PARTNER MODELLING IN LINGUISTIC ALIGNMENT IN HUMAN-COMPUTER DIALOGUE: THE ROLE OF REGIONAL DIALECT

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The phenomenon of linguistic alignment has been observed in human-computer interaction (HCI), wherein people tend to linguistically align with their computer partners. For example, if a computer partner has previously used a particular term to refer to an object (e.g., *bicycle* instead of *bike*), people tend to subsequently re-use the same term (i.e., *bicycle*) rather than an alternative one (i.e., *bike*) when referring to that object (known as lexical alignment). Similarly, after hearing their partner produce a prepositional object (PO) description (e.g., *Mike gave a necklace to Emma*), people are more likely to produce PO descriptions of dative events immediately for an unrelated situation (e.g., *The doctor passed an apple to the nurse*), even though the alternative double object (DO) structure (e.g., *The doctor passed the nurse an apple*) would be equally felicitous (known as syntactic alignment). An open question is whether speakers adjust their language production in light of important attributes of the computer partner (e.g., dialectical background, age, gender). Addressing this issue, however, would not only deepen our understanding of the mechanisms underlying linguistic alignment, but also shed light on the social psychological processes underlying people's language behaviors towards computer partners.

This study aims to investigate whether older speakers take partner's regional dialect use into account when producing language to their computer partner. In two experiments, we compared older speakers' tendency to linguistically align with a Shaanxi dialect-accented (a regional dialect in northwestern China) computer partner vs. a Mandarin Chinese-speaking computer partner. In Experiment 1, we compared lexical alignment with the two different partner types in a between-participant design, while in experiment 2, we compared syntactic alignment with the two different partner types in a between-participant design. In each experiment, Chinese seniors (Expt. 1: a total of 71 participants aged from 60 to 88 years old; Expt. 2: a total of 71 participants aged from 60 to 86 years old) were randomly assigned to one of two experimental conditions where their computer partner spoke in Shaanxi dialect or Mandarin Chinese. They were told that they would take turns with their computer partner to describe and match pictures.

Results showed that, firstly, older adults demonstrated alignment with their computer partner at both lexical and syntactic levels. Specifically, in either type of computer partner, older adults were more likely to produce a disfavored name when their partner had used a disfavored name than when the partner had used a favored name in the interaction task (Expt. 1). Similarly, in either partner type, older adults were more likely to produce DO structures when their partner had previously used a DO description than when the partner had used a PO description in the interaction task (Expt. 2). Secondly, the magnitude of syntactic alignment was influenced by the computer partner's dialect use. Syntactic alignment was stronger when

interacting with a computer partner using Shaanxi dialect, compared to a computer partner using Mandarin Chinese (alignment effect: 0.192 vs. 0.106; Expt. 2). However, the computer partner's Shaanxi dialect use (versus Mandarin Chinese) did not significantly impact the lexical alignment effect in human-computer dialogue (alignment effect: 0.809 vs. 0.810; Expt. 1).

Overall, this study contributes to the understanding of socially-mediated mechanisms underlying linguistic alignment. The findings highlight the potential of linguistic alignment to shape user behavior in HCI and offer practical implications for spoken dialogue system design in influencing users' language choices during interaction.