

## What is Reflected by Inter-Response Time (IRT) Data?: Comments on Mr. Isarida and Mr. Nakaya's Paper

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What is reflected by inter-response time (IRT) data? I found that this is the most important question to be asked in Mr. Isarida and Mr. Nakaya's paper. My comments on their paper are therefore focused on this question.

My first criticism is concerned with the methodological problem. Mr. Isarida and Mr. Nakaya introduced a new measuring method of organization in free recall. They used inter-response time (IRT), instead of response order, as the measure of organization. Necessary premise for the validity of such a measure is, of course, the assumption that the organizational process is reflected by IRT data. I agree with them that IRT data are important dependent variables to be taken into consideration in memory research. It seems to me, however, that IRT might be influenced by random variation or other extraneous variables. Therefore, it seems necessary to test the validity of this measure more closely under a variety of conditions. Especially, the relation between IRT data and response order data should be examined systematically because the majority of studies of organization have employed response order as the measure of organization.

My second criticism is concerned with the theoretical interpretation of the results. Given that IRT is a valid measure of organization, we are left with the task of clarifying the mechanism of organization itself. Although a number of recent studies have stressed the importance of organizational factor in memory, they have

shed little light on the mechanism of organization in memory. It seems to me that the distinction between episodic memory and semantic memory would guide us in our discussion on the mechanism of organization. Tulving (1972) distinguished between semantic memory, which he defined as "a system for receiving, retaining and transmitting information about meaning of words, concepts and classification of concepts," and what he termed episodic memory, which is concerned with "memory for personal experiences and their temporal relations." In a long line of studies of organization in free recall, the organized recall by *S* have been conceived of as the reflection of the organization of episodic traces imposed during acquisition trials. However, recent investigators, using reaction time (RT) data to study the retrieval of information from semantic memory, proposed that the information is hierarchically organized in semantic memory (e.g., Collins & Quillian, 1969). I can say that an important question unanswered in Mr. Isarida and Mr. Nakaya's paper is whether the IRT data obtained in their experiments are the reflection of organized episodic traces or the reflection of the structure of semantic memory or both. Thus, I would like to ask the question again. What is reflected by IRT data?

Finally I would like to thank the editors for providing me with the opportunity to discuss the hot topic in the field of memory with Mr. Isarida and Mr. Nakaya.

### References

- Collins, A. M., & Quillian, M. R. 1969. Retrieval time from semantic memory. *Journal of Verbal Learning and*

*Verbal Behavior*, 8, 240–247.

Tulving, E. 1972. Episodic and semantic memory. In E. Tulving and W. Donaldson (Eds.), *Organization of memory*. New York: Academic Press, 381–403.