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研究課題名（和文）A Contrastive Study of Lexical Stratification in Japanese and Korean

研究課題名（英文）A Contrastive Study of Lexical Stratification in Japanese and Korean

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研究成果の概要（和文）：本研究プロジェクトでは、日本語と韓国語の語彙層のいくつかの問題に焦点を当て、音韻的、形態・文法的、意味・語用的、そして表記的な側面を統一的に分析できるモデルを提案する。この「関係音韻論・形態論」のモデルでは、それぞれの部門の表示形式が統一されていることが従来のモデルに比べて大きな利点である。また、パース記号論の三種類の記号（シンボル、インデックス、アイコン）の区別を取り入れることにより、形式と機能の結びつきが直接に言語表示レベルに反映されている。さらに、使用基盤モデルであるため、語彙層の連続的な性質を捉えるのにも適している。

研究成果の学術的意義や社会的意義

本研究は、語彙層に関する我々の理解を含めると共に、理論言語学で一般に適用できる統一的なモデルの可能性を示す。このモデルを更に発展させることにより、自然言語処理や言語教育にも貢献できると思われる。

研究成果の概要（英文）：This research project proposes a model of lexical stratification in which phonological, morpho-syntactic, semanto-pragmatic, and orthographic aspects can be analyzed in a unified way. By incorporating the distinction between symbols, indices, and icons in the representations, the model is grounded in Peircean semiotics. Moreover, the approach is usage-based, which makes it well-suited to capture the gradient nature of lexical stratification.

研究分野：言語学

キーワード：Japanese Korean lexical strata phonology morphology pragmatics semiotics pitch accent

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様式 C-19、F-19-1 (共通)

1. 研究開始当初の背景

In both Japanese and Korean, the lexicon is divided into four different **lexical strata**.

<u>Japanese</u>		<u>Korean</u>		<u>Meaning</u>
Native:	<i>kotoba</i>	Native:	<i>mal</i>	‘word/language’
Sino-Japanese:	<i>kenkyū</i>	Sino-Korean:	<i>yenkwu</i>	‘research’
Foreign:	<i>besuto</i>	Foreign:	<i>beysuthu</i>	‘best’
Mimetics:	<i>pittari</i>	Mimetics:	<i>ttak</i>	‘perfectly’

Although previous research has shed light on the relevant phonological and morphological properties of lexical strata, the relative roles of phonological, morphological, semanto-pragmatic, and orthographic properties in the emergence of the strata have not been considered in detail, let alone the way in which these properties interact.

2. 研究の目的

The purpose of the project was as follows:

1. To systematically describe the phonological, morpho-syntactic, semanto-pragmatic, and orthographic patterns and constraints in Japanese and Korean that show stratum-specific characteristics, and to investigate their degree of overlap and the role they play in the emergence of the strata in the lexicon and grammar.
2. To compare lexical stratification in Japanese and Korean and explain the similarities and differences between the two languages.
3. To develop a semiotically grounded, relational network-based model of lexical stratification based on in-depth case studies of strata-specific patterns in Japanese and Korean.

In previous studies on lexical stratification, it has been tacitly assumed that the lexicon is an unstructured list of lexical items (words and morphemes) that form the input to the grammatical component. The present research takes an alternative approach in which the lexicon is assumed to be a network of constructional or relational schemas, as in recently developed cognitive linguistically oriented morphological models (Booij 2010, Jackendoff and Audring 2020).

3. 研究の方法

As a first step, a thorough review of different approaches to lexical stratification in phonology was conducted, with a focus on Japanese and Korean. Following this, an approach was developed in which the relative roles of phonology, morphology, semantics, and orthography are incorporated into linguistic knowledge. Based on a catalog of strata-specific phonological, morpho-syntactic, semanto-pragmatic, and orthographic patterns, it was investigated how the different dimensions are related. Following this general descriptive part, several patterns of particular theoretical interest were carefully selected and analyzed in more detail within a new approach that adopts and adapts ideas from Construction Morphology (Booij 2010) and Relational Morphology (Jackendoff and Audring 2020) to phonology.

While developing the model, work on (i) the representation of vowels and (ii) the interaction between pitch accent and morphology in the two languages was also conducted. These parts of the project made significant contributions to the fine-tuning of the model.

4. 研究成果

General Overview

The research conducted within this project has succeeded in developing a new approach not only to lexical stratification in phonology, but also to phonology and its interaction with morphology, semantics, and orthography in general. The approach is called Relational Phonology, as it takes the Relational Morphology framework developed by Jackendoff and Audring (2020) as its starting point. The main findings and proposals are summarized under different headings.

The Native and Sinitic Strata

- An important formal distinction between the native and Sinitic (Sino-Japanese and Sino-Korean) strata lies in morphology: prototypical native morphemes are mostly ‘free’, whereas

prototypical Sinitic morphemes are bound (cf. Song 1986, Nagano & Shimada 2014). In the relational approach, the difference is captured by assigning a morpho-syntactic feature (such as N or V) to native, but not Sinitic morphemes. In previous studies of phonological stratification, this aspect of lexical stratification has been mostly ignored, and etymological labels such as ‘Yamato’ (native) and ‘Sino-Japanese’ have been attached to different constraint rankings or sets of constraints based on etymology (Ito and Mester 1999, 2008).

- Morphemes belonging to the two classes also differ in terms of phonology, but more so in Japanese than in Korean. An important reason for this is that Korean phonology was richer in terms of its phone inventory and phonotactic patterns, enabling more faithful borrowing.
- Stratified phonological patterns are treated as indices, i.e. signs that are indicative of differences in morpho-syntactic and semanto-pragmatic structure (e.g. ‘learned’, ‘modern’, or ‘formal’). These relations can be captured by means of ‘if-then’ schemas, which in the proposed model are a new sub-type of the ‘sister schemas’ (Jackendoff & Audring 2020; cf. Booij 2010). The inclusion of the indexical functions of phonology within linguistic constructions is an important step forward in the analysis of not only lexical stratification, but also the interface between phonology and other domains of language in general.
- With respect to semantics and pragmatics, it is well-known that nearly synonymous morphemes of the native and Sinitic strata in both Japanese and Korean tend to have different ranges of meaning and stylistic values (Shibatani 1990, Sohn 1999). The purely formal phonological and morpho-syntactic differences will typically be linked to pragmatic differences in register difference (e.g. formal vs. informal).
- The learnedness of Sinitic morphemes can be at least partly derived from the fact that their meaning can only be derived at the word-level. In this project, this aspect is captured by leaving the semantic representation of Sinitic morphemes ‘unsaturated’.

The Foreign Stratum

- The lexical stratification of the Japanese and Korean lexicons is complicated further by the existence of a foreign stratum. It is not uncommon to find nearly synonymic triplets, as in the case of *aka*~⁺*seki*~*reddo*, all of which mean ‘red’ (‘+’ = ‘bound’).
- Foreign morphemes typically carry a connotation of being related to something ‘modern’ or, depending on the word, simply ‘foreign’.
- The specific parts of words that are indexical of ‘modernness’ or ‘foreignness’ can be singled out by means of ‘if-then’ schemas. For instance, in the case of *reddo*, the fact that the word starts with /r/ combined with the fact that it is specified for being an adjectival noun is indicative of its foreign status, as *r*-initial words don’t exist in the native stratum. In addition, it contains a voiced geminate, which is only allowed in foreign words, and therefore functions as an index for modernness or foreignness.
- Foreign morphemes can also be distinguished by means of semanto-pragmatic features in combination with orthography.
- Morphologically, foreign morphemes with adjectival or verbal meanings differ from their native counterparts in that they are non-inflecting. In this aspect they are similar to Sinitic morphemes, from which they differ in terms of boundness: foreign morphemes are mostly free.
- Although in Korean, native and Sinitic morphemes show the same kind of distribution as in Japanese, Sinitic words for the most part are no longer written by means of Sinitic characters (*hanca*). Moreover, *hanca* do not have native readings other than the meanings attached to them in dictionaries. This shows the importance of phonological, morpho-syntactic, and semanto-pragmatic characteristics.
- In modern Korean writing *hanca* are generally not used, which means it plays a smaller role in the distinction between native and Sino-Korean. Since Hangeul is used to write morphemes of all four lexical classes, orthographical information plays a less important role in lexical stratification in Korean compared to Japanese.
- Still, this does not mean that orthography does not play any role in the lexical stratification of Korean: differences in the distribution of phones and phone combinations in the different strata are reflected in the Hangeul script, amplifying these phonological differences.
- In addition, morpho-syntactic boundness is reflected by the fact that bound morphemes never appear with spaces on both sides.
- All these facts can be readily accounted for in the proposed model by means of different types of sign relations.

The Mimetic Stratum

- In both Japanese and Korean, morphemes and words of the mimetic stratum show some overlap with native words, but they also show their own specific patterns, both in terms of differences in the distribution and co-occurrence of phones, as well as the existence of specific morpho-phonological templates (Garrigues 1995, Akita 2009, Kwon 2015, among others).
- The framework adopted in this research project is similar in spirit to the construction-based framework adopted by Akita (2009). However, an advantage of Relational Phonology and Morphology, as developed in this project, is that the Peircean distinction between symbol, index, and icon (Peirce 1903) is directly incorporated in the representations. The icon, a sign which refers by means of a similarity to the object it represents, plays an important role in the mimetic stratum.
- Mimetic words typically contain two types of meaning: ‘symbolic’ meaning (semantics in the narrow sense), and ‘iconic meaning’ (which in the literature has been confusingly called ‘sound-symbolic’ meaning). Both types of meaning are linked to (parts of) the phonological string.

Accentual Stratification

- If we compare the pitch accent patterns of dialects like Tokyo and Kansai with those of Gyeongsang and Hamgyeong Korean, it turns out that, as in the case of segmental phonology, Japanese shows a higher degree of lexical stratification.
- This finding can be regarded as another instance of the higher degree of interaction between pitch accent and morpho-syntactic structure in Japanese compared to Korean (Poppe 2023).

Conclusion

In this research report, we have focused on several issues in lexical stratification in Japanese and Korean, presenting sample analyses of cases from Japanese. In the model developed in this research project, phonological representations are part of a larger network which includes morpho-syntactic, semanto-pragmatic, and orthographic representations. By incorporating the distinction between symbols, indices, and icons in the representations, the model is grounded in Peircean semiotics. Moreover, the approach is usage-based, which makes it well-suited to capture the gradient nature of lexical stratification.

The results reported in this study will be detailed in several upcoming articles intended for publication in peer-reviewed journals, which have either been submitted or are in the final stages of preparation for submission. The findings from these articles aim to contribute significantly to our knowledge of not only lexical stratification but linguistic structure in general.

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〔産業財産権〕

〔その他〕

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6. 研究組織

	氏名 (ローマ字氏名) (研究者番号)	所属研究機関・部局・職 (機関番号)	備考
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7. 科研費を使用して開催した国際研究集会

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8. 本研究に関連して実施した国際共同研究の実施状況

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