

Cultural Differences and Similarities in Perceptions of Artificial Social Agents (ASAs)

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1. Introduction

- ASA = computer-based agent that can interact with people by itself [1]
- A previous study [2] designed a standardized questionnaire to measure the perception of an ASA.
- Next, a study [3] systematically translated this questionnaire into Chinese.
- Translated the questionnaire from English to German using a similar process
- Evaluated translation & investigated cultural differences

2. Question

What are the similarities and differences in perceptions of human-ASA interactions between German and Chinese speakers?

3. Translational Steps

- Translators translated the questionnaire into German
- Ran survey with English and German questions (n=30)
- Saw how similar the answers are using Interclass Correlation Coefficient (ICC)
- The questions with a low (<0.6) ICC got new translations, which were put in another survey

4. Methods

- From the translation, created **another survey** with English and German questions (n=144) (#agents = 14)
- Calculate bias by comparing the differences in the means
- Calculate cultural differences between English questions from this study and the Chinese one [2]

Figure 1: Quality of Translation

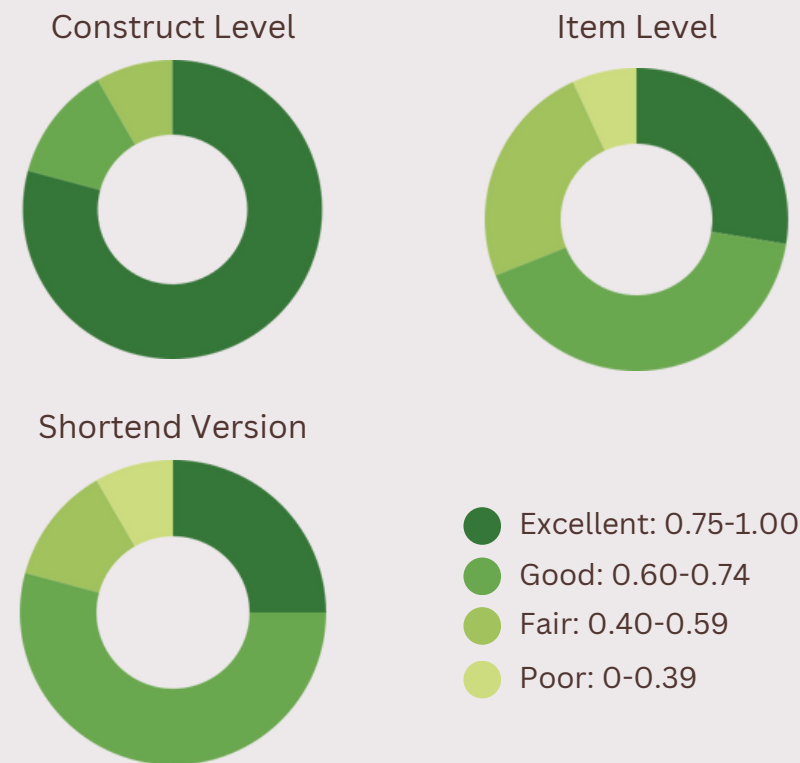
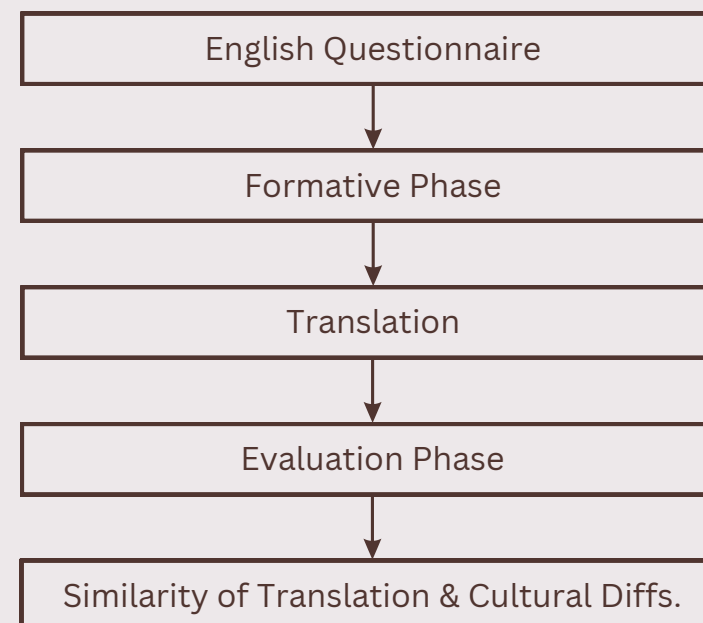


Figure 2: Overview of the Translation Steps



5. Results Culture

- Chinese people rated the following significantly higher:
 - Performance ($\Delta M = -0.32$)
 - Agent's personality presence ($\Delta M = -0.65$)
 - User acceptance of the agent ($\Delta M = -0.34$)
 - Social presence ($\Delta M = -0.36$)
- Germans rated these constructs significantly higher:
 - Agent's usability ($\Delta M = 0.39$)
 - Agent's enjoyability ($\Delta M = 0.40$)
 - Agent's attentiveness ($\Delta M = 0.33$)

6. Limitations

- Only third-person perspective, no first-person
- Chinese speakers were not in China
- Smaller sample size (Chinese paper: 242 - This paper: 144)
- Lack of backwards translation

7. Conclusion

- When using the German translation, use the long version of the questionnaire, only measure the constructs
- On average, Germans speakers are more optimistic about practicality and fun
- Generally, Chinese speakers rate performance and the way the agent fits in higher

8. References

- [1] Siska Fitrianie et al. "The Artificial-Social-Agent Questionnaire: Establishing the long and short questionnaire versions". In: Proceedings of the 22nd ACM International Conference on Intelligent Virtual Agents (2022), pp. 1-8.
- [2] Fengxiang Li et al. "Mandarin Chinese translation of the Artificial-Social-Agent questionnaire instrument for evaluating human-agent interaction". (2023).
- [3] Ravi Vythilingam, Deborah Richards, and Paul Formosa. "The Ethical Acceptability of Artificial Social Agents". In: AAMAS '22: Proceedings of the 21st International Conference on Autonomous Agents and Multiagent Systems (2022).