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Anaphoric Inference in Expository Text: The Effects of Anaphora Type, Mention Order and Typicality of Antecedent

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Introduction

Anaphora has an important function in text comprehension. The processes of anaphoric inference are to make local coherence among sentences. The coherence constructed from several variables (e.g. Lee, 1993). The first variable is an anaphora type: noun phrase, pronoun or ellipsis. Another variable is the properties of antecedents: syntactic, semantic, or pragmatic. Yet another variable is discourse contexts such as a topic, theme, or implicit reader's knowledge. The main purpose of this study is to investigate how these variables contribute to anaphoric inference differentially in expository texts.

Experiment 1: Noun Phrase vs. Pronoun

Experiment 1 explored the effect of anaphora type with antecedent mention order and antecedent typicality. The interaction of anaphora type and mention order of antecedents expected. 67 undergraduate students are participating in the experiment. The results showed that the antecedents of the noun phrase were faster than that of the pronoun. The variables of the mention order and antecedent typicality more influenced to pronoun than noun phrase (see Figure 1). Experiment 1 showed that two types of anaphor have a very different processing mechanism in anaphoric inference.

Figure 1: Mean Recognition Time in Exp. 1 (ms)

Anaphoric Type	Typical		Atypical	
	First	Second	First	Second
Noun Phrase	684	700	729	694
Pronoun	811	870	766	810

Experiment 2: Plural pronoun vs. Singular pronoun

Experiment 2 manipulated pronoun type with antecedent typicality and antecedent mention order. The manipulation of pronoun type will provide an additional evidence for the effect of anaphora type. 67 undergraduate students are participated in Experiment 2. The main effect of pronoun type was observed. The antecedents of the singular pronoun were faster than that of the plural pronoun. This result was replicated Lee's (2004). And the effect of mention order was more influenced in singular pronoun than in plural pronouns. The effect of the antecedent typicality did not differ between singular pronoun and plural pronoun (see Figure 2). The results suggest that a syntactic cue of

pronoun have strong effect for antecedent access. This also suggested that a singular pronoun was more sensitive in text contexts rather than a plural pronoun.

Figure 2: Mean Recognition Time in Exp. 2 (ms)

Pronoun Type	Typical		Atypical	
	First	Second	First	Second
Plural	850	869	802	804
Singular	805	898	777	823

General Discussion

This study suggested that an anaphora type have a different function for anaphoric inference. A noun phrase presented for not focused antecedent or for new topic. If the noun phrase occurred in text, the noun phrase enhanced an activation level of antecedent. In pronoun, the previous activation level will be maintained (e.g. Gernsbacher, 1989). But two type of pronoun differed: A singular pronoun was more influenced by a focus or saliency of antecedents than a plural pronoun. The constraints dynamically coordinate for an optimal coherence in anaphoric inference (Kim, Lee, & Gernsbacher, 2004). And the coherence seems to be constructed gradually (e.g. Sanford & Garrod, 1989).

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