



The role of exposure to syntactic structures and discourse-driven syntactic processing in Japanese EFL learners' text comprehension

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(別紙様式3)

論 文 要 旨

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専 攻 グローバル文化

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論文題目 (外国語の場合は必ず日本語訳を併記すること)

The role of exposure to syntactic structures and discourse-driven syntactic processing in Japanese EFL learners' text comprehension

(日本人英語学習者の文章理解における統語構造への繰り返し接触とディスコース駆動型統語処理の役割)

論文要旨

Acquiring fluent ability to understand English texts has become increasingly important for English education in Japan due to rapid globalization caused by sophisticated communication and transportation technologies and services. Despite the importance of fluent reading ability in English, there are few EFL students who can read as fluently as L1 readers. There is a wide range of individual differences in the reading comprehension performance among Japanese EFL learners.

As text comprehension is a highly complex cognitive task, successful text processing depends on the coordinated operation of several component processes. An incremental interpretation of incoming words must be constructed before they fade away from immediate memory. Furthermore, according to Just and Carpenter (1992), the pool of processing resources is limited, so that increasing maintenance or operational demands impose constraints on the successful operation of all processes when demands exceed available resources. For L2 readers whose linguistic competence is limited compared with that of L1 readers, forming a coherent text representation is a task of considerable difficulty. Previous research has demonstrated that syntactic processing ability is a prerequisite for sentence comprehension. Thus, a disruption at syntax level may undermine text comprehension as a whole.

In this context, investigating the current state of Japanese EFL learners' text comprehension and developing methods to improve reading abilities, especially syntactic parsing abilities, could be beneficial for future English language education. This study aimed to explore the source of individual variability in text comprehension among Japanese EFL learners and examine whether repeated exposure to a syntactic structure might facilitate the syntactic processing ability and whether this facilitation leads to efficient reading comprehension. For these purposes, four experiments were conducted.

Experiment 1 was conducted to examine the effects of proficiency, working memory, and focusing task on text comprehension and reading behavior among Japanese EFL learners. This experiment consists of four sessions: a proficiency test, a reading span test, reading session 1, and reading session 2. In reading sessions 1 and 2, participants read an English text and a Japanese text on a computer screen and their eye movements were monitored and recorded by an eye tracker. In reading session 2, participants were divided into two groups, namely, a task group and a without task group. Participants in the task group were required to read the text looking for the key words (key word detection task). The results of the experiment indicate that proficiency is one of the major determinants of reading ability in English among Japanese EFL learners. There were no correlations between reading comprehension scores and reading span test scores in both English and Japanese. The plausible explanation for this result may be that working memory was not constrained because the materials used in the experiment were easy for the participants and, furthermore, participants could reread the sentences at their own pace. The results of reading session 2 demonstrated that the focusing task improved reading comprehension and reading behavior to some extent. Considering these results together, the importance of proficiency in text comprehension was confirmed.

Experiment 2 was conducted to examine whether Japanese EFL learners' syntactic processing affects their text comprehension performance. Short texts containing two critical sentences that together warrant a causal inference were used as experimental materials. The syntactic structure of the second sentences was either more or less difficult to parse. Results from a lexical decision task conducted immediately after critical sentences suggested that readers formed the causal inferences when the syntactic structure was less difficult to parse but that inferencing was constrained when syntactic structure was more difficult. These results support the shared resource assumption (Just and Carpenter, 1992) and demonstrated that Japanese EFL learners' text comprehension depends on successful syntactic processing.

Experiment 3 was conducted to examine whether repeated exposure to a construction embedded in texts facilitates subsequent comprehension of that construction. Specifically, the role of experience in Japanese EFL readers' relative clause comprehension was investigated. Two groups, both of which were equally placed in English proficiency and working memory capacity, were formed. Participants in the Experience group repeatedly read relative clauses embedded in texts in a training session, while the Control group read the same number of texts in which no relative clauses were included. The Experience group's comprehension accuracy improved significantly, whereas that of Control group did not. Moreover, the Less Proficient group that scored below average in the pretest improved their comprehension accuracy more than did the Proficient group. Although participants read more quickly after the training session, only the Experience group was able to read object relatives faster than subject relatives in the posttest. This study demonstrated that Japanese EFL learners' relative clause processing, especially object relative clause processing, can be facilitated by repeated exposure to relative clause structures in naturalistic discourse contexts.

It is often argued that priming is weaker in comprehension than in production. Nevertheless, robust priming effects were observed in Experiment 3. Following this result, Experiment 4 was conducted to examine whether the robust facilitative effects observed in Experiment 3 were related to discourse factors. Previous research has demonstrated that object relative clauses are used to link a new entity to the ongoing discourse. In Experiment 4, relative clause sentences were presented in isolation. The results showed no improvement in object relative clause comprehension. Accordingly, it was confirmed that discourse context plays an important role in the processing of relative clauses.

Taken together, the results of Experiments 1 and 2 demonstrated that syntactic processing ability may have considerable effects on their reading comprehension in English. The empirical results in Experiments 3 and 4 demonstrated that repeated exposure to relative clauses embedded in texts facilitated the processing of

relative clauses constructions, especially of object relative clauses. These results suggest a powerful role of experience and discourse-driven syntactic processing in language comprehension. The findings of this study emphasize the importance of frequent exposure to syntactic structures in texts and discourse-driven syntactic processing to improve text comprehension.

論文審査の結果の要旨

氏名	榊原 啓子		
論文題目	The role of exposure to syntactic structures and discourse-driven syntactic processing in Japanese EFL learners' text comprehension (日本人英語学習者の文章理解における統語構造への繰り返し接触とディスコース駆動型統語処理の役割)		
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要 旨			
<p>1. 本論文の目的および考察対象</p> <p>本論文は、外国語学習者としての中級熟達度の日本人英語学習者を対象に、心理言語学的行動実験により、統語処理の非自動性が処理資源配分プロセスを通していかに文章理解に影響を与えるのか、また統語処理プロセスはどのように学習され熟達化するのかを解明することを目指したものである。</p> <p>2. 本論文の構成と内容</p> <p>Chapter 1. Introduction では、文章理解プロセスにおいては統語構造の構築プロセスの自動化が前提となるとの認識に立ち、心内でリアルタイムに統語構造の構築が行われることでの文章理解プロセス全体に及ぼす影響の重要性が指摘される。</p> <p>Chapter 2. Literature review では、第一言語および第二言語（外国語）における文・文章理解プロセスについて、心理言語学的な側面から詳細に先行研究が検討され、日本人英語学習者の統語処理の困難性が限られた処理資源に基づいて行われる文章理解に大きく影響している可能性と、文構造への反復接触が統語構造処理の促進につながる可能性が指摘される。</p>			

<p>Chapter 3. The effects of focusing, proficiency, and working memory capacity on text comprehension: A psycholinguistic study based on eye movement data では、中級熟達度の日本人英語学習者を対象に、文章理解時の処理について熟達度・ワーキングメモリ容量を考慮した視線計測実験の結果、文章理解が言語熟達度に依存しており、視線計測から統語解析を中心とする下位処理が文章理解に影響を及ぼしていることを明らかにした。</p> <p>Chapter 4. The effects of syntactic processing on text comprehension of Japanese EFL learners では、中級熟達度の日本人英語学習者を対象に、統語処理の困難性が文章理解の高次処理の一つであり文章の一貫性構築に不可欠である因果橋渡し推論の生成を抑制することを自己ペース読み課題と語彙性判断課題を用いて明らかにした。</p> <p>Chapter 5. Repeated exposure effects on Japanese EFL learners' relative clause processing: Evidence from self-paced reading experiment では、中級熟達度の日本人英語学習者を対象に、文章中での文構造への反復接触課題により処理促進が起こるかどうかを検証した。その結果、当初処理困難であった目的格関係節処理と低熟達群とに大きな処理促進がおり、反復接触により統語処理手順の潜在学習が進むことが示された。</p> <p>Chapter 6. The role of frequency and discourse context in Japanese EFL learners' relative clause processing では Chapter 5.の文章から単独文に提示方法を変更し、Chapter 5 の結果との比較を行った。単独文では反復接触効果が小さかったことから、文章中での反復接触による統語構造が文章で果たす役割への気づきやそれに基づく予測も処理促進の一要因であることを示した。</p> <p>Chapter 7. General discussion では、4つの実験結果に基づき総合考察が行われる。中級程度の日本人英語学習者の場合、母語話者のように自動的な統語情報処理が前提とはならず、この非自動性が不完全な文章理解につながっていることが指摘される。非自動的な統語情報処理の学習可能性については、文章中での反復接触により意味と形式とのマッピングに加え、文章中での構造の役割が潜在的に学習され処理促進が起こると結論づけている。Chapter 8. Conclusion and further studies では、本論文の結論および今後の課題について述べられている。</p> <p>3. 本論文の独創性と意義</p> <p>本論文は、外国語習得途上の日本人英語学習者における、統語解析の非自動性が文章理解プロセスに及ぼす影響を心理言語学の観点から検討した点で新規であり、学習者の文、文章処理メカニズムとその発達過程の解明に大きく貢献するものである。また、外国語学習者の文章中での反復接触による統語情報処理の潜在学習の可能性と頻度情報が言語処理に与える影響について調査した研究は過去に例がほとんどなく、外国語教育の授業実践にも示唆に富んだ論文と言える。</p> <p>なお、本論文の内容に関しては、以下の通り、著書（分担執筆）1編、学術論文4編（Sakakibara, K & Yokokawa, H (2015). Repeated exposure effects on Japanese EFL learners' relative clause processing: Evidence from a self-paced reading experiment. 『ことばの科学研究』16, 35-58 など2編はレフェリー付き）を公刊している。その他、学術発表3件を行っており、国内外のさまざまな分野の研究者との交流の中で精錬されてきたものである。このような学術活動の水準からも、本論文は博士論文としてふさわしい研究成果と言える。</p> <p>以上のことから、学位申請者の榊原啓子氏は博士（学術）の学位を得る資格があると認めるものである。</p>
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