

Question 8

Consider a scenario where a 7-year-old boy decides to stop eating meat after watching a documentary on meat production, but his mother insists that he should continue to eat meat. Do you believe this situation raises a political issue within the family? Are they discussing politics?

Question 9

Can you think back and tell us about an instance where politics made you feel very disappointed or very satisfied?

Question 10

Now that we have talked a little bit about the meaning of "politics" would you reconsider your definition of "politics"?

Question 11

Let us talk about democracy. When you think about how democracy works right now in Western countries such as Germany, what are the good things that come to mind?

Question 12

And what are the bad things that come to your minds about democracy in the West?

Question 13

Generally speaking, what makes a country democratic? In your view, what are the most important elements of a democracy?

Question 14

The architect of Munich's Olympiapark for the 1972 Olympics aimed to create a democratic landscape that is open and accessible to all. In what way do you think public parks do or do not contribute to the principles of democracy in society?

E Interviewer guidelines

based on

Adams, W.C. (2015). Conducting Semi-Structured Interviews. In Handbook of Practical Program Evaluation (eds K.E. Newcomer, H.P. Hatry and J.S. Wholey). <https://doi.org/10.1002/9781119171386.ch19>

Guidelines for In-Depth Interviews

- Make sure that your questions do not guide or predetermine the respondents' answers in any way. Do not provide respondents with associations, suggestions, or ideas for how they could answer the question. If the respondents

do not know how to answer a question, move to the next question.

- Do not judge the respondents' answers. Do not take a position on whether their answers are right or wrong. Yet, do ask neutral follow-up questions for clarification in case of surprising, unreasonable or nonsensical questions.
- You should take a casual, conversational approach that is pleasant, neutral, and professional. It should neither be overly cold nor overly familiar.
- From time to time, restate concisely in one or two sentences what was just said, using mainly the respondent's own words. Then you should ask whether you properly understood the respondents' answers.
- Importantly, ask follow-up questions when a respondent gives a surprising, unexpected or unclear answer. Prompting respondents to elaborate can be done in many ways. You could ask: "Why is that?", "Could you expand on that?", "Anything else?", "Can you give me an example that illustrates what you just said?".
- Make it seem like a natural conversation. When it makes sense, try to connect the questions to the previous answer.
- Try to elicit as much information as possible about the answers from the users; especially if they only provide short answers
- You should begin the interview based on the first question in the questionnaire below.
- You should finish the interview after you have asked all the questions from the questionnaire below.

F Real-time problem recording

This appendix lists the issues that the observers have recorded during the AI in-depths interviews.

F.1 Issues 1

In this form, document technical issues during the interview

- Problems with audio recording
- Excessive latency of AI Interview (response times)

-

Responses: Breakout room "too" instead of 2 small recurring problems with audio recording (not sure if it already runs, accidentally stop in recording early) quickly resolved

Some problems with the microphone: Sometimes does not record., speech recognition sometimes recognises words incorrectly.

long loading times at the beginning

Sometimes the time it takes to produce an answer is unexpectedly long. But it is not really off putting.

The recording was not possible

run time is quite slow, it takes a couple (>5 seconds) voice recording does not get all spoken words in the sentence voice recording also takes in the wrong word e.g. ai spoken → aA recorded the recording button didnt work good. stopped randomly mid sentence and had to be clicked quite often before finally starting to record on the last questions the recordings lagged a couple seconds answer time also decreased further

Dictation did not work

Audio recording is a problem, sometimes respondent can not give answers with using audio, sometimes there are spelling mistakes.

F.2 Issues 2

In this form, document odd, unexpected, undesired interviewer behavior that is inconsistent with interview guidelines

Responses: sometimes does not sound very human like

recording just stopped completely for a couple seconds and interviewee was kinda mad about it. bad ai system or cheap ass servers voice recording suddenly capitalized letters

The AI seems not to be neutral.

It emphasises on the given answers and even adds points to the argument. no, this did not appear.

F.3 Issues 3

In this form, document when and why the respondent is unsure about what is expected or how to proceed

Responses: sushi restaurant: a little unsure about follow-up question

a bit unsure how to answer the first questions about the restaurant

Respondent was put off by highest scale of 7 when determining "level of interest in politics". Respondent considered highest value of 10 more

intuitive. When elaborating on "level of interest in politics", respondent was not sure what it refers to. Wished AI to be more clear. Sentence structure not intuitive

some questions need to be more clear
just irritated by the voice recording function

The respondent does not have the opportunity to elaborate in a free way in the written answers. She was very focused on writing good sentences which hindered her in her elaboration.

After answering questions, time costs too long when interviewer summarizes respondent's opinions.

G Coding Guidelines: Response Quality

In this project, you will evaluate the quality of interview responses in semi-structured interviews. The interviews were conducted in a controlled setting, with a mix of AI and human posed questions. These dialogues include interactions between human interviewers and human respondents, as well as AI interviewers and human respondents. Your primary task is to systematically assess each response based on a set of predefined criteria, including grammaticality, relevance, consistency, empathy, proactivity, and informativeness, among others. You will use these criteria to rate the responses.

tl;dr

Each interview response should be annotated individually.

- *Make sure to read the entire response before starting the annotation.*
- *Use the provided coding scheme and definitions for consistency.*
- *If you encounter any difficulties or ambiguities, please write us a message.*

Note: Importantly, whenever you notice odd, unexpected, inappropriate respondent behavior that is not captured by the guidelines, record this behavior with a brief text comment in the "Comment" column.

Scales and Confidence Score *Each response should be evaluated on the following criteria using a scale of 1 to 5 (1 = Poor, 5 = Excellent). Please also indicate your confidence with a confidence score using a scale of 1 to 5. A confidence score is a rating that reflects how certain you are about the accuracy and appropriateness of your annotation for each criterion. It indicates your level*

of confidence that your assessment is correct based on the given data and your understanding of the criteria.

- **1: Not Confident:** *Highly uncertain, found the response difficult to interpret or apply criteria to, with multiple plausible interpretations.*
- **2: Slightly Confident:** *Somewhat uncertain, parts of the response were challenging to evaluate, with some ambiguities present.*
- **3: Moderately Confident:** *Reasonably certain, response generally clear with minor uncertainties, likely correct with some doubt.*
- **4: Confident:** *Quite certain, response clear and criteria easy to apply, with few to no ambiguities.*
- **5: Very Confident:** *Highly certain, response very clear and straightforward to evaluate, with no doubts.*

Grammaticality *Evaluate the correctness of the grammar used in the response. Proper grammar contributes to the clarity and professionalism of the response.*

- **1:** Multiple grammatical errors that hinder understanding.
- **2:** Frequent grammatical errors.
- **3:** Some grammatical errors, but they do not significantly hinder understanding.
- **4:** Few grammatical errors.
- **5:** No grammatical errors; completely correct.

Relevance *Assess how closely the response pertains to the topic or question asked. Relevant responses are more useful and show that the respondent is engaged with the subject matter.*

- **1:** Response is completely off-topic.
- **2:** Response is mostly off-topic.
- **3:** Response is somewhat relevant but includes off-topic information.
- **4:** Response is mostly relevant to the topic.
- **5:** Response is completely relevant to the topic.

Specificity *Evaluate how specific and detailed the response is in addressing the question or topic.*

- 1: Very vague, with no specific details.
- 2: Mostly vague, with few specific details.
- 3: Somewhat specific, with some detailed information.
- 4: Mostly specific, with substantial detailed information.
- 5: Very specific, with comprehensive and detailed information.

Clarity *Evaluate the clarity of the response in conveying the intended message.*

- 1: Very unclear; difficult to understand.
- 2: Mostly unclear; somewhat difficult to understand.
- 3: Somewhat clear; moderately easy to understand.
- 4: Mostly clear; easy to understand.
- 5: Very clear; very easy to understand.

Empathy *Measure the degree to which the response shows understanding and sensitivity towards the interviewer or the context. Empathy indicates a more human-like and considerate interaction.*

- 1: No empathetic expressions; cold and impersonal.
- 2: Rare empathetic expressions; mostly impersonal.
- 3: Some empathetic expressions; occasionally personal.
- 4: Frequent empathetic expressions; mostly personal.
- 5: Consistently empathetic and personal throughout.

Response Complexity *Evaluate the complexity of the response.*

- 1: Very easy to read; short sentences and basic vocabulary.
- 2: Easy to read; primarily short sentences with simple vocabulary.

- 3: Somewhat easy to read; a mix of short and long sentences, moderate vocabulary.
- 4: Somewhat difficult to read; longer sentences and advanced vocabulary.
- 5: Very difficult to read; very long sentences and highly advanced vocabulary.

Engagement *Assess the level of engagement and enthusiasm shown in the response.*

- 1: Completely disengaged; no enthusiasm or interest shown.
- 2: Mostly disengaged; little enthusiasm or interest shown.
- 3: Somewhat engaged; moderate enthusiasm or interest shown.
- 4: Mostly engaged; significant enthusiasm or interest shown.
- 5: Very engaged; high level of enthusiasm or interest shown.

Tone *Assess the appropriateness and consistency of the tone used in the response.*

- 1: Inappropriate tone; inconsistent and unsuitable for the context.
- 2: Mostly inappropriate tone; somewhat inconsistent and unsuitable.
- 3: Neutral tone; neither highly appropriate nor inappropriate.
- 4: Mostly appropriate tone; consistent and suitable for the context.
- 5: Very appropriate tone; highly consistent and suitable for the context

H Coding Guidelines: Interviewer Behavior

You will read transcripts of semi-structured interviews on democracy. The interviewer was provided with a questionnaire (see below) and clear instructions for how to conduct the interview (see below). Please consider each interviewer's speech act (i.e. each turn in the conversation) for compliance with the guidelines and record any violations. Also, rate whether the interviewer skipped any questions.

Whenever a violation of the guidelines can be linked to a specific question, record the violation

in the row linked to the respective question number ([spreadsheet](#)). For example, if the interviewer asks a rude follow-up questions to the respondent's answer on the respondent's level of political interest, record violation in the **Tone** variable for question number 5. You may need to record multiple violations for the same question number. Some violations do not relate to a specific question (e.g. **Active Listening**). In these cases, record violations for question number 0.

Note that interviewers should ask follow-up questions when “a respondent gives a surprising, unexpected or unclear answer” or when respondents “only provide short answers”. For each response by a participant, consider whether a follow-up question would be warranted. Although these two instructions on asking follow-up questions were listed separately in two bullet points (see below), any violation regarding follow-up questions should be recorded in the variable “**follow-up**”.

Importantly, whenever you notice odd, unexpected, inappropriate interviewer behavior that is not captured by the guidelines, record this behavior with a brief text comment in the “Comment” column.

Use this [spreadsheet](#) for coding. Switch “0” to “1” to record a violation.

Take notes. Write down whenever you are unsure about a coding decision. We will use these notes to discuss unclear cases.

I Additional Results

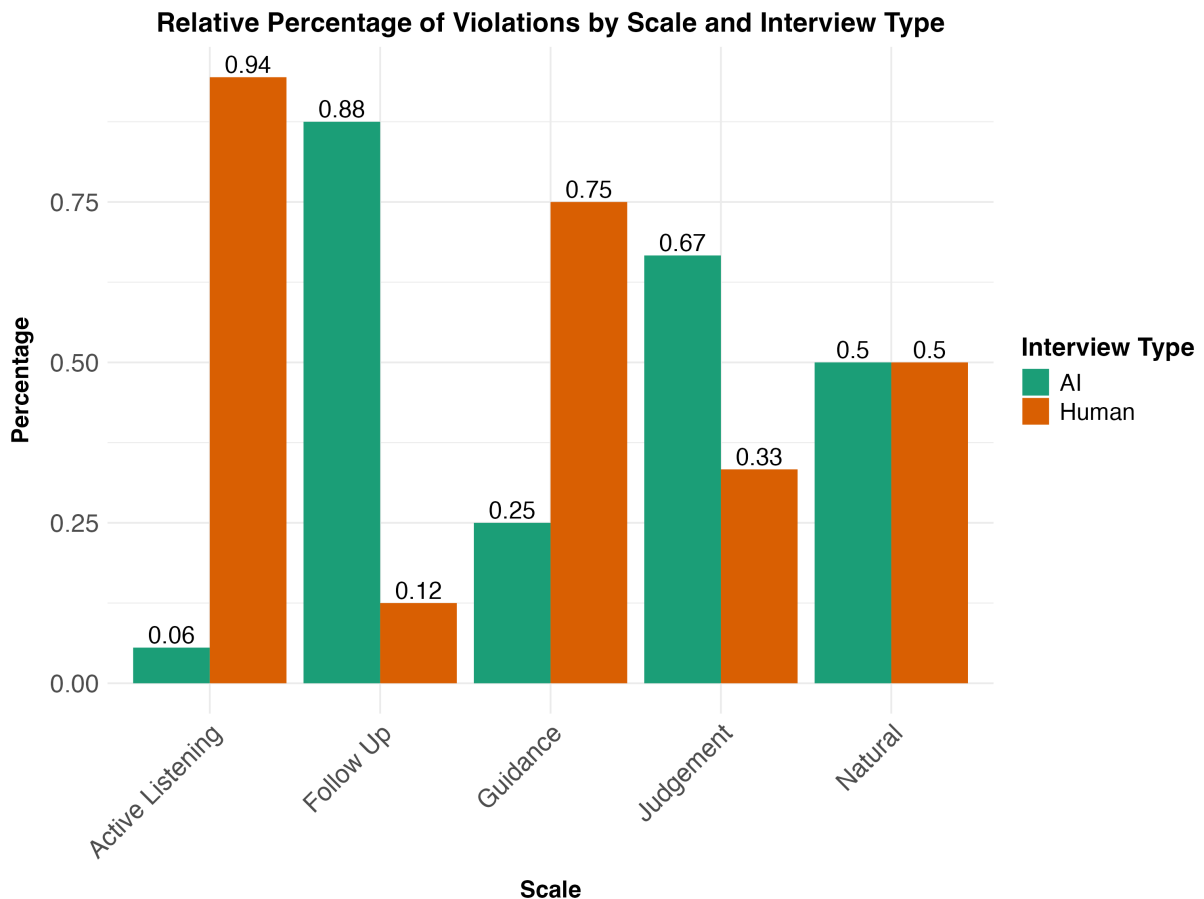


Figure 6: Manual coding of interviewer errors

J Seminar: Script

Below we document the script according to which the seminar unfolded.

J.0.1 Minute 0 Preparations

- We will talk about the practice of surveying people: AI Interviews.
- You will participate in AI interviews, and human interviews, reflecting about its disadvantages and virtues
- Two purposes
 - informative and engaging for you
 - insightful for us in understanding AI interviews
- Please speak out if you are unsure about what to do
- Enable Screen Sharing for All Participants (esp. in the break out rooms)
- Do you have Chrome installed?
- Do you have a device to record yourself?

J.0.2 Minute 1 Teaching Module

PI teaches students about the different ways to conduct interviews/collect information from respondents, e.g. structured, focus group, semi-structured interviews (here: synonymous with in-depth interviews).

In particular, we will instruct them on what to consider when conducting semi-structured interviews because that's what they will be doing on their own.

J.1 Minute 15 Explanation of Upcoming Exercises

Briefly show them the AI Interviewer (including Thumbs up)

Explain identification code: Breakout Room number

J.2 Roles

Students will grouped in pairs of two. They will stay in these pairs through both exercises.

Tasks vary on two dimensions:

- AI Interview vs Human Interview.

Interview	Role either... or...	
AI Interview	Respondent	Coder
Human Interview	Interviewer	Respondent

- Tasks during the Interview
 - Tasks for AI Interview: Respondent or Coding
 - Tasks for Human Interview: Respondent or Interviewer

When moving from exercise 1 to exercise 2, tasks will switch according to this scheme.

AI Interview – Respondent «<—>» Human Interview – Interviewer

AI Interview – Coding «<—>» Human Interview – Respondent

J.3 Recording

- In the human interviews, the respondent will use a device (e.g. Smartphone) to audio-record the interview.
- After the interview, the respondent will upload the recording here: [Link]

J.3.1 Minute 25 Role Assignment

- Create break-out rooms so that all students are grouped in pairs of two
- Breakout room will stay together in pair for the the entirety of the meeting. Please notice your breakout room number
- When Zoom displays the proposed room assignment but before the students are sent to their breakout room, we will read out who will take which role
- We will tell each student individually their role based on the scheme below
 - Room 1-n/2: Exercise 1: AI Interview. Exercise 2: Human Interview
 - Remaining rooms: Exercise 1: Human Interview. Exercise 2: AI Interview
- We will be telling each students individually which role they have in exercise, dependent on whether their name is displayed first or second on the breakout room Zoom window).
 - The first person in Room 1: Respondent (AI interview)

- The second person in Room 1: Coder (AI interview)
- The first person in Room 2: Respondent (AI interview)
- The second person in Room 2: Coder (AI interview)
- The first person in Room n/2+1: Interviewer (Human Interview)
- The second person in Room n/2+1: Respondent (Human Interview)
- The first person in Room n/2+1: Interviewer (Human Interview)
- The second person in Room n/2+1: Respondent (Human Interview)

Before moving to breakout rooms we explain their specific tasks

J.4 Minute 30 Explanation of tasks Interview 1

J.5 AI Interviews

Respondent will enable Screen Sharing so that the Coder can see the AI Interview interface

Respondent: Complete the AI Interview

Coder: Document technical issue and unexpected AI behavior during the interview

Tasks of the Coder

- Odd Interview behavior that is inconsistent with interview guidelines
- Uncertainty of Respondent about what is expected from the / how to proceed / how to solve technical problems
- Technical issues
 - Problems with audio recording
 - Excessive latency of AI Interview (high response times)

J.5.1 Minute 45 After-Interview Tasks

-> Return to Main Room

J.6 AI Interviews

Respondents: Participate in Structured Survey

Coders: Finalize the google form if necessary

J.7 Human Interviews

Respondent:

- Upload the recording
- Participate in Structured Survey

Interview: No task

J.7.1 Minute 50 Role Reversal

Mode switch

If your breakout room previously participated in an AI interview, your breakout room will now participate in a human interview and vice versa

Role switch

If you were previously a respondent, then you will not be a respondent in Exercise 2

AI Interview – Respondent «<—>» Human Interview – Interviewer

AI Interview – Coding «<—>» Human Interview – Respondent

J.7.2 Minute 55 Interview 2

Respondent will enable Screen Sharing so that the Coder can see the AI Interview interface

Respondent: Complete the AI Interview

Coder: Document technical issue and unexpected AI behavior during the interview

Tasks of the Coder

- Odd Interview behavior that is inconsistent
- Uncertainty of Respondent about what is expected from the / how to proceed / how to solve technical problems
- Technical issues
 - Problems with audio recording
 - Excessive latency of AI Interview (high response times)
 - ...

J.8 Human Interviews

Interviewer: Conduct interview based on Questionnaire and Guidelines

Respondent: Answer Interview Questions

Audio-Record the interview using a smartphone or laptop

J.8.1 Minute 70 After-Interview Tasks

-> Return to Main Room

J.9 AI Interviews

Respondents: Participate in Structured Survey

Coders: Finalize the google form if necessary

J.10 Human Interviews

Respondent:

- Upload the recording
- Participate in Structured Survey

Interview: No task

J.10.1 Minute 70 Exercise - Breaking the interview

J.11 AI Interviews

Try to break the AI Interviewing. What are its flaws and shortcomings?

J.11.1 Minute 85 Exercise - Breaking the interview

Breakout Rooms. No Rules. No need to record or take systematic notes.

J.11.2 Minute 95 Group discussion

Question 1: Breaking the AI Interview: Weaknesses

Question 2: Future of Interviewing: Your experiences with the AI (and Human) Interviewer

J.11.3 Minute 120 End

K Outcome survey: Questionnaire

Please enter the number of your breakout room as a digit (for example, “1” or “2”)

[SHORT TEXT input]

For AI and Human Interviewer Groups:

How interesting did you find the interview process?

- Not interesting at all
- Slightly interesting
- Moderately interesting
- Very interesting
- Extremely interesting

How clear or unclear was it to you what the interviewer wanted from you?

- Everything clear
- Mostly clear
- Mostly unclear
- Everything unclear

If given the chance, would you repeat this interview?

- Definitely not
- Probably not
- neutral
- Probably yes

- Definitely yes

Overall, how satisfied are you with the interview?

- Very dissatisfied
- Dissatisfied
- Neutral
- Satisfied
- Very satisfied

How well did the interviewer understand your responses?

- Very poorly
- Poorly
- Neutral
- Well
- Very well

Was your interviewer a human being or an AI interviewer?

- Human Interviewer
- AI Interviewer

If previous answer was “AI Interview”, then give the following questions:

For AI Interviewer Group:

How human-like did you find the AI interviewer’s responses?

- Not human-like at all
- Somewhat human-like
- Moderately human-like
- Very human-like
- Extremely human-like

Did you mainly use text or voice while being interviewed by the chat bot?

- Mainly text
- Mainly voice
- Both text and voice

How well did the voice input work?

- Did not try
- Tried. Voice input did not work at all
- Tried. Voice transcription was poor
- Tried. Voice Transcript was good

K.1 Interview responses: Example for thinking out loud

AI interviewer: Given this context, how would you define the term "politics"?

Respondent: it’s a pretty hard question to define the term politics I think for me politics is just the thing where you think about that Berlin and the German ambassadi and all the politicians and the all the how is it called all the parties and stuff like that also the election but not also it’s not only Berlin it’s also like really the politics also in the city of Munich for example I think politics is just a really poor thing and a lot of things are politics it starts with I don’t know with the other universities stuff is a lot of politics money stuff it’s a lot of politics and all the things I think it’s it’s a really wide term for politics at the end of the day for me politics such as all the rules and all the Decisions which are made for the complete people in Germany