

## Factors that contribute to the use of perspective in referent identification

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Perspective taking; Visual world paradigm; Individual differences; English

Successful comprehension requires keeping track of how a speaker's knowledge differs from one's own. However, there has been some controversy over the extent to which addressees consider a speaker's knowledge-perspective on-line. One view holds that maintaining the distinction between one's own knowledge and an interlocutor's is inherently cognitively taxing. In support, perspective information sometimes appears to be ignored [1] and lower levels of executive function correlate with decreased use of perspective [2]. A second view holds that perspective use in communication is a fundamental human faculty [3] and has immediate influences on referent resolution [4]. This view predicts perspective use should be pervasive and need not be cognitively taxing, but might be influenced by enduring personality traits (such as autistic tendencies). A third view is that socio-cultural influences determine perspective-taking difficulty. [5] found that, unlike American participants, Chinese participants almost never failed to use the speaker's perspective in a referential communication task. They argued that Chinese culture places greater emphasis on collectivism and interdependence, which facilitates consideration of others' perspectives.

The present work investigates the mechanisms of perspective use by examining the contributions of cognitive, socio-cultural, and personality factors in a referential identification task. In three experiments, American college students followed a speaker's instructions to pick up a target object (*Pick up the cup*) among three mutually known items while their eye-movements were recorded. A fourth object was also present, but only known to the addressee. This privileged object was either identical to the target object (competitor) or unique (control). Perspective use was defined as the average number of fixations to the control object minus fixations to the competitor in response to the referential description.

In Experiment 1, participants completed three additional assays: (1) a test of inhibitory control, (2) a measure of cultural interdependence, (3) a measure of social aptitude (the Autistic Spectrum Quotient). Despite a broad range of cultural interdependence scores, there was no relationship with perspective taking. Intriguingly, cognitive and personality measures were both correlated with perspective use: greater inhibitory control and greater social aptitude were each associated with increased perspective use. Post-hoc analyses revealed that these factors contributed to perspective use during different phases of the study. The effect of inhibitory control was driven entirely by first half of the experimental session ( $r=.32$ ,  $p < .01$ ), while the effect of social aptitude was driven entirely by the second half ( $r=.4$ ,  $p < .001$ ).

One explanation is that cognitive resources are necessary to acquire perspective-relevant information in a novel communicative setting. Once the procedure for extracting this information is rehearsed, there is no special difficulty maintaining the speaker's perspective and social aptitude holds sway. Experiment 2 tested this directly by manipulating cognitive load during the perspective task. Consistent with Experiment 1, cognitive load decreased perspective use only during the first half of the study and social aptitude predicted perspective use only during the second half. Experiment 3 replicated the design of Experiment 2 using language to establish mutual knowledge. The effects of cognitive load were diminished in this case, perhaps because language is a more precise means of conveying and assessing others' knowledge.

### References

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