

Title	関連性理論に基づく意図解釈の実証的検討: 認知効果・心的労力・意図解釈の関係性
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Abstract

This study empirically examines the relationship between cognitive effects and processing effort in the interpretation of speaker intent, based on Relevance Theory (Sperber & Wilson, 1986/1995). According to Relevance Theory, the human cognitive system processes information in pursuit of maximum relevance, which is determined by the "magnitude of cognitive effects" and the "minimal processing effort" required. However, previous studies have been limited in empirically clarifying how cognitive effects and processing effort interact in the interpretation of speaker intent. To address this gap, this study conducted an experiment manipulating cognitive effects and processing effort to examine their influence on intent interpretation.

The experiment involved 36 graduate students, using a within-subjects design with two independent variables—cognitive effects and processing effort—and relevance as the dependent variable. Participants were presented with conversational texts and asked to evaluate the intent of the speaker on a five-point scale, with responses analyzed in terms of interpretation certainty. The task consisted of a situational description, a two-person conversation, and two additional pieces of information. Participants were required to determine the speaker's intent only after receiving the additional information. The experiment was designed such that interpretation would remain ambiguous until additional information was provided, which was manipulated in three levels (low, medium, high) to control for cognitive effects.

Processing effort was manipulated using an adapted version of the Japanese Reading Span Task (Osaka & Osaka, 1994), in which participants performed an intent interpretation task while being subjected to working memory load. Specifically, they were asked to memorize underlined words within the conversational text, thereby adjusting processing effort in three levels (low, medium, high). After the experiment, a post-experiment questionnaire was conducted to collect individual characteristics that might confound intent interpretation.

The final sample consisted of 33 participants who correctly answered the attention check in the post-experiment questionnaire. The results showed that cognitive effects had a statistically significant influence on the interpretation of speaker intent. When cognitive effects were strong, participants exhibited higher certainty in their intent interpretation. On the other hand, the effect of processing effort was not statistically significant, and even under conditions of high cognitive effects, an increase in processing effort did not affect the accuracy or certainty of intent interpretation. Additionally, no correlation was found between the dependent variable and participant characteristics. These findings suggest that cognitive effects play a more crucial role than processing effort in the interpretation of speaker intent.

However, several methodological issues need to be addressed in future research. First, the manipulation of processing effort may not have been strong enough. The high accuracy rate in the memory task suggests that the working memory load might not have been sufficiently demanding. Future studies should consider increasing the memory load, such as by increasing the number of words to be memorized or introducing more complex working memory tasks. Second, the lack of significant effects of processing effort may be due to insufficient constraints on response time. Imposing stricter time limits for responses could help clarify the influence of processing effort. Third, since the task used short conversational texts with ample interpretative possibilities, participants may have been able to arrive at an interpretation despite the cognitive load. Given that people can

quickly interpret intent in face-to-face conversations, it may be challenging to observe the relationship between cognitive effects and processing effort in experiments using conventional expressions. However, communication is not limited to short conversations but also includes text-based communication, where sufficient time can be spent on interpretation. The results of this study suggest that in such contexts, individuals may be able to achieve thorough interpretation.

This study empirically examined the effects of cognitive effects and processing effort on intent interpretation based on Relevance Theory. The results indicated that cognitive effects were statistically significant, with stronger cognitive effects leading to higher interpretation certainty. Conversely, processing effort did not have a significant effect, as increased cognitive load did not impact the accuracy of interpretation. The findings suggest that the study's conclusions may be applicable to the interpretation of short conversations where sufficient time is available for processing. Future research should focus on further clarifying the relationship between cognitive effects and processing effort by imposing stricter time constraints on intent interpretation tasks.