

Chapter 5

300–500 Threshold of Context Memory and Assumption Experiment

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ABSTRACT

This chapter investigates the threshold of context memory on numbers 300 through 500 regarding perspective with assumption experiment and theories of cognitive semantics and short-term memory. Context generation became possible with text database with lexical engineering system on artificial intelligence (AI). It was realized an infinite and continuous presentation of context. Several context presentations realized the limitation of context memory on the process of continuous context presentation on numbers 500 and 2,000, as well as the representation process with judgement for memory. The first report studied the context generating machine for Japanese pun generation. This was termed “Class B engine” or “Dajare Machine.” This study focused on the examination of the context threshold using an experiment of human brain mapping on an auditory evoked magnetic field (AEF) of a magnetic encephalogram. It also focused on the analysis of the theory of cognitive semantics and folk biology, using a theory of short-term memory of the “magical number seven.”

INTRODUCTION

There was no discussion on the limitations in the memory of context in the “Poetics” of Aristotle (1949) because it is extremely difficult to generate and expose (present) the context on the over number of limitations of humans. The context-generating system of artificial intelligence (AI) was possible to generate the unlimited number of contexts. One example was the “dajare machine” (Japanese pun-generating machine), which could generate an unlimited number of contexts, with the over number of limitations of the homogeneous context. A qualitative difference was observed between over- and underlimitation on the effect of memory construction (Appendix 1).

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This chapter describes the quantitative difference in the number of contexts exposed by the assumed experiment of the auditory evoked magnetic field (AEF). The establishment of context memory was investigated with two conditions of the over and under numbers of thresholds of context memory. This chapter also presents the concept of the context memory threshold from the perspective of working memory of magical number seven and the semantic classification of taxonomy on hierarchical structure. The part of the function of the context threshold of taxonomy on hierarchical structure was reflected in the function of the long-term working memory.

The narrative and pun had a functional base of long-term declarative memory. The human memory function was classified into short-term memory and long-term memory on the property of time course of memory preservation. Long-term memory was divided into two types of memory, namely, declarative memory and nondeclarative memory, with the property of recollection for consciousness (Squire & Zola-Morgan, 1985). Tulving (1972) reported the definition of the two types of long-term memory for semantic memory and episodic memory. Semantic memory is the memory of word and word semantics and concepts and the semantics and relationships of perceptual objects, as organized memory. Episodic memory is the memory of events that individuals experience. According to Tulving, semantic memory is constructed by repeated experience, while the memory of the situation of acquisition disappears. Episodic memory is constructed by a single trial experience, while the memory of the situation of acquisition is maintained with the memory of the episode. The memory of the narrative plot and pun is constructed by a single trial experience, while the memory of the situation of acquisition disappears. The memory of the narrative plot and pun is midway between semantic and episodic memory.

The pun was possible to adopt for one narrative division with the definition of the narrative genre (Ogata, 2018), which was included and dominated by narrative factors, as the broadly defined narrative, which did not have independence of artwork and had some property of accessory and method of other artworks.

Adam (1984) described the predictability of narrative and narrative genre (fantastic story, journalism story, and laughter) of discourse. The expectations of narrative and individual narrative genre of discourse were established by the predictability of the organizational form of narrative and the individual discourse of narrative genre, which was supported by the shared knowledge between the narrator and listener and general reasoning.

In this chapter, the authors of this study discuss the threshold of context memory. A difference in the memory context was found in the process of recalling context memory with different contexts of numbers of 500 and 2,000. The process of recalling the sound file of 500 contexts provoked the sense of having already heard these sounds. This was not the same for the process of 2,000 contexts. This result indicated a limitation and threshold of context memory with numbers between 500 and 2,000. The threshold may control the status of the memory and novelty contexts, as it controls the presentation of the number of contexts.

This chapter first discusses the case study and background of the context threshold of 300–500. The case study of memory construction with “dajare machine” is the first case of overexposure (and presentation) of the context memory threshold using an AI system. This chapter presents a case study of 300 thresholds in “Shippaigaku,” the 316 cases of counseling in “A Common Casebook,” and number of limitations of 300 of Rakugo Stories.

This chapter also discusses the main focus of the assumption experiment. Study 1 shows the background of human brain mapping of the relationship between anticipation and variation of average waveform of an AEF. Study 2 shows the actual case of variation of average waveform with the anticipation of the

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