

Word borrowing in theoretical linguistics

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Abstract: I attempt to show that lexeme-based linguistic theories can capture three types of borrowing: cultural borrowing, core borrowing, and grammatical borrowing. The typology of borrowing has been identified in studies on contact linguistics, but the findings of these studies are closely correlated with word formation and other phenomena, such as code switching. I discuss several interesting examples and show that the typology can be fruitfully linked to a grammatical model proposed for bilingual speakers. When language A borrows from language B, A is called a recipient language, and B a source language.

Keywords: bilingual grammar, lexeme/word, lexicon, typology of borrowing

1. Introduction

Most people would agree that words are the basic thought unit for human beings. For philosophers, psychologists, and anthropologists, the vocabulary or lexicon of a language gives them the first approximation of how speakers of that language think, feel, and live. The topic of TGSW2020 was the geographical spreading of words, the phenomenon called borrowing (Thomason and Kaufmann, 1988). Word borrowing occurs when people move geographically and bring their words to foreign places or when various records of their words, such as books, newspapers, and radio programs, are transmitted to other places. Therefore, borrowing should give us a solid empirical basis to consider how people change or expand their ways of thinking, feeling, and living through contact with other people who have different lexicons. The research project led by evolutionary biologist Takeshi Obayashi takes this point seriously and attempts to trace paths of human cultural evolution by using the *Wikipedia* database and machine learning technology (Obayashi et al., 2018; Obayashi, 2019).

In this paper, I examine borrowing from the viewpoint of lexeme-based linguistic theory (Aronoff, 1976, 1994, 2007; Beard, 1995; Spencer, 2013; Jackendoff and Audring, 2020). “Lexeme” is the meaning-based definition of “word” and is paired with the form-based definition called “word-form.” In this paper, I use “word” in the former sense but switch to “lexeme” when a clear distinction is needed. (I will use “grammatical item” to refer to functional words and bound affixes.) Lexeme-based linguistic theory refers to the shared conviction that words are the basic unit of human languages. Therefore, lexeme-based theories are built on the same idea mentioned in the above paragraph: that words are the basic thought unit for human beings. Not every linguistic theory shares the lexeme-basedness hypothesis. In such theories, where words are *not* supposed to be the basic unit of human languages, it would be difficult to find a meaningful connection between linguistics and the status of words as thought units.

2. Word Formation and Borrowing

2.1 Cultural Borrowing

In Nagano (2018), I closely compared word borrowing with word formation. Why borrowing is possible at all can be understood in terms of speakers’ capacity to expand their lexicons (Beard and Volpe, 2005), and this capacity is grammatically systematized as word formation.

In word formation, new words are produced by changing part or parts of an old (i.e., “established and already known”) word. For example, English speakers produced *running*, *runner* and

outrun from the verb *run*. In each process of production, certain properties of *run*, the “base” word, are changed, while the remaining properties are inherited into *running*, *runner*, or *outrun*, the “derivative” word. That the same base word can produce different derivatives suggests that a word (as a lexeme) has the following set of representations in the lexicon:

(1) Lexical representation of PUT

Grammatical level	G = Verb, x <y, P _{loc} z>
Semantic level	Sem = [x ACT-ON y] CAUSE [BECOME [y BE AT [_{loc} IN / ON z]]]]
Phonological level	P = stem 1, / put /

(Nishiyama & Nagano, 2020, p.16)

The lexical representation (1) shows how the verb *put* is represented in English speakers’ lexicons. “G” stands for its grammatical representation, which specifies its lexical category (“Verb”) and argument structure (x <y, P z>). “Sem” stands for the word’s semantic representation, while “P” gives the word’s phonological and morphophonological information. Of course, other words, including *run*, also have similar lexical representations. Thus, differences and similarities between *running*, *runner*, and *outrun* can be explained by assuming that the three were formed by different modifications of the lexical representation of *run*. Except for rare cases of “word manufacture,” word formation always expands the lexicon in this way, that is, by using older known words as the basis of expansion.

With this background in mind, consider the following borrowed words found in the Japanese lexicon:

- (2) a. 茶 cha, ‘tea’
- b. コアラ koala, ‘koala’
- c. パブロヴァ paburoba, ‘pavlova’
- d. ダウンロード daunroodo, ‘download’
- e. リマインド rimaindo, ‘remind’

I purposefully cite the examples in the original Japanese character, thereby helping readers when the romanized version of a Japanese borrowed word is identical to its original lettering in the source language, as in (2b). The words in (2) are classified as “cultural borrowing” (Myers-Scotton, 2002, p. 41) because borrowing introduces a new idea or concept into the recipient lexicon and introduces a new object designated by the foreign word into borrowers’ lives. For example, the introduction of the word in (2a) into the Japanese lexicon accompanied the introduction of the so-called object into the lives of then Japanese speakers. In (2b-e), a similar process took place in a historical period totally different from (2a).

The grammatical process of cultural borrowing differs entirely from word formation in that the former expands the lexicon without mediation of already existing words. Unlike *run* for *running/runner/outrun*, the words in (2) have no base that we can identify. If this observation is correct, cultural borrowing should be seen as complementary to word formation as a process of lexical stock expansion. The existence of such a process is well established, but conditions governing when and how it is carried out have yet to be studied ^[1]. As the case discussed below shows, cultural borrowing does not necessarily occur (even) when it is expected.

2.2 Words and Reality

Concerning cultural borrowing, it is important to distinguish the introduction of a foreign word from the introduction of its intended referent for the following reasons. First, both English and Japanese have many borrowed words that are purely conceptual and/or academic. These words are sometimes criticized as words “devoid of substance” (*jittai-no nai go*). Conversely, the borrowing of a new reality from another place does not necessarily mean that the word that is used to refer to the new reality in its

place of origin is brought in tandem. The borrowed new reality can be referred to by a vernacular word or word formation based on it.

I am referring to the case observed in an area called Shimo-nīkawa of Toyama Prefecture in Japan (Onishi, 2018) ^[2]. The noun ピーマン *piiman* ‘sweet pepper’ is a borrowed word that was introduced into Japanese in tandem with the so-called object, that is, western sweet peppers. Just as in other places in Japan, the object was assimilated into Shimo-nīkawa people’s everyday lives, but the word was not. Instead, according to Onishi’s geolinguistic study, Shimo-nīkawa chose to use certain vernacular words to refer to western sweet peppers. Shimada (in press) considers the question of which vernacular word was chosen in different towns within Shimo-nīkawa, but I think a more basic question is why the apparently useful foreign word was not borrowed in the first place.

3. Core and Grammatical Borrowing in English and Japanese

3.1 Core Borrowing

From a functional point of view, cultural borrowing can be easily pictured as “gap filling” in the lexicon. However, data suggest that foreign words are borrowed even when there is no gap to fill. Haspelmath and Tadmor (2009) provide a cross-linguistic large-scale survey of word borrowing in 41 languages spoken in different parts of the world. Their investigation reveals that cultural borrowing is not as frequent as we would expect, while “core borrowing,” which exchanges basic words of high frequency (Swadesh, 1951; Tadmor, 2009), occurs much more commonly than expected. In most cases of the latter type of borrowing, the recipient language takes in a foreign word for which the recipient language has an equivalent vernacular word already.

Let us consider nouns referring to animals, such as cows, pigs, sheep, and horses, whose natural habitats are *not* restricted to a specific part of the world. Unlike koalas, a species living only in Australia, such domestic animals have different names in different languages (Obayashi et al., 2018). For example, both Old English and Old Japanese had a native noun referring to cows in their lexicons. However, a mysterious historical fact is that English borrowed a cow-referring word from French, while Japanese borrowed the word from Chinese. Such cases of core borrowing resulted in native/foreign lexical doublets (or triplets) as follows:

(3)	Native words	Borrowed words
a.	cow sheep horse	beef lamb, mutton equine
b.	うし <i>ushi</i> ‘cow’ ひつじ <i>hitsuji</i> ‘sheep’ うま <i>uma</i> ‘horse’	牛(乳) <i>gyu</i> ‘cow’ 羊(毛) <i>yo</i> ‘sheep’ (競)馬 <i>ba</i> ‘horse’

Moreover, core borrowing is not limited to animal names. English and Japanese have foreign synonyms for the following basic native verbs:

(4)	Native words	Borrowed words
a.	help	aid, assist
b.	みる <i>miru</i> ‘see, look’	(拜)見 <i>ken</i> ‘see, look’

The existence of doublet verbs, such as (4a, b), becomes more surprising when we pay attention to Muysken’s borrowability hierarchy, according to which verbs are more resistant than nouns to borrowing (Muysken, 2010, p. 271).

In the native/foreign doublets cited in (3, 4), foreign words, including phonological and orthographic materials, were borrowed and paired with their native synonyms. However, native core words can be affected more abstractly, the influence of a foreign word arising only at the level of their Grammatical and/or Semantic representation(s). For example, consider the following use of the present-day Japanese verb *miru* ^[3]:

- (5) *Furyō-saiken-mondai-ga ichiō-no kaiketsu-o mita.*
 bad debt issue.NOM provisional.GEN solution.ACC see.PST
 ‘The bad debt issue ended in a provisional solution.’

(Takahashi & Horie, 2012; glosses and translation mine)

In this sentence, *miru* takes an inanimate subject and an event noun object. According to Takahashi and Horie (2012), such an argument structure is alien to the native use of this verb and, hence, should be regarded as a result of English-Japanese language contact after the Second World War. Specifically, to use the terms introduced in Section 2, the Grammatical and Semantic representations of the English verb *see* prompted the new use of the Japanese verb *miru* in the lexicons of Japanese speakers involved. Crucially, however, the Phonological representation of *see* was not used in this process.

3.2 Grammatical Borrowing

However, perhaps much more surprising is that not only basic lexemes but also grammatical items and patterns can undergo borrowing (Renner, 2018). Research in generative linguistics has long demonstrated that grammatical items show cross-linguistically similar syntactic and semantic behaviors because these items are realizations of universal or near universal functional categories or parameterized features of these categories. Function words, affixes, clitics, etc., are approximately different material realizations of the “same” abstract category or feature shared among languages. If this perspective is correct, there is no apparent need for a language to borrow another language’s grammatical item because the language should have an equivalent of its own.

With respect to present-day Japanese, examples that attest to the borrowing of English prepositions, pronouns, and derivational suffixes are given below. First, in (6a, b), *いん* indicates the use of the borrowed preposition *in* in a noun phrase structure of the type $[[\text{Noun}_1 + \text{P}] + \text{Noun}_2]$.

- (6) a. $[[\text{リンスイン}] \text{シャンプー}]$
 rinse in shampoo
 ‘shampoo with rinse in it, conditioning shampoo’
- b. $[[\text{たこ焼きイン}] \text{餃子}]$
 octopus ball in pot sticker
 ‘Pot sticker with an octopus ball in it’

(Namiki, 2005, pp. 8-9, glosses and translations mine)

As pointed out by Namiki (2005), the borrowed item differs from the original English preposition in taking its complement in the head-final word order. In (6a), the complement of *いん* is “rinse” rather than “shampoo,” and it is “octopus ball” rather than “pot sticker” in (6b). Furthermore, the borrowed item is semantically distinct from the English counterpart in the theta role it assigns to its complement.

Next, in (7a-c), Japanese complex nouns prefixed by *まい* are classified into three semantic groups. In (7a), the expression *mai-X* can be paraphrased as *jibun-yō no X* ‘self-use’s X.’ In (7b), it can be paraphrased as *jibun-ryū no X* ‘self-manner’s X.’ To paraphrase similarly by using *jibun* ‘self’ is difficult in (7c).

- (7) a. Group 1
 マイボトル mai-botoru ‘self bottle’
 マイ箸 mai-hashi ‘self chopstick’
- b. Group 2
 マイルール mai-rūru ‘self rule’
 マイ葬儀 mai-sogi ‘self funeral’
- c. Group 3
 マイナンバー mai-nanbā ‘individual number’
 マイ割 mai-wari ‘individual discount’

(Nagano & Shimada, 2018, pp. 75-76)

The common item *mai* was originally the English first-person singular possessive pronoun. However, the following sentences show that *mai-X* nouns do *not* necessarily refer to possessions of the speaker. The identical form refers to a car possessed by the listener in (8a) and a car possessed by a third person in (8b).

- (8) a. *Anata wa koko ni mai-kā de kimashitaka?*
 You TOP here to my car by come.polite.PST.Q
 ‘Did you come here in your own car?’
- b. *Taro wa koko ni mai-kā de kimashitaka?*
 Taro TOP here to my car by come.polite.PST.Q
 ‘Did Taro come here in his own car?’

(Nagano & Shimada, 2018, p. 74)

Consider also the following derived adjectives based on native (9a), Sino-Japanese (9b), and foreign (9c) words. The suffix チック *-chikku* originates from the reanalysis of the borrowed versions of English derivatives ending in the adjectivalizer suffix *-ic* preceded by *t*, such as *romantic* and *fantastic*.

- (9) a. Derivatives from native words
 乙女チック otome-chikku ‘girlish’
 天ぷらチック tenpura-chikku ‘tasting/looking like tempura’
- b. Derivatives from Sino-Japanese words
 英語チック eigo-chikku ‘sounding like English’
 高級チック kōkyū-chikku ‘apparently high-class, posh-looking’
- c. Derivative from foreign words
 ミルフィーユチック mirufiyu-chikku ‘looking like a mille-feuille’
 アジアンチック ajian-chikku ‘looking like Southeast Asian-style’

(Nagano & Shimada, 2018, p.65)

4. Two Lexicons in One Mind and the Separationist Hypothesis

In lexeme-based linguistic theories, it is assumed that i) speakers have a dynamic lexicon that is more than a list of encyclopedic knowledge and ii) lexemes (nouns, adjectives, and verbs) are dealt with in the lexicon, whereas grammatical items are morphological realizations of functional categories and their features ^[4]. In Nagano & Shimada (2014, 2018) and Nagano (2018, 2019), my collaborator and I analyzed the cases of core and grammatical borrowing illustrated above according to these two basic assumptions. Here, I draw a very rough but essential picture of our proposals about the core borrowing in (3-5) and the grammatical borrowings in (6-8). For more technical details and the case shown in (9), I refer readers to the said papers.

The first assumption becomes essential to explain the observation that core and grammatical borrowing is attested among fluent bilinguals and relatively advanced language learners. In other words, these types of borrowing are likely to transpire when speakers of the recipient language are also speakers or advanced learners of the donor language. According to the lexeme-based assumption, such speakers should have two lexicons, one for their native language and the other for their near-native or learner language. Observations about foreign-language learning and the well-studied bilingual phenomenon of “code switching” (Myers-Scotton, 2002; MacSwan, 2005) strongly suggest that the two lexicons in one speaker’s linguistic faculty are interrelated in such a way that mutually translating lexemes are linked to each other. Weinreich (1964, p. 7) called such a linking process “interlingual identification,” which means, for example, that English-Japanese bilinguals or advanced learners have the lexical representation of the verb *put* in (1) in one of their lexicons, and it is linked to the lexical representation of its Japanese counterpart stored in their other lexicon.

The second assumption is related to the separationist hypothesis, which separates form and function/meaning (Aronoff, 1994; Beard, 1995). Separating the two aspects of a linguistic expression is essential to explain what Matras and Sakel (2007) attempt to capture by their contact-linguistic terminology “matter vs. pattern borrowing.” In core borrowing, cases such as (3, 4) are classified as matter borrowing because they involve the form side of the donor language’s original expression, while (5) is classified as pattern borrowing because it involves only the function/meaning side. In grammatical borrowing, the borrowed form in (6) has a syntax and semantics distinct from the original English preposition *in*, and the same is true of the borrowed version of the English possessive pronoun in (7, 8). Thus, if we apply Matras and Sakel’s terminology, the cases in (6-8) should be classified as matter borrowing (in its purest sense with no tag-along pattern borrowing). Very useful as they are, however, Matras and Sakel’s terms are not absolutely necessary because the distinction they attempt to make can be easily captured in a linguistic theory that adheres to the separationist and realizational hypothesis, which separates form and function/meaning. The “matter” of these terms corresponds to Phonological representations of lexemes and morphophonological realizations of grammatical items, while their “pattern” corresponds to our Grammatical and Semantic representations of lexemes and functional categories and their features.

For the sake of maximal generality, let us call a bilingual or advanced language learner’s two lexicons Lexicon *x* (L_x) and Lexicon *y* (L_y). Core borrowing occurs when the lexical representation of a lexeme in L_x is partly modified in the same lexicon *under the influence of* the interlingual linking to a lexeme in L_y. In the Grammatical, Semantic, or Phonological representations of the chosen lexeme, modification causes a change similar to the change that the base lexeme of word formation undergoes (see Section 2). Under this view, differences found between the French-to-English core borrowing in (3, 4a) and the Chinese-to-Japanese core borrowing in (3, 4b) are due to different modificational operations performed in each recipient-language lexicon.

Next, grammatical borrowing occurs when the interlingual identification between L_x and L_y influences the morphological realization of functional categories or their features. For example, bilingual noun phrases, such as (6a, b), are produced by inserting *in* into phrase structure [[NP+P] NP], which is projected from the speaker’s Japanese lexicon. The syntax and semantics of (6a, b) are the same as those of corresponding Japanese expressions because the phrase structure is projected from the

Japanese lexicon. Language mixing occurs when this structure is “spelled out” through the morphological realization of its constituents.

The apparently mysterious referential property of the borrowed *mai-* we observed in (8) can also be similarly explained. As the three semantic groups in (7a-c) indicate, the English first-person possessive pronoun is employed in spelling out a noun phrase structure that is based on the Japanese native grammatical item *jibun* ‘self.’ Compare the sentences in (8) with the following sentences:

- (10) a. *Anata wa koko ni jibun no kuruma de kimashitaka?*
 You TOP here to self GEN car by come.polite.PST.Q
 ‘Did you come here in your own car?’
- b. *Taro wa koko ni jibun no kuruma de kimashitaka?*
 Taro TOP here to self GEN car by come.polite.PST.Q
 ‘Did Taro come here in his own car?’

(Nagano & Shimada, 2018, p. 74)

Strikingly, the reference of *mai-* in (8) is the same as that of *jibun* in (10). In our view, examples such as (8) emerge in bilingual speakers’ language when the genitive modifier that is morphologically realized by *jibun* in monolingual Japanese speakers’ language is realized instead by a related English item.

Finally, I would like to suggest a new research possibility that further develops the analyses of Nagano & Shimada (2014, 2018) and Nagano (2018, 2019). Let us consider the following organization of a bilingual speaker’s grammatical faculty, as proposed by MacSwan (2005):

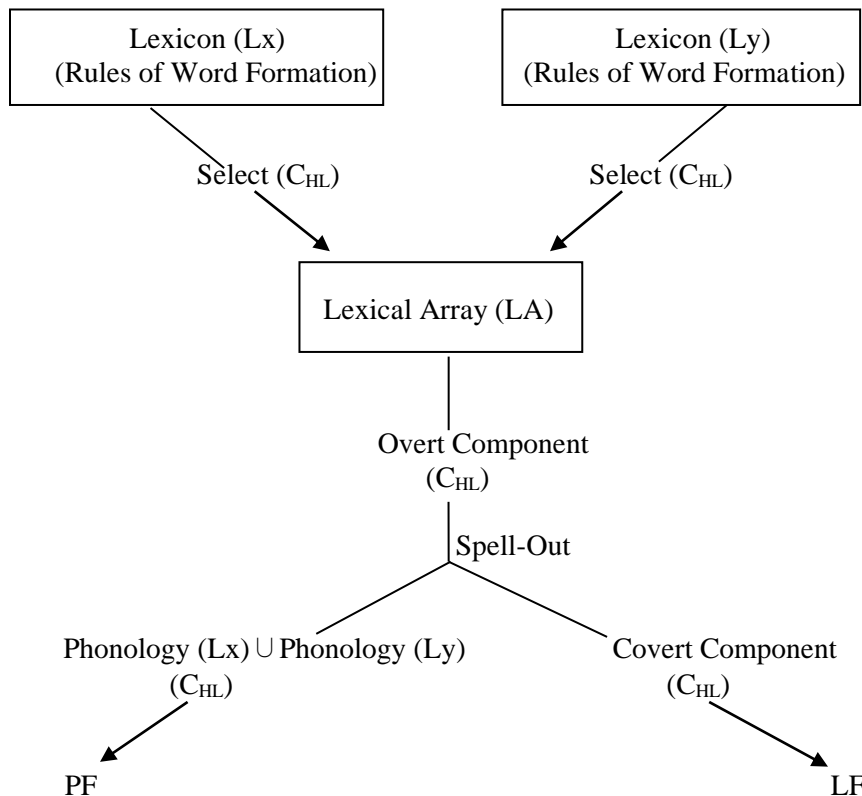


Figure 1. A minimalist approach to code switching (MacSwan, 2015, p. 7).

Basically, Figure 1 says that a bilingual speaker has a grammar with two lexicons (Lx and Ly) and disjoint PF (Phonetic Form) components, but syntax and semantics make no computational distinction between the two languages at their command. Because examining MacSwan’s carefully elaborate

bilingual minimalist grammar is far beyond my present goal, I leave most of its substance to the original paper. My point is that this figure is also useful as a heuristic guide to understanding our analyses of the core and grammatical borrowing discussed above. These types of borrowing are observed in the same type of speakers who can perform code switching, so it is natural to assume a similar grammatical organization among these bilingual phenomena ^[5]. In Figure 1, core borrowing is concerned with the tight relationship between L_x and L_y, while grammatical borrowing is concerned with the Select process that starts a syntactic derivation and the mapping of the derivation to PF.

5. Conclusion

In the current international bibliography, word formation and word borrowing are studied separately in different areas of linguistics, the former in morphology and the latter in contact linguistics, and the two naming processes are rarely compared, barring a few exceptions ^[6]. While lexeme-based theories (correctly) stress the dynamic and generative power of the lexicon, they largely ignore that many languages expand their vocabularies not only by making a formal and/or semantic change on established lexical items in their lexicons but also by importing foreign lexical items. The opposite one-sidedness can be found in the current bibliography of contact linguistics. Researchers in this field propose an intricate typology of borrowing phenomena but make no reference to the built-in vocabulary-building capacity. This paper concisely sketches how to bridge the two areas in theoretical linguistics.

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Notes

[1] I am grateful to one of the TGSW2020 participants, whose question helped me notice this interesting research question.

[2] I am grateful to Masaharu Shimada for inviting me to a discussion about this longitudinal geolinguistic study.

[3] Abbreviations in the linguistic glossing used in this paper are as follows: ACC: accusative, GEN: genitive, NOM: nominative, PST: past, Q: question particle, and TOP: topic.

[4] I do not address the variation among lexeme-based linguistic theories in how they analyze grammatical items.

[5] This does not mean to say that agents of the borrowing phenomena discussed in this paper overlap with agents of code switching assumed in MacSwan's paper.

[6] Recent contributions include Emonds (2017) and ten Hacken and Panacová (2020). The former paper is examined in Nagano (2019).

References

- Aronoff, M. (1976). *Word formation in generative grammar*. Cambridge, MA: MIT Press.
- Aronoff, M. (1994). *Morphology by itself: Stems and inflectional classes*. Cambridge, MA: MIT Press.
- Aronoff, M. (2007). In the beginning was the word. *Language*, 83 (4), 803-830.
- Beard, R. (1995). *Lexeme-morpheme base morphology: A general theory of inflection and word formation*. Albany, NY: State University of New York Press.
- Beard, R., & Volpe, M. (2005). Lexeme-morpheme base morphology. In P. Štekauer & R. Lieber (Eds.), *Handbook of word-formation* (pp. 189-205). Dordrecht: Springer.
- Emonds, J. (2017) Theoretical limits on borrowing through contact; not everything goes. In L. R. Bailey & M. Sheehan (Eds.), *Order and structure in syntax I: Word order and syntactic structure* (pp. 373-384). Berlin: Language Science Press.
- ten Hacken, P., & Panacová, R. (Eds.). (2020). *The interaction of borrowing and word formation*. Edinburgh: Edinburgh University Press.
- Jackendoff, R., & Audring, J. (2020). *The texture of the lexicon: Relational morphology and the parallel architecture*. Oxford: Oxford University Press.
- MacSwan, J. (2005). Codeswitching and generative grammar: A critique of the MLF model and some remarks on “modified minimalism.” *Bilingualism: Language and Cognition*, 8 (1), 1-22.
- Matras, Y., & Sakel, J. (2007). Investigating the mechanisms of pattern replication in language convergence. *Studies in language*, 31 (4), 829-865.
- Muysken, P. (2010). Scenarios for language contact. In R. Hickey (Ed.), *The handbook of language contact* (pp. 265-281). Malden, MA: Blackwell.
- Myers-Scotton, C. (2002). *Contact linguistics: Bilingual encounters and grammatical outcomes*. Oxford: Oxford University Press.
- Nagano, A. (2018). Saishin-no rekishikon-to keitairon-no shinten (Advances in studies in lexicon and morphology). In T. Nishihara (Ed.), *Gengo-no kōzō-to bunseki* (Structures and Analyses of Language) (pp. 169-257). Tokyo: Kaitakusha.
- Nagano, A. (2019). Rekishikon riron-no chōryū: Rekishikon-deno sōsatoshiteno shakuyō (Current trend of the theory of lexicon: Borrowing as a dynamic process in the lexicon). In T. Kageyama & H. Kishimoto (Eds.), *Rekishikon kenkyū-no aratana apurōchi* (New approaches of lexical investigation) (pp. 27-54). Tokyo: Kurosio.
- Nagano, A. & Shimada, M. (2014). Morphological theory and orthography: Kanji as a representation of lexemes. *Journal of Linguistics*, 50 (2), 323-364.
- Nagano, A. & Shimada, M. (2018). Affix borrowing and structural borrowing in Japanese word-formation. *SKASE Journal of Theoretical Linguistics*, 15 (2), 60-84.
- Nishiyama, K., & Nagano, A. (2020). *Keitairon-to rekishikon* (Morphology and the lexicon). Tokyo: Kaitakusha.
- Obayashi, T. (2019). Chikyūkankyō-no teiryōtekikijutsu-notameno Wikipedia dēta-no kokoromi. *IPSJ SIG Technical Report*, vol. 2019-BIO-58, no. 62, pp.1-2. ISSN:2188-8590.
- Obayashi, T., Yamada, K., & Nagano, A. (2018) Gengokangoihikaku-ni motozuku yaseidōbutsu-no seisokuikisuitei-no kokoromi. *IPSJ SIG Technical Report*, vol. 2019-CH-121, no. 7, pp.1-5. ISSN:2188-8957.
- Onishi, T. (2018). Hōgengoi-no bunpu-no hendō. In Y. Hida & T. Sato (Eds.), *Hogen-no goi: Nihongo-o irodoru tiikigo-no sekai* (The lexicon of regional dialects: How dialects enrich the Japanese language) (pp. 116-131). Tokyo: Asakura.
- Renner, V. (2018). Structural borrowing in word-formation: A exploratory overview. *SKASE Journal of Theoretical Linguistics*, 15 (2), 2-12.
- Shimada, M. (in press). Hōgen dēta-niyoru keitai tōgoron kenkyū. In T. Nishihara (Ed.), *Gengo-no intāfueisu dai 3 kan*.
- Spencer, A. (2013). *Lexical relatedness: A paradigm-based model*. Oxford: Oxford University Press.
- Takahashi, K., & Horie, K. (2012). Gengoseshoku-no kantenkaramita hi-yūseimeishisyugo-no ‘miru’ kōbun: Bungotai kōpasu-o riyōshite. In *Proceedings of the first workshop of corpus Japanese linguistics* (pp. 99-108). NINJAL: Tokyo. Retrieved from: <https://www.ninjal.ac.jp/event/specialists/project-meeting/m-2011/jclws01/>
- Thomason, S. G., & Kaufman, T. (1988). *Language Contact, Creolization, and Genetic Linguistics*. Berkeley: University of California Press.
- Weinreich, U. (1964 [1953]). *Languages in contact: Findings and problems*. The Hague: Mouton.