

The Diachronic Shift of Japanese Transitive/Unaccusative Verb Pairs

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Received: February 3, 2022

Accepted: March 7, 2022

Online Published: March 15, 2022

doi:10.5539/ijel.v12n3p18

URL: <https://doi.org/10.5539/ijel.v12n3p18>

Abstract

This study explores how Japanese transitive/unaccusative verb pairs have transformed from being a substantive verb to the various forms they fulfil in Modern Japanese (i.e., an aspectual verb, a noun, an adjective, an adverb, a quantifier and a suffix) and how grammaticalisation and lexicalisation play an essential role during the processes. A working definition of ‘grammaticalisation’ and ‘lexicalisation’ that applies to Japanese is put forward, followed by a corpus-based investigation as well as a case study. The finding reveals that (a) the process by which a lexeme develops into a noun is a case of lexicalisation; the process by which a lexeme develops into an aspectual verb, an adverb, an adjective, a suffix or a quantifier is a case of grammaticalisation; (b) transitive verbs are more likely to convey ASPECT than unaccusatives are. The shift into a quantifier is limited to unaccusative verbs. Grammaticalisation (affixation) and lexicalisation in Japanese both require syntactic reduction and morphological alternation. The two differ in that lexicalisation does not require an alternation in writing, i.e., a lexicalised item can remain being written in Chinese characters (Note 1) whilst a grammaticalised item can only appear in kana script. Phonological alternation is obligatory in grammaticalisation but not required by lexicalisation. Lexicalisation appears to occur before grammaticalisation.

Keywords: Japanese, transitive/unaccusative alternation, grammaticalisation, lexicalisation

1. The Point of Departure

Japanese is phonologically a mora and morphologically an agglutinative language (*tabe-sase-rase-mashi-ta-ka*. [eat (stem)-causative-passive voice-honorification-past tense-question marker]). Free morphemes (particles, e.g., *ga* (nominative), *o* (accusative), *ni* (dative); nouns, e.g., *ki* ‘tree’, *me* ‘eye’) and bound morphemes (auxiliaries, affixes) are both employed, and three lexical strata coexist, i.e., native (Wago), Sino-Japanese and loanwords. The Japanese language is further featured with transitive/intransitive verb alternation; about 462 pairs of transitive/unaccusative verb are realised by three patterns of morpheme alternation: (I) *vt* and *vi* derive from the same adjective stem; (II) transitive/intransitive (Note 2) verbs share the same word form; (III) develop from one root to another through the addition of a morpheme that indicates transitive/unaccusative properties.

(I) *vt* and *vi* derive from the same adjective stem (1).

(1) HIROI (Adj)	→ unaccusative V	HIROM-ar-u
	→ transitive V	HIROM-e-ru

(II) transitive/intransitive verbs share the same word form (2).

(2) MA-ku

e.g., *asakao ga tsuru o maku* ‘Ipomoea hederacea rolls up the tendril’;

asakao no tsutu ga maku ‘The tendrils of ipomoea hederacea rolls up’

(III) develop from one root to another through the addition of a morpheme that indicates transitive/unaccusative properties (3).

(3) KOWA-s-(r)u/KOWA-re-ru; TAT-0-(r)u/TAT-e-ru; KIR-0-(r)u/KIR-e-ru

The first alternation pattern (type I), i.e., where *vt/vi* derive from the same adjective stem, is limited to adjectives and presents the following variations: [mu/eru]-based (26 pairs); [eru/su]-based (two pairs); [geru]-based (one pair). An illustration is provided in (4).

(4) Adjective-based *vt/vi* alternation (Note 3)

Adjective root	Suffix [mu]	Suffix [ru/eru]	Suffix [su]	Suffix [geru]
広い <i>hiro</i> 'wide'				hirogeru _{tran.} (enlarge)
甘い <i>amai</i> 'sweet'		amaeru _{intran.} (behave like a spoiled child)	amayakasu _{tran.} (pamper)	
怪しい <i>ayashii</i> 'doubtful'	ayashimu _{intran.} (suspect)	ayashimeru _{tran.} (suspectin)		

The second alternation pattern (type II), i.e., where transitive/intransitive verbs share the same word form, cf. (5).

(5) Transitive/intransitive verbs that share the same word form (Note 4)

tojiru; tomonau; hakobu; hadakeru; haru; hiraku; fureru; maku; masu; moyoosu; musubu; hataraku; hiku; fuku; motsu

Our research target is the third pattern (type III), i.e., where *vi/vi* pairs develop from one root to another through the addition of a morpheme that indicates transitive/unaccusative properties. A total of 400 pairs are confirmed from the corpus. It should be noted that Hayatsu (1987b, 1995) discovers 220 pairs of transitive/intransitive verbs out of 740 verbs. That is 59.46%. Shimada (1979) found 290 pairs out of 1,040 verbs (55.77%). Considering this, our data (400 pairs), can be considered solid.

The purpose of this study is two-fold. First, it seeks to establish which form is the original base, and which is the derived form.

Second, transitive/unaccusative verbs have both derived new categories and meanings over the evolution of the language. For instance, in Old Japanese corpus, *motsu* was transitive in origin, meaning 'to carry something' (6a) and got lexicalised in 1707, fulfilling a noun function (6b). It further derived an unergative verb function in 1821 (6c). The shift from a VP (object + transitive verb) to a compound noun is an issue of lexicalisation due to the omission of the accusative case particle *o* and the morphological transition (*motsu* (conclusive form) → *moti* (continuous form)).

- (6) a. *nimotsu* *o* ***motsu.***
 luggage ACC carry.CONCL
- b. *okane* *moti.*
 money have.CONT
- c. *karada* *ga* *motsu.*
 body NOM hold.CONCL

In (6b), *moti* is the continuous form of transitive verb *motsu* (carry). Syntactically, the compound noun *okanemochi* derives from the VP: *okane o motsu* [money ACC have]. When the accusative case particle 'o' is omitted, the VP turns into a compound noun. Semantically, the compound noun *okane-mochi* refers to a person who has lots of money, i.e., 'okane-o-motteiru-hito' [money-acc-possess.PROG-person].

(6c) is a case where the transitive verb *motsu* shifting into an unergative verb. The unergative *motsu* rather renders a state whilst the transitive *motsu* conveys an action, which inspires us to deduce that the agentivity of *mostu* has been weakened.

It occurs that the boundary of grammaticalisation and lexicalisation is fluid. This raises the second question as to how the two transition processes are distinct yet interrelated. For example, whether it is reasonable to postulate that the paths might be predictable for the two roots, in that a transitive root may be favoured for lexicalisation while an unaccusative root facilitates grammaticalisation, or the other way around.

1.1 Functions and Meanings of Transitive/Unaccusative Pairs in Modern Japanese

A search in the dictionary *Koojien* reveals that quite a few transitive verbs in Modern Japanese are multi-faced, i.e., function as a substantive transitive verb, a noun, an aspectual verb, an adverb, and a suffix. Consider *kiru*_{tran.} 'cut', a typical action verb, for an instance.

- (7) a. **Substantive transitive verb**
- Nagasa* *go* *cenchi* *ni* ***kiru.***
 Length five centimetre DAT cut
- 'Cut it five centimetres short.'

b. Substantive transitive verb with meaning lexicalised

(i) punch

kippu-o-**kiru** [ticket-ACC-punch] ‘punch ticket’

(ii) turn off; hang up

denki-o-**kiru** [electricity-ACC-turn off] ‘turn off the electricity’

denwa-o-**kiru** [phone-ACC-hang up] ‘hang up the phone’

(iii) cut relationship/ties

en-o-**kiru** [ties-ACC-cut] ‘cut ties’

(iv) interrupt

kotoba-o-**kiru** [talking-ACC-stop] ‘stop talking’

(v) abort

kigen-o-**kiru** [deadline-ACC-set] ‘set a deadline’

c. Noun (lexicalised)

kiri ga nai [limit-NOM-no] ‘no limit’,

kiri o tsuketu [end-ACC-put] ‘put an end to’

d. Aspectual verb

ii-**kiru** [say-assert] ‘declare’; nori-**kiru** [mount-finish] ‘hold up’ (Note 5)

e. Adverb (Note 6)

omoi-**kitte** [think-stop] ‘drastically’

f. Prefix

kiri-kyoogen [end-kyoogen play] ‘the last kyoogen play of a day’

g. Suffix

futari-**kiri** [two persons-finish] ‘two persons only’

(Koojien Dictionary)

In the corpus of BCCWJ, *kiru* is found 5034 times, fulfilling seven categories. A total of 300 words were randomly selected and show that following distribution of *kiru*'s multiple characters. The most frequent option is the transitive verb use (88 tokens). A total of 76 tokens had an aspectual function. 67 tokens were attributed to the transitive verb use with a lexicalised meaning. 58 went to the noun use. Six tokens showed an adverb use and three showed an adjective use. Finally, only two tokens were used as a suffix.

Table 1. *Kiru*'s multiple functions in Modern Japanese corpus

Category	Types	Token
Substantive transitive	53	88
Transitive with lexicalised meaning	46	67
Noun	3	58
Aspectual	22	76
Adverb	1	6
Adjective	2	3
Suffix	2	2

Turning to the counterpart of *kiru*, i.e., the unaccusative *kireru* ‘cut_{intran.}’. The Koojien Dictionary indicates that *kireru* conveys five categories in Modern Japanese: an unaccusative verb, unaccusative verb with meaning lexicalised, a suffix, a noun, an aspectual verb, and a quantifier. Illustrations are provided in (8).

(8) **a. unaccusative verb**

ito ga **kireta.**

string NOM break-PERF

b. unaccusative verb with lexicalised meaning

(i) to be cut off

En ga **kireta**.
fate NOM end-PERF

(ii) to be disconnected

Denwa ga **kireta**
telephone conversation NOM cut off-PERF

(iii) to run out

Abura ga **kireta**.
petrol NOM run out-PERF

(iv) to be sharp, bright

Atama ga **kireru** ‘be bright’

c. Suffix

kigen-**kire** [deadline-expire] ‘expire’; zaiko-**kire** [stock-run short] ‘sold out’

d. Noun

gijutsu no **kire** [technology GEN run out] ‘endpoint of technology’;
amata no **kire** [head GEN clever] ‘sharp’

e. Aspectual verb (Note 7)

uri-**kireru** [sell-sold out] ‘be sold out’

f. Quantifier

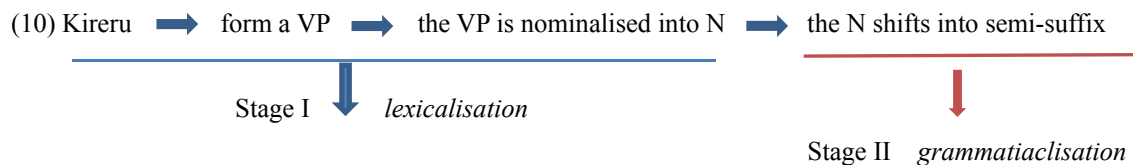
hito-**kire** [one-cut] ‘a slice’

(Koojien Dictionary)

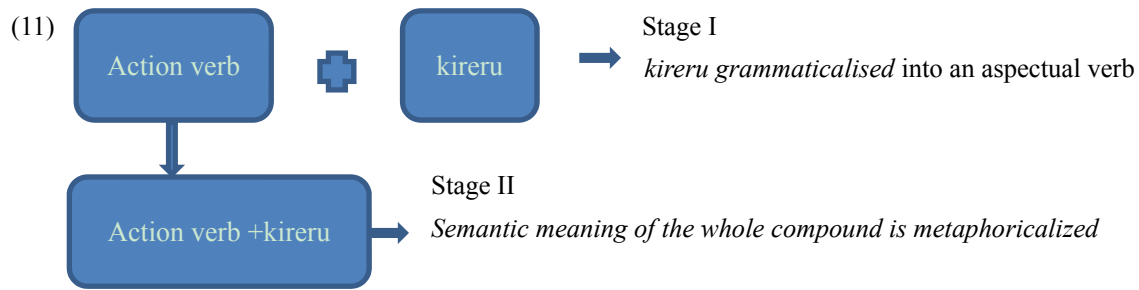
The nominal compounds in (8c) *kigen-kire* [deadline-expire] ‘expire’; *zaiko-kire* [stock-run short] ‘out of stock’ derive from verb phrases (cf. 9), where the nominal case marker *ga* has been dropped and the noun has fused to the verb to form a compound. This omission inspires us to deduce that the process of VP *zaiko ga kireru* [stock NOM run out] into the lexeme *kigenkire* is perhaps an outcome of lexicalisation.

- (9) a. *kigen ga kireru.* → *kigen-kire*
deadline NOM expire
b. *zaiko ga kireru.* → *zaiko-kire*
stock NOM run short

Furthermore, *kire* in a compound noun is written in the kana instead of the character ‘切る’. The alternation of writing raises the question whether *kire* is a semi-suffix (Note 8), thus ought to be deemed because of grammaticalisation.



Another example from (8) is worth noting, namely (8e) *uri-kireru* [sell-sold out] ‘be out of stock’. *Kireru* forms a compound verb with the action verb *uru* ‘sell’; *kireru* conveys the ASPECT of the action, i.e., ‘out of stock’. The formation of [ACTION verb + *kireru*] is productive. *Kireru* may combine with many other action verbs, e.g., *nori-kireru* [get on- ASPECT] ‘get over’, *tabe-kireru* [eat- ASPECT] ‘eat up’, *tae-kireru* [bear- ASPECT] ‘bear’, *wari-kireru* [divide- ASPECT] ‘divisible’. Crucially, these verb compounds all bear a metaphorical reading, as illustrated in (11).



In the BCCWJ corpus, there are 1214 tokens of the intransitive verb *kireru* ‘cut_{intran.}’. This study took 500 tokens at random and summarises the distribution of *kireru*’s categories as follows.

Table 2. Distribution of *kireru*’s multiple functions

Category	Types	Tokens
Substantive unaccusative	33	41
Unaccusative V with meaning lexicalised	90	164
Noun	4	8
Aspectual V	30	168
Suffix	2	20
Quantifier	3	11

Based on the previous discussion, we can draw a comparison of the pair transitive *kiru* and unaccusative *kireru* as follows.

Table 3. A comparison of multiple functions in *kireru* and *kiru*

Category	Kireru	Kiru
Substantive V	33 (41)	53 (90)
Verb use with meaning lexicalised	90 (164)	46 (68)
Noun	4 (8)	3 (58)
Aspectual V	30 (168)	22 (77)
Suffix	2 (20)	2 (7)
Quantifier	3 (11)	0
Adverb	0	1 (6)
Adjective	0	2 (3)

Table 3 suggests that:

- (i) There are more types and tokens of *kiru* than *kireru* with a substantive verb function.
- (ii) *Kireru* is detected as a quantifier but there is no data confirming *kiru* as a quantifier.
- (iii) The aspectual use in *kireru* has more tokens than the aspectual use in *kiru*.
- (iv) There are more tokens of *kiru* (59 tokens) with a noun use than *kireru* (8 tokens).
- (v) *Kireru* appears to be more likely to have meanings lexicalised (90 types, 164 tokens).
- (vi) Both *kiru* and *kireru* has a suffix function.
- (vii) *Kiru* bears two additional functions, as an adverb and an adjective.

The process by which a lexeme develops into an aspectual verb, a quantifier, a suffix is a case of grammaticalisation; the process by which lexeme develops into a noun is a case of lexicalisation. Building on this, we see that both transitives and unaccusatives are involved with grammaticalisation as well as lexicalisation. This study looks at the evolution of transitive/unaccusative verb pairs, exploring their base and, how they have transformed from being a substantive transitive/unaccusative verb to the various forms they fulfil in Modern Japanese, namely an aspectual verb, a noun, an adjective, a suffix, a quantifier and an adverb.

1.2 Transitive Verb and Unaccusative Verbs in Old Japanese

Old Japanese (the Asuka and Nara periods: 700-800) is a dead language. The pure phonetic kana script had not been developed yet and thus Chinese characters were employed to represent the vernacular on paper. Three writing systems existed: *Junsei-kanbun* ‘purely classical Chinese’ (official documents), *hentai-kanbun* ‘variant Chinese’ (poems and tales) and *man’yōgana* (poems). The following illustration comes from *Man’yōshū*, vol.5, completed in the Nara Period (710 -794 A.D.), when the Japanese language is recorded for the first time.

- (12) 短 物 乎 端 伎流 等 云之....
 Mijikaki mono o hashi **kiru** to ieru
 Short.ACOP.ADN thing ACC end cut.CONCL COMP say.POTE
 ‘We may say that we can cut one end of the short thing.’

(MYS.5)

Kiru 伎流 is in a conclusive form, written in *man’yōgana*, meaning ‘to cut’. In the Heian Period (794–1185), the phonetic script was invented, morphology plays a crucial role in derivation, conjugation and inflection. *Kiru* is written in ‘切る’. Four types (five tokens) are confirmed in the Heian period database, where *kiru* is found being employed for transitive use. With regard to *kireru*, its first appearance is in Early Modern Japanese (1832 A.D.). We can thus deduce that transitive *kiru* is the root and unaccusative *kireru* is the derived lexeme (Note 9). Transitive/unaccusative verb pairs do not always originate in transitive verbs. A counterexample comes from *tsuku/tsukeru* ‘stick to/attach’ pair. the unaccusative *tsuku* ‘stick to’ is the base. Its first appearance was in *Kojiki* (712 A.D.) (Note 10).

- (13) 曾能 那迦 都 迹 袁 加夫-都久.
 so no naka tu ni wo kabu-**tuku**
 DEM inside earth DAT ACC wrap-attach
 ‘wrap the (three chestnuts) with earth.’

(KK.42)

加夫-都久 *kabu-tuku* is a serial verb construction (Li 2019 draws an assumption that multiple verb constructions in the Early Nara Period is a case of verb serialising). Three tokens of unaccusative *tsuku* is detected in *Bussokuseki-ka* (after AD 753).

- (14) 衣 尔 著 成, 目 尔 都久 和我勢.
 kinu ni tuku nasu, me ni tuku wa ga se
 clothes DAT stick to burrs eye DAT noticeable I GEN back
 ‘the tree’s burrs stick onto the clothes; my back is noticeable.’

(MYS.1.19)

Tsuku is seen outside the *Bussokuseki-ka*. In *Man’yōshū* (Note 11) (759 A.D.), it occurs six times.

- (15) 伊波 爾 惠利都久, 多麻 爾 惠利都久.
 ipa ni werituku tama ni werituku
 stone DAT engrave-stick, gemstone DAT engrave-stick
 ‘engrave stone and gemstone.’

(BS.3)

The transitive form *tsukeru* ‘attach’ derived decades later. 13 tokens are detected, all coming from *Man’yōshū*. An illustration is provided in (16).

- (16) 白縫 (Note 12) 筑紫 乃 綿 者 身 箸而.
 Siranupi tukusi no wata pa mwi ni tukete
 Siranupi Tsukushi GEN clothes PROV body DAT put on.GER
 いまだ は 着ねど、 暖けく 見ゆ
 imada wa kinedo atatakeku miyu
 now FOC put on.CONC warm.CONT appears

‘The clothes that is made in Tsukushi is marvellous. Even now, when I put it on, it looks gorgeous.’

(MYS.3.336)

2. Grammaticalisation and Lexicalisation

Before a corpus-based investigation, it is necessary to introduce two concepts that play an essential role in the evolution of a language, viz. grammaticalisation and lexicalisation.

Grammaticalisation refers to the change whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and, once grammaticalised, continue to develop new grammatical functions (Hopper & Traugott, 2003). The study of grammaticalisation has undergone for centuries. Bopp (1816), Schlegel (1818) and Humboldt’s (1825) pilot research links it with evolutionary change for the first time. Meillet (1912) paid attention to the transformation instead of the grammatical forms and came up with the terminology ‘grammaticalisation’. About a half century later, German linguist Lehmann (1982) measured grammaticality both synchronically and diachronically. Heine and Reh’s (1984) work introduce the term into typological study on African languages, which kicked out the boom of the study on grammaticalisation in linguistic typological work. One crucial issue on the topic lies in that, it is rather difficult to capture all the grammaticalisation phenomena in diverse language families with one definition. Jerzy Kurylowicz (1965) paid attention to transition of morpheme, referring to grammaticalisation as consisting in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status. Christian Lehmann (1982) in his *Thoughts on Grammaticalization and New Reflections on Grammaticalisation and Lexicalisation*, broaden the scope, i.e., grammaticalization is a process leading from lexemes to grammatical formatives. A number of semantic, syntactic and phonological processes interact in the grammaticalisation of morphemes and of whole constructions.

The transformation of content word into a function word takes place by a gradual series of shifts. This very shift follows a certain pattern, known as ‘unidirectionality’ (Heine & Kuteva, 2002), i.e., grammaticalisation always leads from less grammatical to more grammatical forms and constructions. This pattern represents human cognition and is cross-linguistically applied. A more specific evolution path is put forward by Hopper and Traugott (2003).

(17) content item > grammatical word > clitic > inflectional affix

Another pathway may come from lexical semanticists who contend that grammaticalisation is perhaps a subtype of metaphor after searching on the shift of semantic meaning. A different view on grammaticalisation comes from Himmelmann (2004, p. 31) and Traugott (2003, p. 6) who asks for the role of context on grammaticalisation.

Japanese, is an agglutinative language, featured with phono-morphologically, sequential voicing. Morpho-syntactically, verb compounding. The Indo-European language-oriented notions do not seem to apply to Japanese, given the typological distinctions between Indo-European languages and Altaic languages. First, the meaning bleaching is not enough for identifying the degree of grammaticalisation regarding Japanese. In the case of change-of-state verbs, when grammaticalised, it is the morphological change as well as the syntactic shift (de-categorisation) that occurs; the semantic meanings retain. Second, as a moraic language, it is not phonological reduction as European languages display but sequential voicing (Note 13) that is an effect of lexicalisation. Sequential voicing accompanies morphological change ([-voiced] consonants shift into [+voiced]), but not morphological reduction. Third, Japanese aspectual verbs and potential verbs are an outcome of diachronic change.

Another concept involved in language evolution is lexicalisation, which refers to an item with a concrete semantic meaning that evolves into an item with an abstract or metaphorical reading.

Grammaticalisation and lexicalisation deal with different parts of transition: the former covers the syntactic function domain, and the latter covers the process of meaning extension. It appears that the development of Japanese compound nouns is a combination of grammaticalisation and lexicalisation.

For instance, *shime-kiri* ‘deadline’ derives from the compound verb *shime-kiru* ‘to close’. *Shime-kiru* is a transitive compound verb, carrying two meanings: a concrete meaning ‘to shut’ and an abstract meaning ‘to expire/to cut off’. The second constituent *kiru* of the compound verb *shime-kiru* initially appeared in Old Japanese (A.D. 759), behaving as a transitive verb and meaning ‘to cut’. In *shime-kiru*, *kiru* conveys an ASPECT of the first constituent, i.e., *shimeru* ‘close’, which indicates the ACTION and is not grammaticalised. *Kiru*’s transition from a substantive transitive verb into an aspectual verb in a compound verb can be argued to be the result of grammaticalisation.

Moreover, the conjunctive form of the verb compound is also noun form, i.e., *shimekiri* ‘to expire/to cut off’ (e.g., Gakkai wa boshū o shimekitta [The academic conference cut off the submission period]). CHJ brings us to the point that the first appearance of the nominal form, *shimekiri* was in 1888. This time, it is the whole compound verb *shimekiru* that turns into the noun form *shimekiri* and renders an extended meaning, i.e., ‘deadline’. Since *shimekiri* involves morphological alternation (from conclusive form into conjunctive form), the noun *shimekiri* ‘deadline’ turns out to be lexicalisation. the process is described in (18).

(18) Stage I: content word (transitive V-V)	<i>shime-kiru</i>
Stage II: V2 being grammaticalised	<i>shime-kiru (ASPECT)</i>
Stage III: V-V being lexicalised into a noun, rendering an extended meaning	<u><i>shimekiri</i> ‘deadline’</u>

This invites the question whether the two processes (grammaticalisation and lexicalisation) is a constant change leading from grammaticalisation to lexicalisation?

A good deal of effort in the past has been devoted to addressing the relationship between grammaticalisation and lexicalisation. Previous work falls into two positions. One position alleges that lexicalisation is the reverse process of grammaticalisation (cf. Kuryłowicz, 1965). The other position conceives the two processes as a constant change leading from lexicalisation to grammaticalisation and vice versa. The two processes are in an orthogonal relationship (Lehmann, 2002; Himmelmann, 2004). The transition process of the above-mentioned *shimekiri* appears to support this view. Moreno Cabrera (1998) takes a cognitive approach, arguing that grammaticalisation is a metaphorical process while lexicalisation is a metonymical process; the two are assigned to a complementary relation. These demonstrations on the relationship between the two processes are summarised in Figure 1.

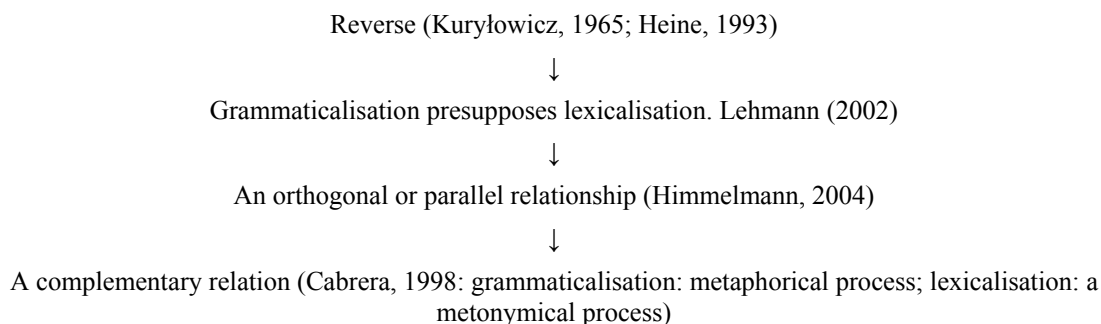


Figure 1. Previous proposals on the interrelationship between grammaticalisation and lexicalisation

The purpose of this study is three-fold:

- (a) To establish the original verb root as well as when a transitive or an unaccusative form is derived.
- (b) How transitive/unaccusative verbs transformed from being a substantive verb to the various forms they fulfil in Modern Japanese.
- (c) To investigate how the constantly changing journey of languages is accompanied by grammaticalisation and lexicalisation and, in essence, the fluid nature of the boundary between grammaticalisation and lexicalisation. For instance, the unaccusative verb *kireru* can either appear in a noun compound with the consonant *ki* being voiced, e.g., 幕切れ *maku-gire* [curtain-cut] ‘end’; 燃料切れ *nenryoo-gire* [fuel-cut] ‘out of fuel’, etc., or can appear in a noun compound without the consonant *ki* being voiced, e.g., 板切れ *ita-kire* [wood-cut] ‘a piece of wood’; 紙切れ *kami-kire* [paper-cut] ‘a piece of paper’.

The question thus is whether the unaccusative verb *kireru* ought to be treated as a suffix (a process of grammaticalisation), semi-suffix or a lexicalised noun?

To answer these inquires, this study starts by providing a working definition of ‘grammaticalisation’ and ‘lexicalisation’ that apply to Japanese data. Then it turns to diachronic issues: the development of other categories. With this in place, it aims to pin down the distinctions and interrelationship between grammaticalisation and lexicalisation.

This paper is structured as follows. Section 3 presents quantitative data on the occurrence of the different uses of

Japanese transitive/unaccusative word pairs and their derived forms in the various subperiods of the historical text corpus. Building on this, a hypothesis about their grammaticalisation- and/or lexicalisation processes is proposed. To further confirm the findings from Section 3, a case study on the categorial and semantic shift of the Japanese verb pair *kiru/kireru* (cut_{tran}/cut_{intran}) is outlined in Section 4. Section 5 highlights the results and concludes the paper.

The data for Modern Japanese comes from the corpus of BCCWJ (*Balanced Corpus of Modern Written Japanese*) by the National Institute for Japanese language and linguistics. The data of Old Japanese is extracted from the CHJ (*Japanese historical linguistic corpus*) 2.5.0 by National Institute for Japanese language and linguistics. The data of for compound verbs are extracted from the *compound verb corpus* <https://db4.ninjal.ac.jp/vvlexicon/db/> (last access 29 August 2020). The glossing follows the Leipzig Glossing Rules (<https://www.eva.mpg.de/lingua/resources/glossing-rules.php> last access 29 August 2020).

The categorisation of the development of the Japanese language is as follows:

(19)

(a) **Old Japanese** (approximately 700–800 A.D.)

Asuka Period and Nara Period (710–794 A.D.)

(b) **Early Middle Japanese (800–1200 A.D.)**

Heian Period (794–1185 A.D.)

(c) **Late Middle Japanese (1200–1600 A.D.)**

Kamakura Period (1185–1333 A.D.), Muromachi (1336–1573A.D.) and

Aduchimomoyama Period (1573–1603 A.D.)

(d) **Early Modern Japanese (1600–1868 A.D.)**

Edo Period (1603–1868 A.D.)

(e) **Modern Japanese (1868–Present)**

Meiji Period (1868–1912 A.D.), Taishoo Period (1912–1926 A.D.),

Shoowa (1926–1989A.D.), Heisei (1989–2019 A.D.) and Reiwa Period (2019–).

3. Grammaticalisation and Lexicalisation Regarding Transitive/Unaccusative Verb Pairs

Drawing on the concepts highlighted above, this section focuses on the original root of *vt/vi* pairs. Building on this, we delve into how *vt/vi* transforms from a substantive verb to the various categories in the present days. To start, we set diagnoses for grammaticalisation regarding Japanese verb as follows:

(20) **Diagnoses of grammaticalisation in Japanese verb**

(a) *The alternation of category is obligatory (either partially or fully)*

e.g., verb shifting into an affix (prefixation or suffixation, cf. (21)) or verb shifting into an auxiliary (22) or an aspectual verb (23), rendering RESULT, or, verb shifting into an adverb (24).

(21) **Suffixation (verb → suffix)**

muku ‘to face’ → *minami muki* [south-face] ‘a house/room facing south’

(22) **Verb → auxiliary**

a. *ageru* as a verb: to give

watashi wa Taroo ni hon o ageru.

I TOP Taroo DAT book ACC give

‘I give a book to Taroo.’

b. *ageru* turns into an auxiliary:

watashi wa Taroo ni tetsudatte ageru.

I TOP Taroo DAT help AUX

‘I help Taroo.’

(23) **Verb → ASPECTUAL verb**

agaru ‘to rise’ → *yaki-agaru* [bake-rise] ‘bake-complete’

iku ‘to go’ → *samuku-natte-iku* [cold-become-go] ‘become colder’

(24) **Verb** → **adverb**

shiiru ‘force’ → *Shiite, nemutteiru* [force-sleep-try] ‘try to sleep forcibly’

(b) *The grammaticalisation of a content verb into a (semi) suffix can be diagnosed via phonological alternation.*

e.g., *tsuki* derives from the intransitive verb *tsuku* ‘stick to’. When it attaches to the conjunctive form of unergative verb *umareru* ‘bear’, *tsuki*’s initial consonant /-t-/ turns voiced, i.e., /-d-/ (*umare duki* [born-stick] ‘be born with sth’).

Crucially, *X-duki* is highly productive. A search in the BCCWJ reveals about 201 types (2001 tokens) of *X-duki*. With this in place, the productivity and the consonant alternation (Note 14) can be deemed as a criterion of grammaticalisation.

(c) *The fourth diagnosis of grammaticalisation is the alter of writing.*

The lexeme that is fully grammaticalised would no longer appear in Chinese character in written form, but in *kana* script. See for instance, *nuku*. In Modern Japanese, it has two renderings: (i) when behaving as a substantive verb, it is written in the Chinese characters 抜く *nuku*, e.g., *ha o nuku* ‘tooth-ACC-pull out’; (ii) when fulfilling the function of a suffix, it appears in *kana* script instead of 抜き *nuki*, e.g. *asagohan nuki* ‘breakfast-without’.

Lexicalisation requires the following conditions.

(25) **Diagnoses of lexicalisation in Japanese verb**

(a) **Syntactic reduction**, specifically,

- VP [object + verb] has its accusative case particle omitted, e.g.,
gohan o tsukuru [meal ACC cook] ‘cook meal’
→ *gohan-zukuri* ‘meal cooking’ (Note 15)
- VP [subject + verb] has its nominal case particle *ga* lost, e.g.,
zaiko ga kureru [stock NOM run short] ‘breakfast is not eaten’
→ *ziko-kire* [stock-out]

(b) **Morphological alternation**

The verb appears in a continuative form, e.g., *atsumaru* ‘gather’ → *atsumari* (gather_{NOUN})

(c) **Phonological alternation**

The initial consonant of the non-initial portion of a compound or prefixed word becomes voiced, e.g., *gohan o tsukuru* [meal ACC cook] ‘cook meal’ → *gohan-zukuri* ‘meal cooking’.

3.1 Original Root and Derivation

In this section ten pairs are discussed. Given below is a table, presenting the first appearance of each verb pair. The upper lexeme is *vi*; the lower lexeme is *vt*. The original root is marked in bold.

Table 4. A timeline of the appearance of various functions (Note 16)

Lexeme	Transitivity	Origin/Derived
<i>tsuku</i>	intransitive 'stick to'	origin (OJ, 712)
<i>tsukeru</i>	transitive 'attach'	derived in OJ (759)
<i>kiru</i>	transitive 'cut'	origin (OJ, 759)
<i>kireru</i>	intransitive 'cut'	derived in EMDJ (1708)
<i>hatasu</i>	transitive 'carry out'	origin (LMJ, 1306)
<i>hateru</i>	intransitive 'perish'	derived in MJ (1895)
<i>deru</i>	intransitive 'exit'	origin (OJ, 759; MYS.12)
<i>dasu</i>	transitive 'take out'	derived in OJ (759)
<i>waru</i>	intransitive 'break'	origin (EMJ, 1010)
<i>wareru</i>	transitive 'break'	derived in MJ (1895)
<i>agaru</i>	intransitive 'rise'	origin (OJ, 759)
<i>ageru</i>	transitive 'raise'	derived in EMDJ (1826)
<i>komu</i>	intransitive 'to be crowded'	origin (MJ, 1887)
<i>komeru</i>	transitive 'to load'	derived in MJ (1895)
<i>tatsu</i>	intransitive 'stand'	origin (OJ, 759)
<i>tateru</i>	transitive 'raise'	derived in EMDJ (1821)
<i>todoku</i>	Intransitive 'arrive'	origin (EMDJ, 1826)
<i>todokeru</i>	Transitive 'deliver'	derived in EMDJ (1838)
<i>nuku</i>	Transitive 'pull'	origin (OJ, 759)
<i>nukeru</i>	Intransitive 'pass'	derived in MJ (1925)

Table 4 allows us to propose that most of the tokens arise from unaccusative root, and developed the transitive use in Early Middle, Early Modern and Modern Japanese, viz.

(I) Unaccusative root-base

- a. *tsuk-* was initially unaccusative (*tsuku* 'stick to' 712 A.D.) and its transitive function *tsukeru* 'attach' was derived in 759 A.D.
- b. *agar-* was initially unaccusative (*agaru* 'rise' 759 A.D.) and its transitive function *ageru* 'raise' was derived in 1826.
- c. *tat-* was initially unaccusative (*tatsu* 'stand up' 759 A.D.) and its transitive function *tateru* 'set up' was derived in 1821.
- d. *nuk-* was initially unaccusative (*nuku* 'omit' 759 A.D.) and its transitive function *nukeru* 'break through' was derived in 1925.
- e. *kom-* was initially unaccusative (*komu* 'be crowded' 1887) and its transitive form *komeru* 'count something in' was derived in 1895.
- f. *todok-* was initially unaccusative (*todoku* 'arrive' 1826) and its transitive form *todokeru* 'deliver' was derived in 1838.

(II) Transitive root-based

- a. *kir-* was initially transitive (*kiru* 'cut' 759 A.D.) and its unaccusative form *kireru* was derived in 1832.
- b. *hat-* was initially transitive (*hatasu* 'carry out' 1306) and its unaccusative form *hateru* 'perish' was derived in 1895.
- c. *war-* was initially transitive (*waru* 'break_{intran.}' 1010) and its unaccusative form *wareru* was derived in 1895.

(III) Derived at the same time

For one pair, both transitive and unaccusative form, appeared at the same time: *deru* 'come out' / *dasu* 'take out' (759 A.D.).

Having examined the base root, we are now in a position to engage with an analysis of *vt/vi* pairs' derivation of other functions. The following discussion starts with verb weakening. A search in the compound corpus brought us the following distribution of *vt/vi* pairs' derivation into an ASPECTUAL VERB.

Table 5. Distribution of transitives/unaccusatives appearing as an aspectual verb

Verb	Transitivity	Total samples	Aspectual types (percentage)
<i>tsuku</i>	Unacc.	51	19 (37%)
<i>tsukeru</i>	Tran.	100	48 (48%)
<i>kireru</i>	Unacc.	3	1 (33%)
<i>kiru</i>	Tran.	28	15 (54%)
<i>hateru</i>	Unacc.	10	10 (100%)
<i>hatasu</i>	Tran.	2	1 (50%)
<i>deru</i>	Unacc.	51	0
<i>dasu</i>	Tran.	132	26 (20%)
<i>wareru</i>	Unacc.	0	0
<i>waru</i>	Tran.	2	0
<i>agaru</i>	Unacc.	79	41 (52%)
<i>ageru</i>	Tran.	135	73 (54%)
<i>komu</i>	Unacc.	250	86 (34%)
<i>komeru</i>	Tran.	15	4 (27%)
<i>tatsu</i>	Unacc.	38	24 (63%)
<i>tateru</i>	Tran.	51	39 (76%)
<i>nuku</i>	Unacc.	23	7 (30%)
<i>nukeru</i>	Tran.	8	0

It appears that,

(a) Transitive verbs are more likely to convey ASPECT than unaccusatives are (the only exception is *komu/komeru*)

(b) One verb pair, i.e., *waru/wareru*, never appears as V2 in a compound verb. This is probably down to the AGENTIVITY: *waru* and *wareru* bear high agentivity. As a result, they are unlikely to be grammaticalised into a RESULTATIVE complement, a duty that V2 usually undertakes. The finding on transitive/unaccusative pairs' derivation into ASPECTUAL VERB/RESULTATIVE complements indicates that verbs with less agentivity are likely to get grammaticalised as aspectual verbs.

(c). Although both transitives and unaccusatives can serve as V2, the roles fulfilled by the two are different.

Recall the compound verb *shimekiru*. *Shimekiru* falls into the [predicate-complement] type of compound verb, where V1 *shimeru* renders the ACTION and V2 *kiru* denotes the RESULT. Here, *kiru* is grammaticalised. The conjunctive form of *shimekiru*, i.e., *shimekiri* renders a metaphorical reading: deadline. In BCCWJ, the V-V *shimekiru* has merely eight types. It is its conjunctive form, *shimekiri* 'deadline', that appears to be mostly used (563 tokens).

(26) **Grammaticalisation:** *kiru* renders an aspect in V₁-*kiru* (e.g., *shimekiru*).

Lexicalisation: V-V *shimekiru* shifts into conjunctive form *shimekiri*, conveying an extended meaning 'deadline'.

This leads to a hypothesis that grammaticalisation and lexicalisation are perhaps assigned to an orthogonal relationship. To confirm this idea, the following sections draws a statistical analysis of *vt/vi* pairs' derivation into other categories: noun, suffix and quantifier as well as their lexicalisation possibilities.

3.2 *vt/vi*'s Shift into Noun/Suffix/Quantifier (Grammaticalisation)

This study took 100 tokens of the targeted verb pairs at random and calculated the distribution of them behaving as noun, suffix and quantifier from the corpus CHJ. The findings are summarised in Table 6.

Table 6. The distribution of transitives/unaccusatives shifting into other categories (Note 17)

Verb	Transitivity	Nominalisation	Suffix	Quantifier
<i>tsuku</i>	Unacc.	36 (41)	0 (0)	0 (0)
<i>tsukeru</i>	Tran.	15 (22)	5(6)	0 (0)
<i>kireru</i>	Unacc.	16 (20)	0 (0)	3 (3)
<i>kiru</i>	Tran.	14 (15)	1(3)	0 (0)
<i>hateru</i>	Unacc.	24 (27)	0 (0)	0 (0)
<i>hatazu</i>	Tran.	0 (0)	0 (0)	0 (0)
<i>deru</i>	Unacc.	2 (20)	0 (0)	0 (0)
<i>dasu</i>	Tran.	3 (4)	0 (0)	0 (0)
<i>wareru</i>	Unacc.	21 (28)	0 (0)	0 (0)
<i>waru</i>	Tran.	11 (16)	0 (0)	1 (1)
<i>agaru</i>	Unacc.	30 (36)	0 (0)	0 (0)
<i>ageru</i>	Tran.	1 (1)	0 (0)	0 (0)
<i>komu</i>	Unacc.	15 (15)	49 (51)	0 (0)
<i>komeru</i>	Tran.	2 (2)	0 (0)	0 (0)
<i>tatsu</i>	Unacc.	1 (1)	0 (0)	0 (0)
<i>tateru</i>	Tran.	0 (0)	0 (0)	0 (0)
<i>todoku</i>	Unacc.	0 (0)	0 (0)	0 (0)
<i>todokeru</i>	Tran.	4 (4)	0 (0)	0 (0)
<i>nuku</i>	Unacc.	2 (2)	4 (6)	1 (1)
<i>nukeru</i>	Tran.	5 (5)	0 (0)	0 (0)

As shown in Table 6,

(a) The shift into a quantifier is limited to unaccusative verbs, e.g., *kireru* → *hito kire* [one-cut] ‘a slice’.

(b) Both transitives and unaccusatives may shift into a suffix, as illustrated in (27).

(27) Transitive: *kiru* → *hitori kiri* [one person-cut] ‘all on one’s own’;

Unaccusative: *nuku* → *gohan nuki* [meal-pull] ‘without eating’

Among them, the suffixation of *komu* has the largest tokens, which suggests that the degree of grammaticalisation of *komu* is extremely high.

(c) Both unaccusative and transitive are subject to nominalisation.

There are two ways of nominalising a verb: (a) with the verb’s continuative form; e.g., *atsumaru* → *atsumari*, as shown in (28a); (b) with N + the verb’s continuative form, e.g., *gomi-dashi* [rubbish-throw out_{noun}] ‘throw out the rubbish’. The second type, i.e. [N + the verb’s continuative form] has three variations (28b).

(28) Variations in nominalisation

a. The nominalised *vt/vi* appears by itself, e.g., *atsumari* ‘gather’

b. N + the verb’s continuative form

- N (**dative** case) + **unaccusative** verb, e.g., *kawa-zoi* ‘rive side’;
- N (**nominative** case) + **unaccusative** verb, e.g., *gohan-taki* ‘rice cooking’
- N (**accusative** case) + **transitive** verb, e.g., *gohan-taki* ‘rice cooking’

In light of the criterion for lexicalisation, we suggest that nominalisation is an effect of lexicalisation. However, the nominalised form by unaccusatives and transitives can both render a lexicalised meaning. Statistically, the nouns derived from unaccusatives seem to render a concrete reading (29). The nouns derived from transitives, tend to convey a metaphorical meaning (30).

(29) a. *Tsuki no yoi secchakuzai* ‘the glue that is sticky’

b. *Taki ga nutteite, tsuki ga warui* ‘The firewood is wet, so it’s hard to get burnt’

(30) a. *Tsuke de kaimonosuru* ‘shopping via charging to an account’

b. *Kono mise wa tsuke ga kiku* ‘you may charge to an account in this shop’

This study searched CHJ and arrived at the following picture for the period when different functions were derived:

Table 7. The period of deriving multiple functions

Lexeme	Transitivity	Noun	Aspectual V	Adverb	Adjective	Suffix	quantifier
<i>tsuku</i>	Unacc.	×	759	×	×	×	1712
<i>tsukeru</i>	Tran.	1888	1100	×	×	1821	×
<i>kireru</i>	Unacc.	1100	1252	×	×	×	1901
<i>kiru</i>	Tran.	1711	1220	1894	×	1894	×
<i>hateru</i>	Unacc.	974	974	1874	×	×	×
<i>hatazu</i>	Tran.	×	1592	1887	×	×	×
<i>deru</i>	Unacc.	759	1100	×	×	×	×
<i>dasu</i>	Tran.	1793	905	×	×	1703	×
<i>wareru</i>	Unacc.	1100	×	×	×	×	×
<i>waru</i>	Tran.	1887	×	×	×	1909	×
<i>agaru</i>	Unacc.	×	×	×	×	1925	×
<i>ageru</i>	Tran.	1001	1059	×	×	×	×
<i>komu</i>	Unacc.	1894	1864	×	×	1718	×
<i>komeru</i>	Tran.	1895	1909	×	×	×	×
<i>tatsu</i>	Unacc.	×	×	×	×	×	×
<i>tateru</i>	Tran.	×	×	×	×	×	×
<i>todoku</i>	Unacc.	×	×	×	×	×	×
<i>todokeru</i>	Tran.	1711	×	×	×	×	×
<i>nuku</i>	Unacc.	1925	1910				
<i>nukeru</i>	Tran.	×	1832	×	×	×	×

The above can be generalised as:

- Three unaccusative verbs are grammaticalised.
- Four transitive verbs underwent lexicalisation-grammaticalisation.
- Six unaccusative verbs underwent lexicalisation-grammaticalisation.
- Three transitive verbs underwent grammaticalisation
- One unaccusative verbs underwent lexicalisation
- One transitive verb underwent lexicalisation.

All unaccusatives and transitives are capable of being lexicalised and grammaticalised. However, lexicalisation appears to occur before grammaticalisation. Furthermore, the process by which a lexeme develops into a noun is a case of lexicalisation; the process by which a lexeme develops into an aspectual verb, an adverb, and an adjective, a suffix and a quantifier is a case of grammaticalisation.

4. A Case Study on the Category and Meaning Shift

The previous section (31) has drawn an overall picture of the original root of *vt/vi* pairs and, the likelihood of *vt/vi* pairs' evolving into other grammatical categories. The findings support our hypothesis that grammaticalization and lexicalisation are assigned to an orthogonal relationship.

To confirm this hypothesis, a case study of the transition now becomes appropriate. This study selects the *kiru/kireru* pair, one of the most typical change-of-state verbs, as the suitable candidate. It was shown above that *kiru/kireru* originates in transitive root, i.e., *kiru*. This study therefore begins by looking at the diachronic shift of *kiru*. Table 8 shows the derivation period of the various categories.

Table 8. *Kiru*'s functions in different periods (Note 18)

Category	Old Japanese (700–800 A.D.)	Early Middle Japanese (800–1200 A.D.)	Late Middle Japanese (1200–1600 A.D.)	Early Modern Japanese (1600–1868 A.D.)	Modern Japanese (1868–1947) (Note 19)
Substantive V	1	53	83	48	373
Noun		1		8	97
Adverb				4	39
Suffix					29
Aspectual			7	1	7

4.1 *Kiru* (transitive)

4.1.1 *Kiru* in Old Japanese

Kiru appeared only once in Old Japanese (*Man'yōshū*, vol.5), written as 伎流. It behaves as a substantive transitive verb.

- (32) 短 物 乎 端 伎流 等 云之....
 Mijikaki mono o hashi *kiru* to ieru
 Short.ACOP.ADN thing ACC end cut.CONCL COMP say.POTE
 ‘We may say that we can cut one end of the short thing.’

(MYS.5)

The substantive transitive function remained as the main function in every period.

4.1.2 *Kiru* in Early Middle Japanese

There are 54 tokens of *kiru* in Early Middle Japanese, 53 behaving as a transitive verb and one token as an aspectual verb.

4.1.2.1 *Kiru* as a Transitive Verb

Two forms of *kiru*, as a transitive verb, are observed: (a) as a single verb, e.g., (33); (b) as V1 in a compound verb, e.g., (34).

(33) *Kiru* as a single verb

- たむけ に は つづり の 袖 も 切る べき に
 Takemu ni wa tsuzuri no sode mo kiru beki ni
 Offer DAT FOC coarse GEN sleeve FOC cut.CONCL AUX DAT
 紅葉 に あける 神 や かへさ む。
 kooyoo ni akeru kami ya kaesa mu.
 red leaves DAT get tired of.AND god EXCL return AUX

‘We offer paper streamers to the God. However, the God who has got tired of the red leaves might have turned down the offer.’

(KW 906)

(34) *Kiru* as V1 in a compound

- 身 ひとつ を のみ 切り砕く ここち す。
 Mi hitotsu o nomi kiri-kudaku kokochi su
 Body one ACC only cut-smash feeling do

‘It feels like my body was cut and smashed into pieces.’

(KN 974)

In Kageroo Nikki (EMJ, 974), *kiru* forms a compound verb with another action verb, i.e., *kudaku* ‘smash’. The two constituents render a substantive transitive function and syntactically weigh equally. There are 18 tokens in total of *kiru*’s transitive verb use in compound verbs. Early Middle Japanese is a significant period in Japanese linguistics, as kana script was developed; the lexical integrity of the compounds becomes tighter. Each verb in multiple verb combinations is assigned to a coordinate or a successive relation and receive equal syntactic and semantic weight. Thus, the combined patterning may be a way of verb compounding.

This said, we cannot say that *kiru* merely bears substantive function. In the following compound verbs, it seems to render an aspect.

4.1.2.2 *Kiru* as an Aspectual Verb

In the work *Genjimonogatari* (Early Middle Japanese, 1008 A.D.), *kiru* fulfils an aspectual function.

- (35) 右近は、言ひ 切りつる よし言ひみ たる に。
 Ukon wa iikiritsuru yoshiiiru taru ni
 Ukon TOP say-refuse.ADNM well say PERF DAT

‘Ukon has already expressed his rejected feeling.’

(*Genjimonogatari* 1008)

There is only one token of this aspectual use. The next data of *kiru* appearing as V2 in a compound verb is from *Ujijyuimonogatari* (1220): 荒巻の縄を押切りて、刀して藁を押し開く, where *kiru* functions as a substantive transitive verb.

4.1.3 Kiru in Late Middle Japanese

In Late Middle Japanese, there are 90 tokens of *kiru*. Apart from 83 tokens as a transitive verb, 7 tokens are as an aspectual verb.

Example (36) is an illustration from *Heekemonogatari* (the Kamakura Period: 1185–1333 A.D.), where *kiru* renders an ASPECT.

(36) 入道、院がた の 奉公 おもひきったり (Note 20)...

Nyuudoo ingata no hookoo omoi-ki.tari
TAIRA NO KIYOMORI monk-emperor GEN service think-cut.AUX

‘Taira no Kiyomori abandons the idea of serving the monk emperor.’

(*Heekemonogatari* before 1309)

Further illustration of *kiru*’s aspectual use is found in the Aduchimomoyama Period (1573–1603 A.D.), i.e., the work *Amakusabanheekemonogatari* (1592), cf. (37).

(37) 私 が 為 に 深い 罪 と 成り まらせうずれば,

Watashi ga tame ni fukai tsumi to nari maraseureba
I GEN sake DAT deep sin COMP become.CONT-HUMB.PROV
唯 返らせられい と 言えども 思い切る と。
tada kaeraserarei to iedomo omoikiru to
merely response.SPON-NEG COMP say.CONC think-despair COMP

‘If it was for my sake, you were accused of deep sin, I shall then resign to fate and not respond.’

(*Amakusabanheekemonogatari* 1592)

The grammaticalisation of *kiru* into an aspectual verb is seen outside of change-of-state expressions. The following data comes from Late Middle Japanese and provides illustrations of a case where *kiru* plays the role of an aspectual verb in a motion event.

(38) 本郷 新花 町 の 塵芥 坂 を 下り 切る。

Hongo Shinhana choo no Chiriakuta saka o ori kiru
Hongo Shinhana street GEN Chiriakuta slope ACC go down completely

‘Go down the Chiriakuta slope of Hongo Shinhana.’

(*Heike Monogatari* 1592)

In the compound *ori-kiru* ‘go down- completely’, V1 *oriru* ‘go down’ denotes the MANNER of action and V2 conveys the ASPECT of the action, i.e., ‘completely’. A similar formation is found in 這入り切る *haihairikiru* ‘completely entre’.

Building on this, it seems sound to propose that the grammaticalisation of *kiru* started in the Kamakura Period, the beginning of Late Middle Japanese and becomes more solidified towards the end of Late Middle Japanese, i.e., the Aduchimomoyama Period.

4.1.4 Kiru in Early Modern Japanese

This section analyses Early Modern Japanese data, a period when *kiru* derived two new functions: adverb (four tokens) and noun (eight tokens). The transitive verb use is retained as the main function (48 tokens are confirmed).

4.1.4.1 Kiru Derives an Adverb (kiri)

Below is an illustration from 丹波与作待夜のこむろぶし, a work completed in 1707, where *kiru* displays an adverb function and is written as *kiri ni*.

- (39) 一番 切り に 突いてみて、八貫 (Note 21) を 済むか、
 ichiban kiri ni tsuitemite yakkan o sumuka
 the very first cut DAT take.try eight copper coin ACC end
 十六貫 負うもの か、
 Juurokukan ou mono ka
 Sixteen copper coin owe CONJ QUESTION MARK
 ‘give it a go, seeing if it is an eight-copper coin or sixteen-coper coin.’

(*Tanbayosakumatsuyonokomurobushi* 1707)

Kiri is followed by a dative case particle, i.e., に. There are only two tokens of adverb use; all in *Tanbayosakumatsuyonokomurobushi* (1707).

4.1.4.2 Kiru Derives a Noun (kiri)

Another intriguing finding is that *kiru* derives a noun function in Early Modern Japanese. The illustration comes from 冥途の飛脚 *Meidonohikyaku* (1711).

- (40) この次 は 段々 に 巾着切り から
 Kono tsugi wa dandan ni kinchakukiri kara
 DEM next TOP gradually DAT pickpocket cut ABL
 家尻切り はては 首切り。
 yajiri kiri hate wa kubikiri
 house wall cut end FOC neck cut

‘The next will be stealing from the pickpocket, then, cut the house wall and finally cut the head.’

(*Meidonohikyaku* 1711)

There are three tokens of *kiru* being a noun in (30), i.e., 巾着切り *kinchakukiri* ‘pickpocket-cutting’; 家尻切り *yajirikiri* ‘house wall-cutting’; 首切り *kubikiri* ‘neck-cutting’. Essentially, no sequential voicing is detected. Another noun use of *kiru* includes:

- (41) 上銀 二百目 今晚 切り に 借りました。
 Joogin nihyakumon konban kiri ni karimashita
 Silver two hundred tonight deadline DAT borrow.PAST

‘Tonight, as the deadline, I borrowed 200 monme of silver’.

(*Onnakoroshiaburajigoku* 1721)

4.1.4.3 kiru as an aspectual verb

Furthermore, one token of aspectual use is detected, i.e., 春色江戸紫 *Shunshokuedomurasaki*, a work completed in 1864.

- (42) ご 飯 を くさらせる に は 困り切る。
 Go han o kusaraseru ni wa komarikiru
 HON food ACC rot.CAUSE.CONCL DAT FOC distress.extremely

‘It would be very distressing to cause the food to rot.’

(*Shunshokuedomurasaki* 1864)

4.1.5 Kiru in Modern Japanese

In Modern Japanese (specifically, 1868–1941) the most frequent function of *kiru* is the transitive verb (373 tokens). The second largest number of tokens was attributed to the noun use (97 tokens). The adverb use had the third largest number (39 tokens), while 29 tokens had the suffix function. The aspectual function accounts for 7 tokens.

4.1.5.1 Kiru Derives a Suffix: kiri

It is in 1888, when *kiru* is seen to have been grammaticalised into a suffix, cf. (43).

- (43) 預言者 なる 英傑 切りに 輩出し
 yogensya naru eiketsu kiri ni haishutsu shi
 prophet become great man only DAT appear do
 ‘Great men only appeared, who can determine the future.’

(Kokumin no tomo 1888)

Another illustration of the suffix function is in (44).

- (44) 只 二人 切りの生活 なん です が...
 tada futari kiri no seikatsu nan desu ga
 only two persons cut GEN life PART predicate.HON PART
 ‘The couple life...’

(Jogakusekai 1909)

4.1.5.2 *kiri* as an Adverb

A total of 39 tokens have been detected as an adverb. An illustration is provided in (45).

- (45) 隋唐 の 制度 を 切り 模倣 した
 SuiTang no seido o kiri mohoo shita
 SuiTang GEN system ACC completely imitate do.PAST
 ‘Completely imitate the system of the Sui and Tang Dynasty.’

(Taiyoo 1895)

切り *kiri* is the continuative form of transitive verb *kiru*. Here, it modifies the degree of 模倣 *mohoo* ‘imitate’, meaning ‘completely’.

4.1.5.3 *kiru* as an Aspectual Verb

In Taiyoo (1909), eight types (20 tokens) of *kiru* are found rendering an ASPECT: *kiru* is not bound; the semantic meaning of *kiru* is not completely lost; it renderings how an action, event, or state, denoted by the first verb. Illustrations are provided in (46).

(46) *Kiru* in change-of-state compound verb

- a. 絶ち切る *tachikiru* ‘cut out’ (describe an action)
- b. 無くなり切る *nakunarikiru* ‘completely disappear’ (describe a state)
- c. 疲れ切る *tsukarekiru* ‘extremely exhausted’ (describe a state)
- d. 灼き切る *yakikiru* ‘burn off’ (describe an action)
- e. 閉じ切る *tojikiru* ‘totally close’ (describe an action)
- f. 悶え切る *modaekiru* ‘worry a lot’ (describe a state)
- g. 成長し切る *seichooshikiru* ‘completely grown up’ (describe an event)
- h. 苦り切る *nigarikiru* ‘disgusted’ (describe a state)

Later, in the Taishoo Period (1912–1926), *kiru*’s aspectual use is seen. The composition tends to be [unaccusative + *kiru*]. Illustrations are:

- (47) 下り切る *kudari-kiru* ‘descend-completely’; 立て切る *tate-kiru* ‘close up’.

Another striking finding in this period is that *kiru* begins to form a V-V with an unergative verb, i.e., 疲れ切る *tsukare-kiru* ‘worn out-extremely’. The pattern of *kiru*’s aspectualisation can be summarised as follows:

Stage I Early Middle Japanese

V-V *kiri-kudaku*, ‘cut-crush’, both V1 *kiru* and V2 *kudaku* are transitive. They render the MANNER of action and involve strong agentivity; no ASPECT is indicated. The two constituents are morphologically and syntactically equalled. The substantive function, i.e., ‘to cut’, is obtained in Early Middle Japanese.

Stage II Early Modern Japanese

The V-V *omoi-kiru* ‘despair’, and *komari-kiru* ‘extremely distressed’, the agentivity of *kiru* is reduced; *kiru*

behaves as an ASPECTUAL verb, rendering the RESULT of an action that is conveyed by V1, i.e. *omou* ‘think’ and *komaru* ‘distress’.

Stage III Modern Japanese

tsukure-kiru ‘extremely exhausted’, V1 *tsukareru* is an unergative V, meaning ‘being exhausted’. V2 *kiru* conveys the degree of exhaustion. The V-V bears the meaning ‘extremely exhausted’.

The foregoing discussion is summarised in Figure 2.

Early Middle Japanese (800–1200 A.D.)	appears in V2; substantive verb
Early Modern Japanese (1600–1868 A.D.)	appears in V2, form with unaccusative V; behaves as ASPECTUAL verb
Modern Japanese (1868–)	appears in V2, form with unergative V; behaves as ASPECTUAL verb

Figure 2. The path of *kiru*’s grammaticalisation as an ASPECTUAL verb

So far, discussions have focused on the shift of category (transitive verb → ASPECTUAL verb) and semantic alternation (from concrete meaning ‘cut’ → rendering the degree of V1’s state). The finding brought us to the point that the transitive function is preserved in every period. The aspectual use was derived during Late Middle Japanese; the adverb and noun use are first detected in Early Modern Japanese period; the suffix use is derived in Modern Japanese. Table 9 summarises the grammaticalisation path of *kiru*.

Table 9. Summary of *kiru*’s journey from a substantive transitive verb into various functions

Timetable	Path A: Grammaticalisation
I. Old Japanese	Transitive use
II. Early Middle Japanese	↓ Retained
III. Late Middle Japanese	Retained → aspectual use
IV. Early Modern Japanese	Retained → aspectual use; adverb; noun
V. Modern Japanese	Retained → suffix

4.1.6 Lexicalisation of *kiru*

Drawing on the category shift highlighted above, this section proceeds to another path: semantic extension. The following data comes from *Ujijyuimonogatari* (1220); *Shinjuuyoigooshin* (1722) and *Taiyoo* (MJ, 1895), where *kiru* conveys a metaphorical reading.

(48) さて 煩惱 を 切り 捨つ。
sate bonnoo o kiri sutsu
now passion ACC cut throw away

‘Now, it is time to throw away the passions.’

(*Ujijyuimonogatari* 1220)

(49) さてこそ 縁 を 切りに 来た。
satekoso en o kiri ni kita
as expected relationship ACC cut DAT come.PAST

‘I come to end the relationship.’

(*Shinjuuyoigooshin* 1722)

- (50) 現在 實 の 父様 と 親子 の
 Genzai jitsu no toosama to oyako no
 Now own GEN father COM parent-child GEN
 縁 を 切る と 云ふ 悲しい 事
 en o kuru to iu kanashii koto
 relationship ACC cut COMP say sad thing
 ‘It is such as sad thing that the relationship between the father and his own son has been cut.’
 (Taiyoo 1895)

Another instance of transitive use with a metaphorical reading is:

- (51) 帝 の 鋭利 を 切る
 Mikado no eeri o kiru
 Emperor GEN morale ACC hit
 ‘Hit the Emperor’s morale.’
 (Taiyoo 1901)

We cannot say that the above data is a matter of lexicalisation, as there is no syntactic reduction nor morphological alternation. Given this, it appears that the transitive root of *kiru/kireru* pair is not subject to lexicalisation. The following sections turn to the unaccusative verb *kireru*, seeing if it is subject to lexicalisation.

4.2 *Kireru* (*cut*_{unaccusative})

Having drawn a picture of *kiru*’s evolution, this section analyses its unaccusative pair, *kireru*, by posing three question: (a) when it was derived from the transitive root (4.2.1); (b) how it derived other syntactic functions (4.2.2); (c) whether the process involved lexicalisation (4.2.3).

To begin with, Table 10 summarises the periods during which *kireru* derives other functions:

Table 10. *Kireru*’s functions in different periods

Category	Old Japanese (700–800 A.D.)	Early Middle Japanese (800–1200 A.D.)	Late Middle Japanese (1200–1600 A.D.)	Early Modern Japanese (1600–1868 A.D.)	Modern Japanese (1868–1947) (Note 22)
Substantive V	0	14	9	60	199
Noun	0	1	1	9	22
Aspectual	0	0	0	0	90

4.2.1 *Kireru*’s Grammaticalisation

The first appearance of *kireru* is in Early Middle Japanese, therefore, our investigation starts from this period.

4.2.1.1 *Kireru* Derived from the Transitive Root *kiru*

Kireru is derived in 951, in the work *Oowamonogatari*, Early Middle Japanese, cf. (52).

- (52) いと 香ばしき 紙 に、切れたる 髪
 ito koobashiki kami ni **kiretaru** kami
 very fragrant.ADNML paper DAT cut_{INTRAN.}ADNML hair
 ‘The hair that is cut in a very fragrant paper.’
 (*Oowamonogatari* 951)

There are in total 14 tokens of *kireru* in Early Middle Japanese, all behaving as an unaccusative verb.

4.2.1.2 *Kireru* as a Noun

One hundred years after *Oowamonogatari*, *kireru* appeared in 今昔物語集 (*Konjyakumonogatari* 1100), as a quantifier.

- (53) 此く 三 切れ に 昨切て ...
 kaku san **kire** ni kui-kite
 like this three cut_{INTRAN} DAT eat- cut_{TRAN}
 ‘Bite it into three pieces like this.’

(Konjyakumonogatarishuu 1100)

4.2.2 Kireru in Late Middle Japanese and Early Modern Japanese

The distribution of *kireru* in Late Middle Japanese as well as Early Modern Japanese remains similar to that in Early Middle Japanese: the majority has an unaccusative use and the rest has a noun use.

4.2.3 Kireru in Early Modern Japanese

In Early Modern Japanese, some data suggest a metaphorical reading of *kireru*.

4.2.3.1 Kireru as an Unaccusative Verb

(54) is an instance where *kireru* conveys a substantive meaning (literal meaning).

- (54) 徳川 侍 の なまくら刀 に も
 Tokugawa samurai no Namakuragatana ni mo
 Tokugawa warrior COP Namakura warrior DAT FOC
 少し は 切れる 所 が ござりませう。
 sukoshi wa **kireru** tokoro ga gozarimaseu
 a little FOC break_{INTRAN} place NOM aru.HON

‘There is a slight nick in the Namakuragatana-Tokugawa warrior.’

(Shoogakkoo Kokugo 3, 1918)

(55) unaccusative, metaphorical reading

- 視覚 と 外界 と の 縁 は 切れる。
 Shikaku to gaikai to no en wa **kireru**
 Perception COM exterior COM GEN relationship FOC cut
 ‘No longer care for the exterior’.

(Taiyoo 1901)

4.2.3.2 Kireru Derives an Aspectual Use

The aspectual function has been very extensively employed in this period. A total of 90 tokens are confirmed, cf. (56). The reason of treating *kireru* as an aspectual verb rather than a suffix is due to the followings: *kireru* is not bound; the semantic meaning of *kireru* is not completely lost; it renderings RESULT of the action that is carried out by the first verb.

(56) *Kireru* as an ASPECTUAL verb

- やり切れる *yarikireru* ‘carry out-throughout’ (describe an action)
 捨て切れる *sutekireru* ‘give up-completely’ (describe an action)
 耐え切れる *taekireru* ‘bear-throughout’ (describe an action)
 数え切れる *kazoekireru* ‘calculable’ (describe an action)
 張り切れ *harikireru* ‘burst’ (describe an action)

It ought to be noted that *kireu* can also be treated as the potential form of transitive verb *kiru*. In this regard, the original compound verb of (56) would be (57):

(57) *yarikiru*; *sutekiru*; *taekiru*; *kazoekiru*; *harikiru*. The compound verbs in (57) differ from the compound verbs in (56) in that (56) describes an event that happens spontaneously. On the other hand, (57) involves an intention of carrying out an action thoroughly. The context of *kireru* in the corpus suggests a spontaneous event rather than an intended action. Therefore, *kireru* is treated as the unaccusative verb, functioning as an aspectual verb, rather than the potential form of transitive verb *kiru*. Building on this, we propose that unaccusative verbs can be

subject to grammaticalisation, rendering an aspect for the action verb (V1).

4.2.4 Kireru's Lexicalisation

Recall that lexicalisation regarding Japanese requires the following conditions.

(a) Syntactic reduction

- VP [object + verb] has its accusative case particle omitted,
- VP [subject + verb] has its nominal case particle *ga* lost

(b) Morphological alternation

The verb transits to a continuative form, conveying a noun function.

(c) **Phonological alternation:** the initial consonant of the non-initial portion of a compound or prefixed word becomes voiced

An illustration is extracted from a work in Early Modern Japanese: 心中刃は氷の朔日 (*Shinjuuyaiba wa koori no tsuitachi* 1709), where, *en-kireru* involves syntactic reduction, i.e., VP [subject + verb] has its nominal case particle *ga* lost (cf. the original form was: *en ga kireru*).

- (58) 縁切れて、 床離れ 行く。
 enkirete yukahanare iku
 relationship end.CONJ floor leave.CONJ go.CONCL
 ‘ended the relationship and left.’

(*Shinjuuyaiba wa koori no tsuitachi* 1709)

This character of *kire* is productive. There are four tokens in *Shinjuuyaiba wa koori no tsuitachi* (1709). A further search in the historical corpus reveals that there are 200 tokens of *kireru* (Table 11), where,

- Syntactically, the VP [subject + verb] lost the nominal case particle *ga*;
- Morphologically, The verb transits to a continuative form;
- Phonologically, the initial consonant of the non-initial portion of a compound or prefixed word becomes voiced. Among the 18 types (34 tokens) in Table 11, 14 types (26 tokens) are subject to sequential voicing (Note 23).

Table 11. Data of *kire*'s lexicalisation

Lexicalised <i>kireru</i>	Types	Tokens	Sequential voicing	First appearance
肥料切れ	1	1	ひりょうぎれ	1991
手切れ	1	2	てぎれ	1996
弾切れ	1	1	たまぎれ	2001
賞味期限切れ	1	7	しょうみきげんぎれ	1998
品切れ	1	4	しなぎれ	2008
電池切れ	1	1	でんちぎれ	2005
紙切れ	1	3	かみきれ	2004
端切れ	1	1	はぎれ	2005
幕切れ	1	3	まくぎれ	2002
尻切れ	1	1	しりきれ	2005
身切れ	1	1	みぎれ	2002
検査切れ	1	1	けんさぎれ	2005
板切れ	1	1	いたきれ	2000
燃料切れ	1	1	ねんりょうぎれ	2004
布切れ	1	1	ぬのきれ	2002
棒切れ	1	1	ぼうきれ	1996
息切れ	1	1	いきぎれ	2005
電球切れ	1	1	でんきゅうぎれ	2005

The nominalised use of *kireru* in the above data undergo the following transitions:

(a) The nominal case particle *ga* omitted, e.g.

検査が切れる→検査切れ; 燃料が切れる→燃料切れ; 電球が切れる→電球切れ, etc.

(b) The verb transits to noun form, e.g., *kireru* → *kire*

(c) Though voicing occurs in the first consonant which is a criterion of grammaticalisation, 切れ cannot be treated as a suffix yet, because, most essentially, a suffix is written in kana rather than in Chinese characters.

With this in place, the evolution of *kireru* in Modern Japanese can be claimed to be a case of lexicalisation rather than affixation (i.e., grammaticalisation).

4.3 Summary

This section has tackled with *kireru*'s decategorisation: how *kireru* is derived from its transitive pair *kiru* and, how it itself derived an aspect, a noun and a semi-suffix function. The finding suggests that *kireru* emerged in Early Middle Japanese, specifically in 951. In 1100, it derived a noun use. In Early Middle Japanese, the unaccusative use derived an aspectual function and the noun use began to render a metaphorical reading. *Kireru*'s lexicalisation appears to begin in Modern Japanese. The lengthy journey of grammaticalisation and lexicalisation is provided in Table 12.

Table 12. A timetable of *kireru*'s gramamticalisation and lexicalisation

Timetable	Transition
I. Early Middle Japanese	derived from <i>kiru</i> (951) 150 years later, the noun use is derived ↓
II. Late Middle Japanese	unaccusative use & noun use coexist
III. Early Modern Japanese	unaccusative use → aspectual use; noun use → metaphorical reading
IV. Modern Japanese	lexicalisation

Comparing the evolutions of *kireru* and *kiru*, we arrive at the following:

(I) *kiru* emerged in Old Japanese and *kireru* was derived in Early Middle Japanese;

(II) The noun use of *kireru* was derived in Late middle Japanese and the noun use of *kiru* emerged in Early Modern Japanese;

(III) The aspectual use of *kireru* emerged in Early Modern Japanese and the aspectual use of *kiru* is born in Late Middle Japanese;

(IV) *Kiru* derived an adverb use in Early Modern Japanese and the adverb use is missing in *kireru*;

(V) During Modern Japanese, *kiru* derived an apparent suffix function. *Kireru* got lexicalised.

The foregoing discussions are summarised in Table 13.

Table 13. A comparison of the evolutionary paths of *kiru* and *kireru*

	<i>kiru</i>	<i>kireru</i>
I. Old Japanese	emerged	
II. Early Middle Japanese		derived
III. Late Middle Japanese	aspectual use derived	noun use derived
IV. Early Modern Japanese	noun use, adverb use derived	aspectual use derived
V. Modern Japanese	suffix	lexicalised

Pulling these strands together, it seems that the degree of grammaticalisation in *kiru* is higher than that in *kireru*, as evidenced by the fact that *kiru* derived the aspectual function earlier than *kireru*; *kiru* derived the adverb use whilst *kireru* did not; *kiru* derived a suffix function in Modern Japanese whilst *kireru* underwent lexicalisation in the meantime. A proposal is thus put forward that: it is the transitive function that is likely to be subject to grammaticalisation and it is the intransitive function that tends to be subject to lexicalisation.

5. Conclusion

This study seeks an answer to the relationship between two evolution processes, grammaticalisation and lexicalisation, by examining data from Japanese transitive/unaccusative verb pairs' paths from a substantive verb to the various forms they fulfil in Modern Japanese, i.e., an aspectual verb, a noun, an adjective, an adverb, a quantifier and a suffix. A corpus-based investigation and a case study was carried out. This study further

provided a working definition of ‘grammaticalisation’ and ‘lexicalisation’ that applies to Japanese. The findings brought us to the following main points:

(a). Transitive verbs are more likely to convey ASPECT than unaccusatives do. The shift into a quantifier is limited to unaccusative verbs. Both transitives and unaccusatives appear to be capable of deriving a suffix function. However, the nominalised form by unaccusatives and transitives can both render a lexicalised meaning. A statistical analysis indicates that the nouns derived from an unaccusative verbs are likely to render a concrete reading; the nouns derived from a transitive verb tend to convey a metaphorical meaning. Furthermore, both unaccusatives and transitives are subject to nominalisation. Three ways are confirmed, namely,

- N (**dative** case) + **unaccusative** verb, e.g., *kawa-zoi* ‘rive side’;
- N (**nominative** case) + **unaccusative** verb, e.g., *gohan-taki* ‘rice cooking’
- N (**accusative** case) + **transitive** verb, e.g., *gohan-taki* ‘rice cooking’

By tracing the evolution of how *vit/vi* develop into various categories in different periods, this study has pinned down the distinctions between grammaticalisation and lexicalisation, as shown in Table 14.

Table 14. Distinctions between affixation and lexicalisation

Diagnoses	Grammaticalisation	Lexicalisation
Category	alter	alter
Phonologically	change	no change
Syntactic reduction	obligatory	obligatory
Morphological alternation	obligatory	obligatory
Writing	alter (from characters to kana script)	no change

Grammaticalisation (affixation) and lexicalisation in Japanese both require syntactic reduction and morphological alternation. The two differ in that lexicalisation does not require an alternation in writing, i.e., a lexicalised item can remain being written in Chinese characters whilst a grammaticalised item can only appear in kana script. Phonological alternation is obligatory in grammaticalisation but not required by lexicalisation. Lexicalisation appears to occur before grammaticalisation.

Illustrations of transitive/intransitive verbs that share the same word form

- a. *mado o tojiru* ‘close the window’
- b. *mado ga tojiru* ‘the window is closed’
- a. *zaisan ga takusan morau koto ha shinpai ga tomonau* ‘inheriting lots of money brings with anxiety’
- b. *kiken o tomonau* ‘accompany dangers’
- a. *nimotsu o hakobu* ‘carry a load’
- b. *koto ga hakobu* ‘(project, etc.) go smoothly’
- a. *mizu ga haru* ‘water froze’
- b. *ne o haru* ‘spread root’
- a. *doa o hiraku* ‘open a door’
- b. *do ga hiraku* ‘the door opens’
- a. *ibunka ni fureru* ‘to know about the intercultural’
- b. *te o fureru* ‘touch with hand’
- a. *tokee o maku* ‘wind up a clock’
- b. *kiri ga maku* ‘be shrouded in mist’
- a. *ryoo ga masu* ‘grow in numbers’
- b. *ninki ga masu* ‘gain in popularity’
- a. *kai o moyoosu* ‘hold a meeting’
- b. *arashi ga moyoosu* ‘there is a storm brewing’
- a. *himo o musubu* ‘tie a string’

- b. *mi ga musubu* ‘bear fruit’
 a. *kaisha de hataraku* ‘work in a company’
 b. *nusumi o hataraku* ‘commit a theft’
 a. *sen o hiku* ‘draw a line’
 b. *mizu ga hiku* ‘water flow out’
 a. *kaze ga fuku* ‘the wind blow’
 b. *fue o fuku* ‘blow a flute’
 a. *hon o motsu* ‘carry a book’
 b. *karada ga motsu* ‘bear’

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Dictionaries

Kooijen Dictionary

Abbreviations

ACC	accusative
ACOP	adjectival copula
AND	adnominal
ADV	adverb
CONC	concession
CONCL	conclusive
COND	conditional
CONJ	conjunctural
CONT	continuous
COP	copula
COS	change-of-state
DAT	dative
DEM	demonstrative
EMPH	emphatic
ETOP	emphatic topic
EXCL	exclamatory
FOC	focus
GER	gerund
HON	honorific
IMP	imperative
INF	infinitive
IJP	interjectional particle
MPST	modal past
NEG	negative
OPT	optative
PASS	passive

PART	participle
PLUR	plural
PREF	prefix
PREV	preverb
PROG	progressive
PRON	pronoun
PROV	provisional
RESP	respect
SPON	spontaneous
SPST	simple past
TOP	topic

Corpora

The Balanced Corpus of Modern Written Japanese (by National Institute for Japanese language and linguistics): <http://www.kotonoha.gr.jp/shonagon/>

The Japanese historical linguistic corpus 2.5.0 (by National Institute for Japanese Language and Linguistics): <https://chunagon.ninjal.ac.jp/>

Notes

Note 1. Lexemes that can appear both in kana and Chinese characters are ‘semi-affixed’ (in that they are still undergoing the process of grammaticalisation).

Note 2. Intransitive verbs have two subtypes: unergative verbs and unaccusative verbs. In this introduction section, I use the term ‘intransitive’ to cover all possible ways of intransitive verbs.

Note 3. The illustrations are drawn from Masahiko Satoo (2020) retrieved August 29, 2020, from <http://jgrammar.life.coocan.jp/ja/index.htm>

Note 4. Illustrations are provided at the end of the text.

Note 5. An aspectual verb is usually rendered by the second constituent in a compound verb. It construes STATE or RESULT of the action conveyed by the first constituent. Such verb compound in Kageyama’s (1993, 1996) regard, is ‘syntactically formed V-V’.

Note 6. It ought to be noted that *omoikitte* ‘drastically’ is the gerund form of the compound verb *omoikiru*. A search in the BCCWJ found 756 tokens of *omoikitte* as an adverb. This study alleges the process of a compounding verb turning into an adverb use is an outcome of grammaticalisation (the criteria of grammaticalisation in Japanese is provided in Section 3). Although X-kiru is a highly productive ‘syntactically formed V-V’, not all compound verbs can be grammaticalised into an adverb, e.g., *norikiru* ‘overcome’, *fumikiru* ‘make a bold start’, *tabekiru* ‘eat everything’ are not derived into *norikitte*, *fumikitte*, *tabekitte*.

Note 7. Whether it is the *vt* or *vi*, it always appears as the second constituent of the compound verb when it acts as an aspectual verb. Crucially, these verbs no longer indicate a substantive MANNER of action, but convey a STATE. Such verb compound in Kageyama’s (1993, 1996) regard, is ‘syntactically formed V-V’.

Note 8. Some verbs undergo a phonological change (voicing) when suffixed, e.g., *tsuku* – *zuki* (cf. *tsuki*).

Note 9. We will get back to the derivation process of *kireru* in Section 4.

Note 10. *Kojiki* is written in the *hentai-kanbun* ‘variant Chinese’ script and is considered the oldest extant chronicle in Japan, recording myths as well as the history of Mikado, the Emperor of Japan.

Note 11. *Man’yōshū* is written in *man’yōgana*. It was employed in Late Old Japanese and inspired the invention of the kana script in the Heian Period (794–1185, Early Middle Japanese).

Note 12. 白縫 (*siranupi*) is a ‘makurakotoba’ for the place name 筑紫 (*tukushi*). *Makurakotoba* (枕詞), literally pillow words, are figures of speech used in Japanese waka poetry, where epithets are used in association with certain words. The set phrase can be thought of as a “pillow” for the noun or verb it describes.

Note 13. Sequential voicing is a striking phonological feature of nominal compounding in Japanese: when two

nouns are combined, the first consonant of N2 is voiced, e.g., *kiri* is voiced in *uragiri* ‘betray’ and *usugiri* ‘thin slice’. Sequential voicing has two variations: [N_{MODIFIER} – N₂] and [N_{OBJECT} – N_{TRAN.conj.}].

Note 14. Consonant alternation refers to the initial [-voiced] consonants /k/, /s/, /ç/, /t/, /tç/, /ts/, /h/, /ç/, /ϕ/ become [+voiced] consonant /g/, /z/, /(d)z/, /d/, /b/.

Note 15. English verb’s nominalisation is realised by turning the verb into gerund form.

Note 16. Old Japanese: OJ, Early Middle Japanese: EMJ, Late Middle Japanese: LMJ, Early Modern Japanese: EMDJ, Modern Japanese: MJ.

Note 17. The number in () refers to the tokens; the number outside () is the types. The diagnosis of nominalisation and suffixation lies in the writings: nominalised lexemes are written in Chinese characters whilst suffixes appear in *kana* script.

Note 18. The numbers in Table 8 refers to tokens.

Note 19. The period of Modern Japanese begins with 1868 and extends to the present days. The scope of the CHJ corpus has been confined to 1947. Therefore, this study calculates the data till 1947. The data for the present-day would be drawn from the BCCWJ corpus.

Note 20. 「ひ」 is 歴史的仮名遣, it corresponds to っ in Modern Japanese.

Note 21. 貫 was a sort of currency used before the Edo Period.

Note 22. The period of Modern Japanese begins with 1868 and extends to present days. The scope of CHJ corpus has been confined to 1947. Therefore, this study calculates the data up until 1947. The data for present-day would be drawn from the BCCWJ corpus.

Note 23. 端切れ has two pronunciations: *hagire* and *hashikire*. Among the two, *hagire* appears to be favoured. There are two pronunciations in 板切れ: *itakire* and *itagire*. It is the *itakire* that is used more often. 布切れ has two pronunciations: *nunokire* and *nunogire*. *Nunokire* is used more often.

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