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Diachronic Syntactic Change and Language Acquisition: A View from Nominative/Genitive Conversion in Japanese

Yoshiki OGAWA*

Graduate School of Information Sciences, Tohoku University, Sendai 980-8579, Japan

Harada (1971) argued some forty five years ago that the Japanese phenomenon called "Nominative/Genitive Conversion" (NGC) was undergoing a syntactic change, which was detected as *idiolectal variations.* Synchronically, Miyagawa (2011) argues that the NGC is not a free alternation but that more stative predicates are more likely to accept a Genitive subject. However, no one has ever proposed an argument that bridges the synchronic preference for "stativity" of the NGC and its diachronic syntactic change, which is characterized as "stativization." In this article, we will show that the diachronic syntactic change has been in progress at least for the last 100 years. It will be shown that the semantic "stativization" is an epiphenomenon of the syntactic microparametric change which we refer to as "clause shrinking," or a change in the syntactic size of the Genitive Subject Clause (GSC) from CP to TP to vP to VP/AP. Moreover, we will explain how such a drastic language change have actually influenced language acquisition for children who were born in different time periods, by integrating Kayne's (2000) microparametric syntax, Snyder's (2017) theory of competition between incompatible constructions, Lightfoot and Westergard's (2009) micro-cue analysis of language acquisition, Manzini and Wexler's (1987) Subset Principle, and Bošković (1997) Minimal Structure Principle.

KEYWORDS: Nominative/Genitive Conversion, Japanese, diachronic change, frequency change, language acquisition, microparametric syntax, corpus

1. Introduction

In the modern Japanese, as well as in all the other Nominative–Accusative languages in the world, the subject of a clause is usually marked for the Nominative Case morphology *ga*. In Japanese, however, especially in an adnominal clause, there is another option of morphological Case-marking such that the subject is marked for the Genitive Case *no*, as in (1):

(1) a. Taro-**ga** sun-dei-ru mati
Taro-**Nom** live-Prof-Nonpast town
'the town where Taro is living'
b. Taro-**no** sun-dei-ru mati
Taro-**Gen** live-Prof-Nonpast town
'the town where Taro is living'

In generative linguistics, this phenomenon has usually been referred to as the "Nominative/Genitive Conversion" or "*Ga/No* Conversion," and a pile of synchronic analyses have been proposed to account for why the Case conversion is possible in some syntactic environments but not in others (Harada (1971, 1976); Nakai (1980); Miyagawa (1993, 2011, 2013); Watanabe (1997); Ochi (2001); Hiraiwa (2002, 2005), Maki and Uchiori (2008); among others), but almost nothing has been understood about how the phenomenon is related to the Case system of a classical Japanese (which is totally different from the current one, as shown below), whether there is an ongoing change in the applicability of the syntactic phenomenon, and if any, how such a language change can be explained under the parametric syntax, which began with the advent of the Principles and Parameters Theory (Chomsky 1981), since it is only Harada (1971, 1976) who discussed the idiolectal variation about the (im)possibility of *Ga/No* Conversion in certain constructions. Nambu (2007, 2014) presents a result of a corpus search which shows the existence of decline in the frequency of Genitive subject clauses in the last 100 years, though he presents no investigation of construction-by-construction diachronic change in the NGC or no syntactic explanation of any diachronic change.

In this article, we will first show a result of my own large-scale corpus-based study which shows that the syntactic subconstructions in which a Genitive subject clause (henceforth, GSC) can be licensed have become more and more narrowed even in the last 100 years, and there are at least two more dialects than what Harada (1971) identified about

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*Corresponding author. E-mail: ogawa@ling.human.is.tohoku.ac.jp

the extent to which the GSC can be licensed. Since his identified dialects are called Dialects A and B, two more dialects will be referred to as Dialects C and D. We will argue that the Dialect A, which is directly linked to the grammar of the classical Japanese, has almost completely disappeared, and the remaining three dialects have been spread over three different age groups who are alive now, as of the years 2016–2018, and that the microparametric change among the four dialects has been triggered by different micro-cues available for children in different time periods. In discussing the issue of how language change is related to language acquisition, we will resort to Kayne's (2001) microparametric syntax of language variation and Lightfoot and Westergaard's (2007) micro-cue analysis about the relation between language change and language acquisition, as well as Manzini and Wexler's (1987) Subset Principle and Westergaard's (2014) economy principle of children's production as one of the third factors (Chomsky (2005)).

This article is organized as follows: in Sect. 2, we will argue how the language change in Nominative/Genitive Conversion (henceforth, NGC) can be assimilated or analogized to a well-known phenomenon of language change, and review the previous generative syntactic approaches to the language change, its acquisition, and relevant parametric change, and summarize what problems have been solved in the course. In Sect. 3, we will show from investigation of corpora how the frequency and distribution of Nominative subject adnominal clauses (NSC) and GSCs have changed from the old Japanese and to the present. In Sect. 4, we will argue that a change in the frequency and distribution of Nominative and Genitive subjects is not semantic but syntactic in nature, and make a brief review of previous analyses of the GSCs and/or the NGC in Japanese, all of which are synchronic analyses, except for Harada (1971, 1976). In Sect. 5, a new analysis of the diachronic change in the syntactic environments of the Genitive Case assignment is presented. More specifically, I propose that the GSC at the complement of the functional category D as a Genitive Case licensor has been shrinking from CP to TP to vP to VP/AP in the last 100 years or so, while the NSC has been CP throughout the history. In Sect. 6, we will argue how successfully the four different dialects can be learned by a child in different time periods and how language can change, where the Subset Principle and/or a kind of economy principle play a role. In Sect. 7, we will discuss how successfully generative syntax can explain any gradual language change, and push away critics against generative syntax from historical linguists. Section 8 is a conclusion.

2. Microparametric Syntax: How to Apply It to Diachronic Change

Genitive Case is usually used for marking the "subject" of a NP, where the notion of "subject" is loosely defined, so as to cover not only the so-called "subject" of a derived nominal but also any element having some relation R to the head of a NP. Relatedly, the Genitive Case in Japanese is realized with the Genitive Case morphology *no*, whether it is a NP, a PP or an adverb (or an adverbial clause) that modifies a noun, unlike in English, where only a NP can be marked for the Genitive Case and PP and adverbial clauses have the same structural relation as they are in VP, as far as Case marking is concerned:

(2) a. Taro-no/*ga hon <NP>
Taro-Gen/Nom book
'Taro's book'

b. Taro-**kara-no** tegami <PP>[1]
Taro-from-Gen letter
'a letter from Taro'

c. Taro-ga kita-**ato-no** sawagi <adverbial clause>
Taro-Nom came-after-Gen fuss
'the fuss after Taro came'

Since the advent of generative syntax, it has tacitly been assumed that Nominative Case for the clausal subject is

[1]An anonymous review wonders if this instance of *no* is not a Genitive Case but a copula, which is sometimes spelled out as *no* in Japanese. Here too, one can say that *tegami-wa Taro-kara da* 'The letter is from Taro.' However, we can reject this possibility for two reasons: first, the fact that a PP in Japanese can be marked by *no* is part of a broader generalization in Japanese that any vategory, whether a NP or a non-NP (such as AdvP, CP), can be marked by no, as in (i):

(i) a. kanari-no simpo
considerably-Gen progress
'a considerable progress'
(cf. *Simpo-wa kanari da.)

b. Shachoo-ga kita-to-no uwasa
president-Nom came-Comp-Gen rumor
'the rumor that the president came'
(cf. *Uwasa-wa shachoo-ga kita to da.)

Second, some PPs in Japanese, including (2b), can also be marked by Nominative Case, as in (ii):

(ii) Tokyo-kara-ga yasui.
Tokyo-from-Nom inexpensive
'(a ticket) from Tokyo is inexpensinve.'

For these two reasons, we suppose that they have some nominal feature compatible with Genitive Case marking.

unmarked, with the Genitive Case marked, because the so-called Nominative/Genitive Conversion (NGC) in Japanese as in (1) can only take place in an adnominal clause and elsewhere only a Nominative Case is the only Case available for a subject (except for a few stative predicates for which a dative subject is available). But a corpus study shows that it was not until the mid of the 20th century that the subject of a finite adnominal clause came to be more frequently marked for the Nominative.

In fact, the historical linguistics of Japanese has shown a radically different picture about the Case system of the classical Japanese, such that before the 11th century, the Case morphology of the matrix clause was always zero, and even in the embedded clause a subject can be marked for zero, or for a Genitive clause, which was realized either as *no* or *ga* (Frellesvig (2010: 127–131));[2] it was not until the early 13th century that the Case morphology *ga* was reanalyzed as Nominative Case morphology and spread to the matrix clause to be assigned to the matrix subject as well as an embedded subject (Nomura (1993a, b); Kinsui, *et al.* (2011: 34–36)):

(3) a. matrix clause: Nominative Case = zero:
Kagiyahime, "Mire-ba, seken-***φ*** kokorobosoku, aware-ni
Kaguyahime, look-if real.world-**Nom** feel.anxious, nostalgic
Haberu. Najou mono-o-ka nageki-haberu-beki" to iu.
be(Hon.) for.what thing-Acc-Q meditate-be-should(AND) Comp say
'If I look at (the moon), the real world feels anxious and nostalgic.
Otherwise, for what should I have to be meditating?,' says Kaguyahime.
(*Taketori Monogatari*; compiled on 900 A.D.)

b. embedded nominalized clause: Genitive Case = *no*:
Haru-no hajime-yori, Kaguyahime, tuki-**no** omosirou
spring-Gen beginning-from Kaguyahime, moon-**Gen** elegantly
ide-taru-o mi-te, tune-yorimo monoomoi-taru sama nari.
come.out-ADN-Acc look-and than.usual meditate-Perf. appearance be
'From the beginning of a spring, Kaguyahime seemed to be more deeply meditating than usual, looking at the moon elegantly coming out.'
(*Taketori Monogatari*; compiled on 900 A.D.)

c. embedded nominalized clause: Genitive Case = *ga*:
"Ima-wa kore-yori kaeri-ne" to sane-**ga** ii-ker-u ori-ni
now-Top here-from leave-Imp Comp sane-**Gen** say-Perf-AND time-at
yomi-keru.
Compose-Perf
'(This short poem was) composed when Sane said, "Now, you had better leave from here."' (*Kokin Wakashuu*, compiled on 906 A.D.)

d. matrix clause: Nominative Case = *ga*:
Yuki-wa kitazama-**ga** medetaki nari.
snow-Top northward-**Nom** good is
'As for snow, the northward (one) is good.'
(*Jikkinshou*, compiled on 1252 A.D.)

Even after the reanalysis of *ga* as the Nominative Case morphology in the 13th century, the subject of an adnominal clause has continued to be marked for the Genitive Case morphology *no*, at least as an option, and even in the later 19th century, the use of a Genitive Case morphology *no* on a subject was more frequent than that of a Nominative Case morphology *ga* in an adnominal clause.

Once we recognize the fact that Genitive subjects had been diachronically more general than Nominative ones for more than 1000 years in Japanese, it would be surprising to see that a Genitive subject clause (GSC) has been less and less frequently used even in an adnominal clause in Japanese in the last 100 years, and the Nominative Case has been more and more standard and sometimes exclusively used. This shift from Genitive to Nominative Case has been argued to be related to the diachronic decline of the special adnominal inflection of verbs and adjectives, which is called the "*rentai*-form" in traditional Japanese linguistics (Whitman (2009); Hiraiwa (2002, 2005)).

Once the grammatical change that took place on the subject of an adnominal clause is related to the decline of the special verbal inflection, it is reminiscent of a similar phenomenon in English: the drastic decline of morphological inflection between a verb and its grammatical subject and a subsequent disappearance of V-to-I raising that is known to have taken place gradually in the late 16th to early 17th century in English.

[2]In classical Japanese, even the Genitive Case assigned to the possessor of a noun (phrase) had the morphology of either *ga* or *no*, which has been unified to *no* in the modern Japanese. However, there remain some relics of the archaic uses, such as *wa-ga-ya* 'I-Gen-house,' *wa-ga-kuni* 'we-Gen-country,' and a few others. Thus, the reanalysis of *ga* and *no* that took place in the 13th century seems to be summarized as the division of labor and morphological disambiguation of Nominative and Genitive Cases.

This diachronic change in English was originally pointed out as a typical case of diachronic syntactic change (Lightfoot (1991)). Soon after the introduction of the Principles and Parameters (P&P) Theory of generative syntax (Chomsky (1981)), the parametric change from the presence to the absence of V-to-I raising was assimilated to a synchronic difference in the presence or absence of V-to-I raising, for example, between French and English (Emonds (1985); Pollock (1989)) or between two types of Germanic languages (Vikner (1995)). Thus, the presence or absence of V-to-I raising was regarded as one of the outstanding parametric variations across languages, and it has been discussed in one way or another as a result of the different setting in the value of a parameter associated with the functional head T (and/or C) (Chomsky (1991)).

In the P&P Theory, any syntactic change or variation was argued to be explained in terms of the different setting of a macroparameter and it was assumed that the fewer the number of parameters for explaining the broad range of linguistic facts, the better such a theory is. Along these lines, there were proposed a number of macroparameters that were intended to explain the dynamic correlation between a broad range of syntactic phenomena: as far as V-to-I raising is concerned, it was argued that among the many Germanic and Romance languages, the availability of *pro*-drop (van Kemenade (1987)), the possibility of V-to-I raising (Emonds (1985), Vikner (1995)), the availability of a post-verbal subject (Kayne and Pollock (1978)), the presence/absence of a *Wh*-island effect (Rizzi (1982)), the presence/absence of the Comp-trace effect (Rizzi (1982)), and a few others were related to the 'richness of inflection.' Also, the presence of subject-verb agreement in English and its absence in Japanese was argued to be related to a number of phenomena including the presence/absence of raising to the Spec of TP, multiple subjects, scrambling, overt wh-movement, and multiple topicalization, among others (Fukui (1986); Kuroda (1988)). Given Occum's razer, such a far-reaching set of consequences of postulating a single macroparameter was exactly what a scientific theory of language would seek for, and therefore a similar parametric theory was proposed one after another in the 1980s.

In the course of the development of the P&P Theory of generative syntax (Chomsky (1981)), a general consensus was reached that the locus of parameters was limited to functional categories (Borer (1984); Travis (1984); Kayne (1984, 1994)). In the advent of the P&P theory, Chomsky's (1981) postulated Infl was the only functional category, but the number of functional categories was proliferated around after the proposal of Comp by Chomsky (1986) and D(eterminer) by Abney (1987). Even if there is only one parameter on a single functional head and if its value is binary, the postulation of, for example, 12 parameters on 12 functional categories the binary values of which could vary independently would lead to 2 to the power of $12 = 4096$ different languages, in principle. Hence, the postulation of UG coupled with a limited number of parameters was expected to solve in a neat way the tension between "descriptive adequacy," which is concerned with the extent to which we can describe the similarities and differences among languages, and "explanatory adequacy," which is concerned with how a child can learn his or her native language. If all the syntactic variations could be reduced to morphological properties of lexical items, a further simplification of UG could be expected.

For this reasons and others, Chomsky (1995) proposed a minimalist program of linguistic theory, in which the number of language-specific principles, assumptions, and/or filters is minimized, and optimally all of the syntactic properties could be derived from bare output conditions that reside in the two interfaces that connect human computational system of syntax with two language-external systems: the conceptual–intentional (C–I) system and the articulatory–perceptual (A–P) system. This paradigm shift has steered the main stream of generative syntax from syntax as the modular system of principles and parameters to syntax as part of biologically evolved system of linguistic computation. This shift has left most of the language variations and language changes unexplained, as word order variations or morphological variations were regarded as extraneous to the core computational system. Thus, the advent of the minimalist program seems to have triggered bifurcation of generative syntax into at least two substreams (underground): one which purses biolinguistics (Chomsky (2001, et seq.)) and the other which purses an explanation of a large number of cross-linguistic syntactic generalizations, either synchronic or diachronic, that were discovered in the last two decades, in terms of newly introduced notions such as microparameters (Kayne (2000, et seq.)) and the cartography (Rizzi (1997); Cinque (1999, 2006)), among many others.

After the (implicit) bifurcation of the P&P theory in the early 2000s, some generative syntacticians have continued to seek the nature of language variations and tried to pinpoint the functional categories that are related to the language variations (see Longobardi and Guardiano (2009); Longobardi (2017), Stowell and Massam (2017), among others). Others have tried to elucidate how a language can change diachronically (Lightfoot (2006); Lightfoot and Westergaard (2007)), how a child can learn his or her native language when a language change is in progress (Roberts (2007), Snyder (2011, 2017)), and whether a child or an adult is the innovator of a new language (Cournane (2017)). Among these, we are most concerned with the second issue: the relation between language acquisition and language change.

Now, we need to confirm the original issue of why we have to postulate UG as an innate system of language. It is because we can learn our native language in spite of the *poverty of stimulus* situation: even if language learning children are exposed to a sufficient set of input data, they cannot learn their native language just on the basis of such data, since none of the input data include properties of structural dependency such as the locality of movement, the parasitic gap construction, subjects, PRO, null operators, and binary branching of phrase structure, among others. As all these pieces of knowledge are unable to be learned from positive evidence, they are supposed to be included as part of the innate knowledge of language. This is why we need UG. Given that much of what we know about syntax is innately

given and that all we have to do to acquire a particular language is to fix the value of the limited number of parameters in one way or another, and learn how to pair the sound and meaning of each lexical item, it will be unsurprising if we can learn our native language in a few years after birth, essentially uniformly, without a large variation among individuals who live in a single speech community, despite any difference in their cognitive ability and/or individual speech errors.

At the same time, however, there is no doubt that if a speech community were always uniform, no language change would take place between one generation and the subsequent generation. This is called the Logical Problem of Language Change (Roberts 2015). Hence, one non-trivial question was left unexplained.

If a change in the value of a single parameter takes place in the process of language acquisition, we would expect that a single person did not use both V-to-I raising and *do*-support simultaneously, that the diachronic change takes place abruptly between two adjacent generations, so that parents and their children at a time had different values of a single parameter and that the children had to learn *do*-support without any input. Apparently contrary to this expectation, a famous writer Williams Shakespeare used both V-to-I raising and *do*-support in the same token of one or more of his work. (4) has three lines from Othello, which manifest the old system and the new system with the dummy verb do side-by-side; New-old in (4a), old-new in (4b), and new-old in (4c):

(4) a. Where **didst thou** see her? --- O unhappy girl! --- With the Moor, **say'st** thou?
b. I **like not** that. // What **dost thou** say?
c. Alas, what **does this gentleman** conceive? --- How **do you**, madam?
(Lightfoot and Westergaard (2007: 406))

Moreover, even if two adjacent generations had different grammars about whether they had V-to-I raising or *do*-support, they could have communicated with each other without any problem. Hence, such an explanation of language change in terms of parametric syntax has sometimes been criticized as a typical fault of the generative linguistics.[3]

It is well-known that whenever a language changes from one stage to another in a single language community by external factors such as language contact (for example, Norman Conquest, creolization and piginization under colonization, and so on), it takes place gradually rather than abruptly and there is a transient stage at which two uses, one an emerging use and the other a traditional one, co-exist for several decades, and some speakers in the speech community are more likely to use the older form, while others are more likely to favor the new one.

However, a generative syntactic view compatible with such a fact about actual language changes has been put forth by several linguists: microparametric syntax and micro-cue analysis. Microparametric syntax is a way to identify the nature of language universals and parameters which explain language variations (and changes) by comparing two or more languages or dialects of which the speakers are either geographically or historically closely related and between which there are only a few syntactic differences. Thus, it is based on the view that the hypothesis testing task generated by Italian and French, for example, may be more manageable than the one generated by French-English comparison (see Kayne (2000: 4), Baker (2017), and Rizzi (2017), among others).

On the other hand, Lightfoot and Westergaard (2007) have put forth a micro-cue analysis of language change and language acquisition, stating as follows (See also Snyder (2017) for a similar view):[4]

(5) If parameters and cues are of a smaller scale than has previously been thought, then one will not say, for example, that a V2 language changes into a non-V2 language from one generation to the next, [. . .] On the other hand, it is also not necessary to argue that change is always gradual, spanning several hundred years. On our view, change may affect one (micro-)cue at a time, a series of smaller scale bumps, giving the impression that there is gradual change over centuries. (Lightfoot and Westergaard (2007: 411))

Given the microparametric syntax of language variation and/or a micro-cue analysis of language acquisition/change, it may be a priori possible to assume that many, if not all, of what appears to be a gradual language change which we can observe everywhere in the world will be subsumed under the scope of the generative syntax rather than being put aside as exceptions or facts that have to be left unexplained.

The microparametric syntax and the micro-cue analysis differ in one crucial respect. The microparametric syntax supposes that a micro-syntactic variation between closely related languages (or dialects) may help understand the

[3]In fact, Bybee (2015: 241–247) argues against the generative syntactic view of language change, just because language change is gradual and the generative syntactic view cannot explain this simple fact. However, such a criticism, though it could apply to an earlier view of language change under a macroparametric syntax, is no longer applicable to a microparametric view of syntax (Kayne (2001); Baker (2017); Cournane (2017) Mathieu and Truswell (2017)) or a micro-cue approach to language acquisition and language change (Lightfoot and Westergaard (2007)), as we will see immediately.

[4]It is assumed that microcues are an innately given set of small pieces of astract syntactic structures (or "treelets"; Fodor (1999)) resulting from parsing the input. The micro-cues analysis of language acquisition is proposed to explain why chlildren are conservative learners in that they do very little overgeneralization or errors of commission. See also Lightfoot and Westergaar (2007), Westergaard (2014), Lightfoot (2017) and Westergaard (2014) for a more detailed discussion.

nature of parameters, which means that it presupposes a (large) number of parameters of which the underspecified values can be fixed by a language learning child. It then follows that "the number of independent binary-valued syntactic parameters needed to allow for 5 billion syntactically distinct grammar is only 33 (2 raised to the 33rd power is 8.5 billion). . . . it seems likely that the number will turn out to be greater than 33" (kayne (2000: 8)). However, even if there are 50 parameters, the number does not seem to be so larged, compared with the number of possible languages. On the other hand, under a micro-cue analysis, (value-unspecified) parameters are not postulated at all but all the treelets that are UG-compatible are innately given, from which language-learning children choose ones that are compatible with the treelets compatible with the input data of their language one by one, on exposure to positive evidence. In this view, at least twice as many treelets as the number of parameters are necessary for explaining the same set of syntactic variations, since, for example, in case a word-order-unspecified VP and a single (binary-valued) parameter are necessary under the parametric syntax, the micro-cue analysis requires two treelets as options from which children can choose: the head-initial VP and the head-final VP.

Although the microparametric syntax and the micro-cue analysis are originally hypotheses about language variations and language change/acquisition, respectively, the former can be extensively applied to language change, and any such a theory that can cover the gradual diachronic change. In any case, it is true that when a language is in the course of gradual change, children are quite adaptive to it and they can acquire a language which is almost identical to but is slightly different from the adult's grammar. Thus, if a micro-cue analysis can provide an explanation to the gradual shift in English from a V-to-I raising language to a language with *do*-support and no V-to-I raising is explained under the micro-cue analysis, so can a microparametric syntax which is extensively applied to language change, and adopting either suffices for us to go into the discussion of the NGC in Japanese in what follows.

More specifically, we will show that the GSC was originally the unmarked option for native speakers of the classical Japanese. But at a later stage, there appeared a generation for whom the NGC is a free alternation, which is comparable to Shakespeare's mixed use of the V-to-I raising and *do*-support, and subsequently, younger generations are likely to accept the GSC only in more and more restricted environments, just as the modern English speakers do not allow V-to-I raising except for auxiliary verbs and quite a limited number of light verbs including *be, have*, and *need*. The more and more strict restriction on the NGC for those who are alive now can be compared to the gradual loss of V-to-I raising in the ME and ENE periods in that both are related to the loss of morphological inflection on verbs and of other micro-cues for the necessity of a larger syntactic structure. Hence, children are naturally forced to adopt a smaller syntactic structure for the Genitive subject clauses, either because they are conservative learners (Snyder (2017)) or because they are subject to an economy principle as their third factor (Westergaard (2014)).

Lightfoot and Westergaard (2007) observe that children in the course of language acquisition are sensitive to various syntactic cues (such as word order, clause types, whether a *wh*-word is monosyllable or not, and so on) and do not fail to learn a subtle syntactic difference correctly (e.g., the presence or absence of Subject-Aux Inversion or subject raising in a particular construction), making only a much smaller number of overgeneralization or errors of commission than would be expected under any macroparameter analysis to language change and/or variation. As Westergaard (2014: 32–33) argues, it is not the case that children do not make any error in their spontaneous production, and yet, such an error is limited to a particular pattern: some elements tend to occur in a lower position than what the target language requires. In order to explain this pattern of errors, she claims that "children are *economical* in their production and will not produce an element, perform a movement operation or build syntactic structure, unless there is clear evidence for it in their input. This economy principle of children's production will explain why language change tends to be simplification.

Although the microparametric syntax and the micro-cue analysis are slightly different from each other in their target of research objects (variations among the adult grammars or children's language acquisition) and in terms of whether they assume parameters or micro-cues, they seems to share a common view that language learners are sensitive to a micro-level difference, if any, between closely related dialects or idiolects of a single language, whether it is between two or more dialects compared synchronically or two or more stages of a language compared diachronically.

For these reasons, in this article, I will put forth a microparametric and/or micro-cue-based analysis of the diachronic change in the NGC. More specifically, we will argue that in the GSC in Japanese, the younger age groups that are alive at present have been likely to accept the GSC in more and more limited syntactic environments than the older age groups, because the value of a certain microparameter (or alternatively, the particular choice of micro-cues) related to the syntax of the GSC has been gradually changing and as a result, the syntactic size of the NGC for younger generations are becoming smaller and smaller in the last 100 years or so.

As for the parametric syntax, one more qualification is in order here. It remains controversial whether a single parameter must always have a binary value. Actually, most of the parameters could be described as having a binary value. However, there is no a priori reason why the binarity must be an exceptionless principle. In fact, Manzini and Wexler (1987) propose that as far as the Subset Principle is satisfied, a five-valued parameter could also be a possible way to explain language variations. Suppose that a language learner, or a child, is born with UG and a set of parameters of which the values are set on the "default" value (cf. also Hyams 1988), which corresponds to the value according to which the smallest number of sentences could be generated by the grammar:

(6) The essence of the learning component is the Subset Principle, which orders parameter values according to the subset relations of the languages that the values generate. To be more precise, given two languages, one of which is a subset of the other, if both are compatible with the input data, the Subset Principle will state that the learning function must pick the smaller one. (Manzini and Wexler (1987: 414))

Given the Subset Principle, children initially select the smallest language compatible with the input, i.e., they do not select a language which would go beyond the available input, and as they find additional positive evidence, they progressively move toward larger grammars. Hence, a child as a language-learner would not face a problem in fixing the value of the relevant parameter that is different from its default value. The Subset Principle will also have the effect of children reacting a subtle language change, in such a way that any decline of a certain complex construction below the level of a threshold in the input available for them will prevent them from adopting a larger grammar and let them adopt a smaller grammar; in this sense, it is in affinity with Westergaard's (2014) view of the economy principle of children's production.

Now, given the microparametric syntax and/or the micro-cue analysis, we are ready to discuss any diachronic change of a single language at as much level of depth and fine-grainedness as a non-generative syntax. Anyway, it is instrumental to emphasize three points here: first, a discussion of the NGC in Japanese is advantageous in that looking at whatever language change is now ongoing is quite similar in methodology to comparing two or more synchronically different dialects. Second, as the NGC as far as it is allowed is a free variation between Nominative and Genitive Cases, it is also compatible with Westergaard's (2014) assumption that grammar competition takes place only when there is free variation or optionality, in which case "children seem to be good at statistical learning, producing the two options with similar frequencies as in the adult data from early on." Third, and most importantly, in uncovering the nature of parameters, a discussion of whatever language change is now ongoing will be far better than that of whatever language change that took place and ended hundreds of years ago.

With these backgrounds, let us go into the details of how the Case system of Japanese has changed in the last 1000 years and how the change is now in progress.

3. Diachronic Change in Case System

3.1 What the historical Japanese corpus *Chunagon* shows

National Institute for Japanese Language and Linguistics (NINJAL) has released a number of corpora on the Japanese language, among which is the Corpus of Historical Japanese (CHJ). As of July 2018, when I am writing this article, CHJ has compiled more than 16 million words from 40 texts ranging from *Man'yoshu* (compiled on 759 A.D.) to the monthly or bimonthly popular magazine titled *Taiyo* (issued between the years 1895 and 1925). The approximately 1300 years of the Japanese history is divided in CHJ into 6 periods in terms of the written text(s) that have been chosen: Nara Era (based on 1 work compiled in 759), Heian Era (based on 16 works written between 900 to 1100), Kamakura Era (based on 10 works written in 1100–1336), Muromachi Era (based on 3 works written between 1592–1642), Edo Era (based on 3 works written between 1757–1836), Meiji and Taisho Eras (based on 7 works written between 1874–1925).[5]

In order to know how the distribution and frequency of the Nominative and Genitive subjects has changed in the last 1100 years from the Heian Era on,[6] first, I searched in the CHJ the word sequences of a noun immediately followed by a Nominative or Genitive Case-marker, which is immediately followed by a verb or an adverb. There are several reasons why we chose these three word sequences in comparing the frequency: (i) both the Nominative and Genitive Case-markers were traditionally used in order to mark the subject of both a clause and a noun phrase, and we need to exclude a Nominative or Genitive subject placed in a pure NP headed by N; (ii) once a NP occurred immediately before a verb or an adverb, there is no doubt that a Nominative or Genitive NP that precedes a verb or an adjective is a subject of a clause; (iii) it is known that the Nominative Case-marker *ga* traditionally appeared only in a subordinate clause and was spread into the matrix clause in the late Kamakura Era (see (3)), though it remains unclear how it spread; and (iv) as both the Nominative and Genitive Case-markers were anti-root phenomena and the latter occurred only in a subordinate adnominal clause or a clause of which the head is nominalized by the *rentai*-form (i.e., what is referred to as the *juntai setu* 'the pseudo-nominal clause' in the traditional Japanese linguistics), the comparison between the Nominative and Genitive NPs immediately followed by a verb or an adverb will make it clear how the subordinate

[5]It is somewhat different from the usually accepted division of the Japanese history into 8 blocks called Nara Era (710–794), Heian Era (794–1185), Kamakura Era (1185–1336), Muromachi Era (1326–1573), Azuchi Momoyama Era (1573–1603), Edo Era (1603–1868), Meiji Era (1868–1912), and Taisho Era (1912–1926). This is because the alleged year when a work was estalished does not always coincide with the era in which the language used in the cited text was actually spoken. Thus, the *Toraakira Kyogenon*, which is said to be estalished in 1642, is classifed as a work in the Muromachi Era (1326–1573) because the spoken language used in the senario of this classical Japanese entertainment is judged as one used in the Muromachi Era rather than the Edo era. I thank Hirofumi Aoki for bringing this information to me.

[6]The Nara Era was excluded from this search, because there is only one work (*Man'yoshu*) in this period and the number of words compiled (99,194 words) is far smaller than the other 5 periods.

clauses and the adnominal or nominalized clauses were distributed between the classical Japanese and the pre-modern Japanese.

The result of the corpus search is summarized in the following Table 1 and Fig. 1:

Table 1. Change in the frequency of clauses with a Nominative or Genitive subject.

the name of each era	Heian Era	Kamakura Era	Muromachi Era	Edo Era	Meiji Era	Taisho Era
the years at which the earliest and the latest works in each era were estalished	900~1100	1100~1336	1592~1642	1757~1836	1874~1909	1917~1925
total compiled works	16	10	3	3	5	2
total compiled words	1013024	972674	415573	218248	9056407	4910662
NP + *ga* + Verb	78	272	1854	940	15728	24061
NP + ga + Adverb + Verb	1	6	39	38	693	936
tokens of Nominative sujects	79	278	1893	978	16421	24997
Nominative sujects PER MIL	77.98433206	285.8100453	4555.156374	4481.140721	1813.191479	5090.35238
NP + *no* + Verb	3134	3366	768	450	14079	7355
NP + *no* + Adverb + Verb	176	77	16	12	750	220
tokens of Genitive sujects	3310	3443	784	462	14829	7575
Genitive sujects PER MIL	3267.444799	3539.726568	1886.551821	2116.857886	1637.404326	1542.56188

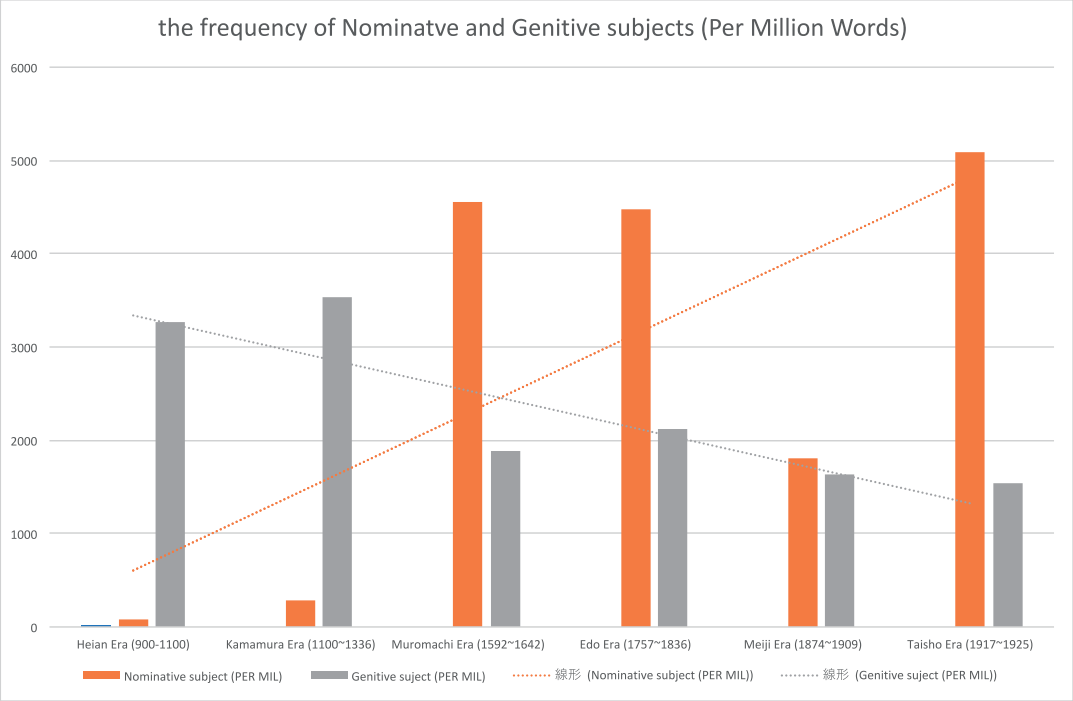


Fig. 1. Change in the frequency of clauses with a Nominative or Genitive subject.

In accordance with what the traditional Japanese linguistics observes, Table 1 and Fig. 1 show that of all the clauses with a subject, morphologically Nominative subject clauses were originally quite infrequent and limited to the embedded clauses (i.e., Genitive subjects were about 40 times as frequent as Nominative subjects in the Heian Era), but as soon as it spread over to the matrix clause between the Kamakura Era and the Muromachi Era, its frequency increased sharply and overtook the frequency of the Genitive subject Clauses (i.e., Nominative subjects became more than twice as frequent as Genitive subjects in the Muromachi Era and the token frequency of Genitive subjects decreased about 50% between the Kamakura Era and the Muromachi Era).

What we saw above is a change in the frequency of Nominative and Genitive Case-markers in *all the clauses*, including both the embedded clauses (of all types) and the matrix clause. However, if we limit the domain of a search into adnominal subordinate clauses, another picture emerges. A search in the *Chunagon* of the two word sequences "Noun–{*ga*/*no*}–Verb–Noun" and "Noun–{*ga*/*no*}–Adverb–Verb–Noun" shows that the Genitive subject was still far more frequent than the Nominative subject clauses in an *adnominal clause*, throughout the 1000 years, and even as recently as the Taisho Era. The Tables and Graph 2 show this point:

Table 2. Change in the frequency between the Nominative & Genitive subject in NP.

the name of each era	Heian Era	Kamakura Era	Muromachi Era	Edo Era	Meiji Era	Taisho Era
the years at which the earliest and the latest works in each era were estalished	900~1100	1100~1336	1592~1642	1757~1836	1874~1909	1917~1925
total compiled works	16	10	3	3	5	2
total compiled words	1013024	972674	415573	218248	9056407	4910662
NP + *ga* + Verb + Noun	19	38	142	52	718	1189
NP + ga + Adverb + Verb + Noun	0	0	1	1	54	55
tokens of Nominative sujects in NP	19	38	143	53	772	1244
Nominative sujects PER MIL	18.75572543	39.06756015	344.1032021	242.8430043	85.24351876	253.3263336
NP + *no* + Verb + Noun	386	412	154	127	4192	2770
NP + *no* + Adverb + Verb + Noun	12	6	2	3	157	53
tokens of Genitive sujects in NP	398	418	156	130	4349	2823
Genitive sujects PER MIL	392.8830906	429.7431616	375.3853114	595.652652	480.212517	574.8715754

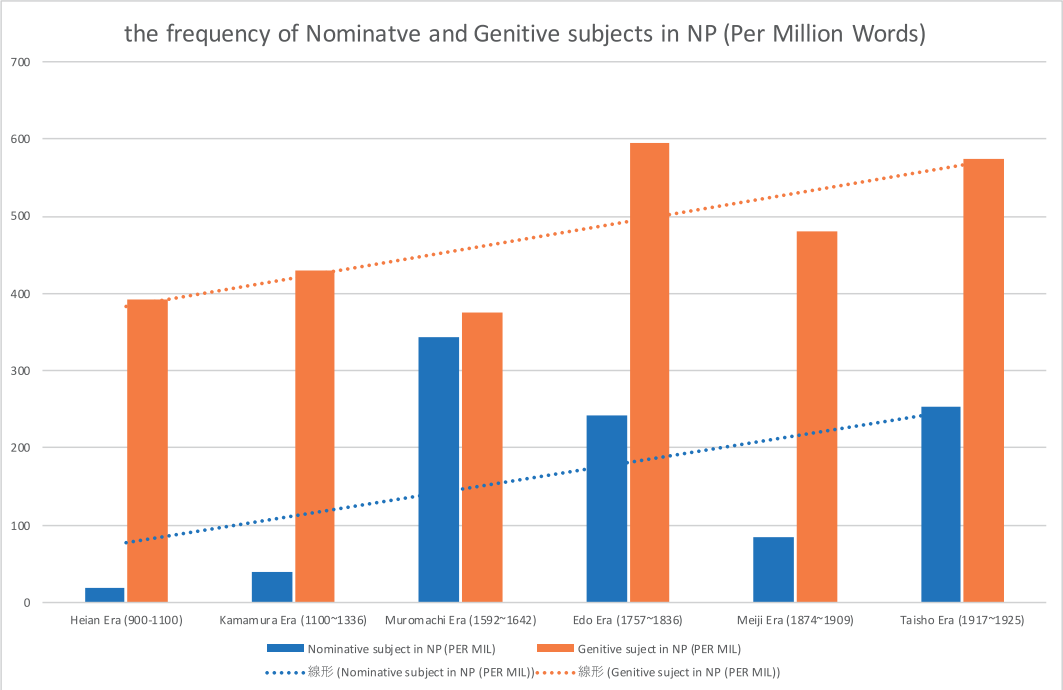


Fig. 2. Change in the frequency between the Nominative & Genitive subject in NP.

Unlike Table 1 and Fig. 1, Table 2 and Fig. 2 show that both the Nominative and Genitive subject in an NP have increased their frequency in the last 1000 years, though the GSCs were about four to five times as frequent as the NSCs throughout the years, on average. Also, it shows that, compared with the *gradual* increase in the frequency of the GSCs, the frequency of the NSCs manifested a *sharp* increase in the Muromachi Era, after which they once decreased their frequency, but again turned to the increase in the Taisho Era.

It may sound mysterious why the Genitive subject in an adnominal clause kept increasing during the relevant 1000 years, despite the fact that the frequency of all the Genitive subjects was gradually decreasing in the same period. What created the apparent conflict was the fact that up to as late as the Taisho Era, the Genitive subject was licensed not only in an adnominal clause but also in a nominalized clause of which the verb or adjective had an adnominal inflection (the so-called 'juntai-setu'), which lacked an overt head noun to which a GSC adds. A typical example of this, shown in (3b), is repeated here as (7):

(7) embedded nominalized clause: Genitive Case = *no*:
Haru-no hajime-yori, Kaguyahime, tuki-**no** omosirou
spring-Gen beginning-from Kaguyahime, moon-**Gen** elegantly
ide-taru-o mi-te, tune-yorimo monoomoi-taru sama nari.
come.out-ADN-Acc look-and than.usual meditate-Perf. appearance be

When a Genitive subject occurs in such a clause, the formal licenser of the Genitive Case inside of a GSC was not a (formal) noun but the adnominal inflection on the Complementizer head of the GSC (cf. Hiraiwa (2002, 2005)). In fact, Hiraiwa (2002) argues that the NGC is a free alternation in a CP with an adnominal inflection and that the two Case forms are both formally licensed by the C-T-V amalgam with the special morphology on C. Pace Hiraiwa (2002), I will argue in the next section that his claim was correctly applicable to the data between the classical Japanese and the Taisyo Era, but not to the modern Japanese. However, it is undeniable that a Genitive subject in the classical Japanese could be licensed by an adnominal inflection on C (cf. also Kornfilt and Whitman (2008); Nambu (2007, 2014)).

Anyway, my point to be emphasized here is that the decline of the gradual adnominal inflection was concurrent with the gradual decrease in the frequency of the GSCs in total, despite its apparent increase in an adnominal clause. This point can be confirmed if we count in *Chunagon* the frequency of the word sequences of "Noun + {*ga*/*no*} + Verb + Case-particle" and "Noun + {*ga*/*no*} + Adverb + Verb + Case-particle." In either case, the frequency of the Nominative subjects in the relevant environment increased sharply in the last 800 years, while the frequency of the Genitive subjects decreased gradually in the same period. This was because the classical form of adnominal inflection on C was gradually replaced by the adnominal clause, i.e., a relative clause that modifies a noun or a clause in apposition to a (formal) noun (headed by *koto* 'fact' or *no* 'one'). Therefore, a microparametric change that arguably occurred somewhere between the Edo Era and the Taisho Era was the change in the licenser of a Genitive subject from the adnominal inflection on the C in the adnominal clause to some other functional head (probably, the D that select the adnominal clause, as I will argue below when we review Miyagawa (1993, 2011) and Maki and Uchibori (2008)).[7]

Table 3. Change in the frequency of the word sequences of "Noun + {*ga*/*no*} + (Adverb +) Verb + Case-particle."

the name of each era	Heian Era	Kamakura Era	Muromachi Era	Edo Era	Meiji Era	Taisho Era
the years at which the earliest and the latest works in each era were	900~1100	1100~1336	1592~1642	1757~1836	1874~1909	1917~1925
total compiled works	16	10	3	3	5	2
total compiled words	1013024	972674	415573	218248	9056407	4910662
NP + *ga* + Verb + Case	1	9	82	37	610	872
NP + ga + Adverb + Verb + Case	0	0	2	3	12	26
tokens of Nominative sujects in pseudo-nominal CP	1	9	84	40	622	898
Nominative sujects PER MIL	0.987143444	9.252843193	202.1305523	183.2777391	68.6806589	182.8674016
NP + *no* + Verb + Noun	173	225	51	20	1134	282
NP + *no* + Adverb + Verb + Noun	12	1	1	0	46	2
tokens of Genitive sujects in pseudo-nominal CP	185	226	52	20	1180	284
Genitive sujects PER MIL	182.6215371	232.3491735	125.1284371	91.63886954	130.2944976	57.83334304

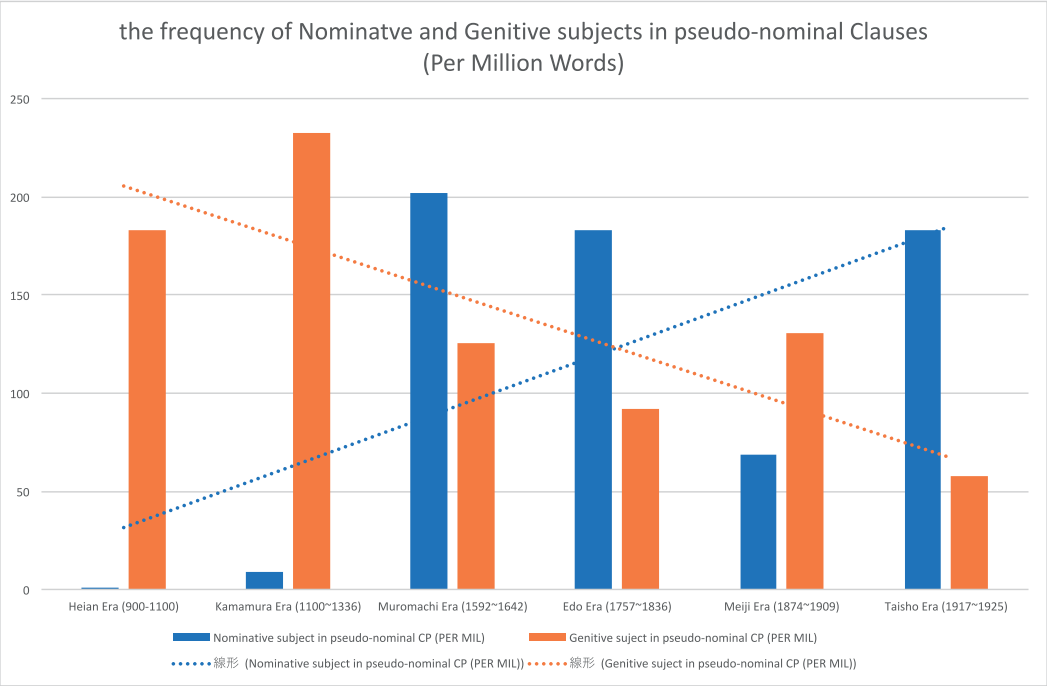


Fig. 3. Change in the frequency of the word sequences of "Noun + {*ga*/*no*} + (Adverb +) Verb + Case-particle."

Table 4. The frequency of V+*no*+*wa*/V+*no*+*ga*/V+*no*+*o*/V+*no*+*ni*.

the name of each era	Heian Era	Kamakura Era	Muromachi Era	Edo Era	Meiji Era	Taisho Era
the years at which the earliest and the latest works in each era were estalished	900~1100	1100~1336	1592~1642	1757~1836	1874~1909	1917~1925
total compiled works	16	10	3	3	5	2
total compiled words	1013024	972674	415573	218248	9056407	4910662
V + *no* + *ga*	0	0	0	17	785	1161
V + *no* + *o*	0	0	0	8	503	848
V + *no* + *ni*	0	0	0	9	306	556
V + *no* + *wa*	0	0	0	20	1752	2368
frequency (V+no+ga)	0	0	0	77.89303911	86.67896661	236.4243355
frequency (V+no+o)	0	0	0	36.65554782	55.54079007	172.685475
frequency (V+no+ni)	0	0	0	41.23749129	33.78823412	113.2230237
frequency (V+no+wa)	0	0	0	91.63886954	193.4542032	482.2160434

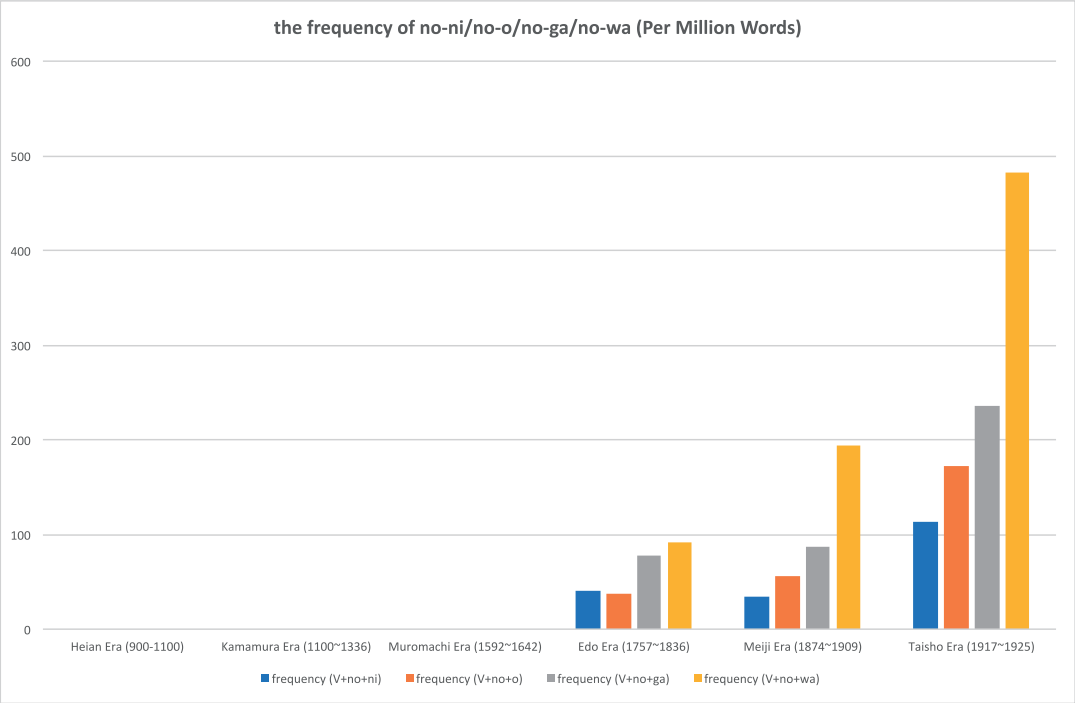


Fig. 4. The frequency of V+*no*+*wa*/V+*no*+*ga*/V+*no*+*o*/V+*no*+*ni*.

The Table 4 and Fig. 4 show that it was not until the Edo period that the overt complementizer *no* emerged and came to a standard use thereafter.

Hence, as far as the Genitive subject licensing is concerned, there was arguably a two-step microparametric change: first, the role played once by the adnominal inflection on C was replaced by the nominal complementizer *no* in the Edo period, and second, the nominal complementizer *no* partially but not completely took over the ability to license a Genitive Case, and hence the diachronic declination of the adnominal inflection and increase of the nominal complementizer from the Edo Era on ked to the decrease in the frequency of Genitive subjects, as shown in Fig. 2.

We will not go into any more details about the mechanism of Genitive subject licensing before the Meiji Era, except in Sects. 5.1. and 5.2. Whatever may be uncovered in future about the historical change that happened between the Heian Era and the Meiji Era, it will be of little relevance to what we are going to show in the next subsection, which is a dynamic decline in the frequency of the GSC that has been occurring in the last 100 years or so.

3.2 Harada's (1971, 1976) study

Harada (1971, 1976) is the pioneering work which analyzed the diachronic change in the distributional variations of

[7]For each era, the sum of the figures in Tables 2 and 3 does not corresponds to that of the figure in Table 1, because there are many other constructions in which a Nominative and Genitive subjects could occur.

the NGC syntactically. More specifically, he found two different dialects of Japanese, one of which allows the Genitive subject almost in every type of adnominal clauses including (8) or (9), and the other of which does not allow either, and identified most speakers in their twenties at the time as having the latter dialect.

(8) titioya-ga/(?*)no dai-ongakka de-atta buturigakusya
father-Non/Gen great musician was physicist
'a physicist whose father was a great musician'

(9) me-ga/(?*)no nakanaka de-nai sakura-no-ki
sprout-Nom/Gen be-slow-to come.out-not cherry-tree
'a cherry tree which is slow to sprout'

In (8), the adnominal clause is a copula sentence in which not only the subject but also the predicate is a noun phrase. We will refer to this type of sentence as the "nominal copula sentence." In (9), the subject and the predicate are intervened by a VP-adverb *nakanaka* 'be slow to.' We will refer to this as the "non-adjacency environment." Harada identified the younger native speakers of Japanese as less likely to accept a Genitive subject in the "nominal copula sentence" and under the "non-adjacency environment," though there was no such restriction even for the younger people, when the subject is in the Nominative.

Harada (1971) concluded that "Dialect A is on the edge of losing its status as the majority dialect, and the newcomer, Dialect B, is spreading among the speakers of the Tokyo dialect" (Harada (1971: 35)), and this conclusion was also endorsed by his own psycholinguistic experiment published in his 1976 paper.

In the course of constructing a syntactic theory that can explain the existence of the two dialects and gradual transition from one dialect to the other, Harada claims that a diachronic grammatical change can take place between the parent generation and the child one, for the reason as stated in (10) (underlines are mine):

(10) It seems that the cause of such a simplification lies in the fact that a child acquires his native language through "constructing the simplest (optimal) grammar capable of generating the set of utterances, of which the utterances heard by the child are a representative sample. Notice that the set of data available for the child is inevitably restricted in size and often degenerate in quality. Since the child constructs the optimal grammar that is consistent only with the original data, the grammar he constructs needs not be identical to the grammar that adults have constructed. (Harada (1971: 36))

Note that Harada's view, although it was put forth almost 50 years ago, is along the same lines as the micro-cue analysis tries to pursue in that a minor language change could take place between two adjacent generations.

The NGC itself has been a hot issue in the framework of generative syntax and his papers have often been cited in such works, especially after the advent of the minimalist program of linguistics theory. Nevertheless, both his discovery of important facts about language change and his idea about how grammar can change, as cited above, have been almost ignored for the subsequent 40 years or so.

Harada (1971, 1976) has been a very important work on the ongoing language change in the NGC, which is seen from both the literary works written in the early 1900s and the acceptability judgment of various Genitive subject sentences by native speakers of different age groups. However, his data are insufficient in judging whether the language change is still in progress as of 2018, when I am writing this article, since his two articles were written more than 45 years ago.

3.3 Nambu's (2014) corpus study

Satoshi Nambu, a Japanese psycholinguist, presented a corpus-based study of the diachronic change in the use of the Genitive subject in his 2007 article, his 2014 Ph.D., and some other articles. Nambu investigated a Hansard Corpus, which he referred to as "the Minutes of Japanese Diet (MJD)," which has compiled official speeches by the members of the Japanese Diet and showed that among the speakers, the ratio of the occurrences of Genitive subjects in adnominal clauses to all the adnominal clauses with a subject has been decreasing in the last 100 years.[8] He argued that this observation is compatible with Harada's observation that there are idiolectal variations in the acceptability of the NGC that can be traced back to intergenerational variations.[9] Figure 2 shows the rate of *NO* to all the adnominal clauses with a subject among the speech occurrences by the speakers who were born between the year 1870 and the year 1970 in the Tokyo metropolitan areas and raised there. In this figure, each point represents each speaker, which contains 100 tokens of the variants. Although there are considerable idiolectal variations among speakers, the gradual decline of the overall trend is fairly clear, with speakers gradually switching from the Genitive *NO* to the Nominative *GA*:

[8]For the Japanese Hansard corpus, see: *http://kokkai.ndl.go.jp*

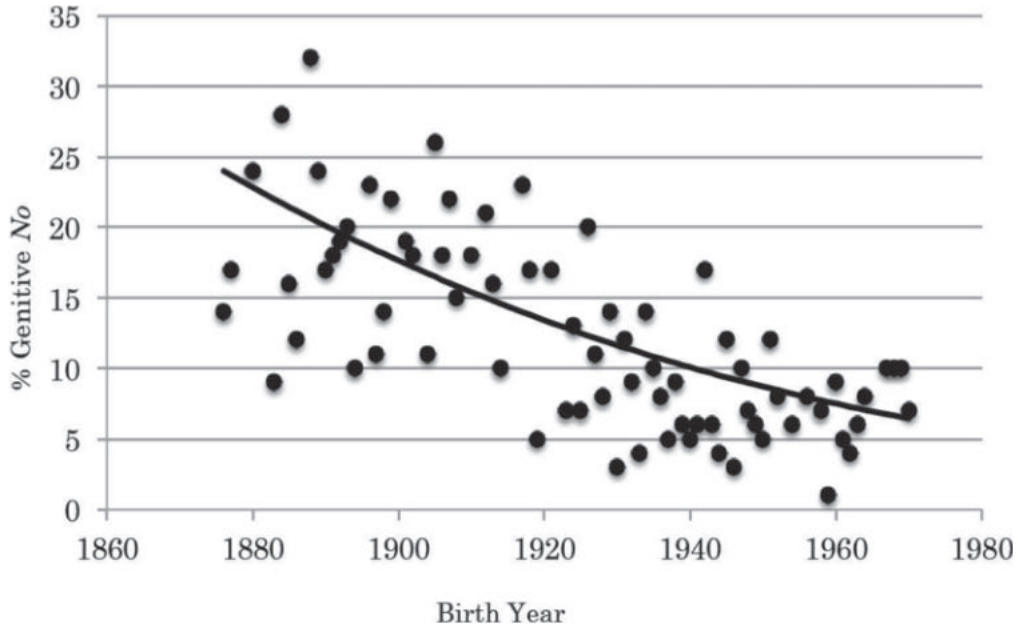


Fig. 5. Scattered plot of the rate of no in the MJD data; cited from Nambu (2014).

Nambu (2014) also makes a corpus-based study showing what kinds of adnominal predicates are more likely to co-occur with a Genitive subject than others, illuminating the facts as summarized in (11) and (12):

(11) a. A noun phrase headed by some formal noun is more likely to co-occur with a Genitive subject than others.
b. A noun phrase the subordinate clause of which is headed by an overt complementizer is unlikely to co-occur with a Genitive subject.
c. There is a difference in the frequency of a Genitive subject occurrence between adjectival predicates, verbal predicates, and copula sentences.
(cf. Kim (2009), Miyagawa (2011))

(12)

	(GA) Nom	(NO) Gen
a. adjective	72.2% (575/796)	27.8% (221/796)
b. adjectival verb	88.2% (127/144)	11.8% (17/144)
c. existential verb	87.6% (1,107/1,264)	12.4% (157/1,264)
d. other verbs	89.4% (4,549/5,090)	10.6% (541/5,090)
e. copula sentence	99.2% (249/251)	0.8% (2/251)

However, Nambu (2007, 2014) fails to investigate whether there was a diachronic change in the frequency of the Genitive subject coupled with each different type of adnominal clauses among those who were born between 1870 to 1970.

Moreover, he made a statistical analysis of what he obtained from the Hansard Corpus and another corpus, 'the Corpus of Spontaneous Japanese' (CSJ) (cf. Maekawa (2003)), and was lead to the conclusion that "there is a discrepancy between the results from the MJD and CSJ data with respect to ongoing change; the CSJ data do not show any change in NGA, in contrast to the MJD data, which show a change in progress."[10]

[9]Harada uses the term 'idiolectal variations' here, as well as he refers to two idiolects as Dialect A and Dialect B. Here is a confusion in terminology. However, we follow his paper in referring to the specific dialects as "Dialect A, B, . . . ," while we continue to use 'idiolectal' when the word is used adjectivally. An an anonymous reviewer that brought this point to me also suggests that the term "variation" is preferable, as the term "dialect" is usually based on region. However, we will stick to the term "dialect," in honor of Harada's pionerering work. Incidentally, see also Kayne (2000: 7–8), who proposes "microparametric syntax" and argues that there could be as many parameters that could distinguish the (potential) number of idiolects who lives now, lived in the past, and will live in future, as he thinks that "it is entirely likely that no two speakers of English have exactly the same syntactic judgments." Accoerdingly, he suggests that "the number of syntactically distinct (potential) human languages is substantially greater than 5 billion." However, he also suggests that "the number of independent binary-valued syntactic parameters needed to allow for 5 billion syntactically distinct grammar is only 33 (2 raised to the 33rd power is about 8.5 billion)." Under this conception, what we call "dialects" could be a set of idiolects the microparametric values of which are relatively similar to each others. However, I have no idea whether Harada (1971) imagined a similar theory to Kayne's (2000) and used the two terms in a mixed way.

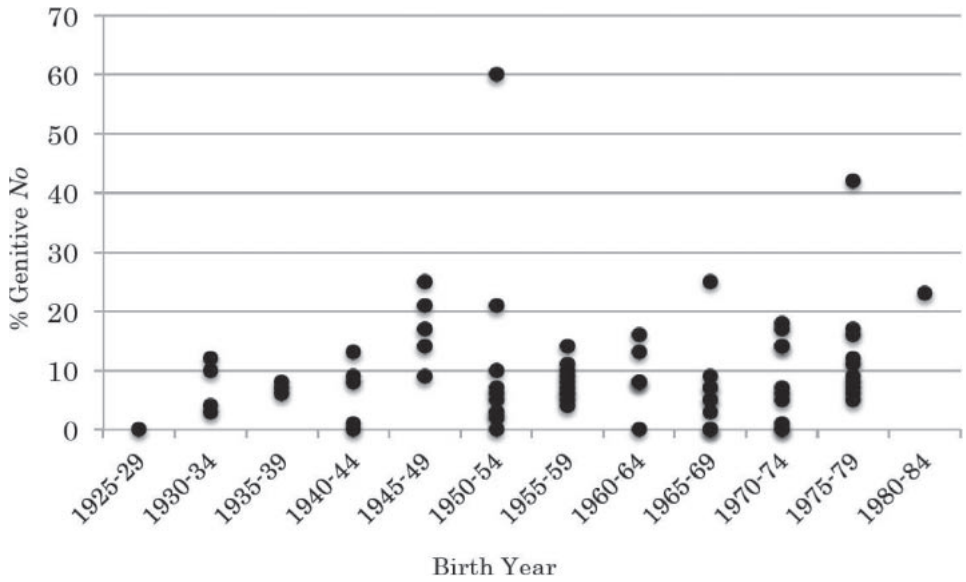


Fig. 6. Scatter plot of the rate of *no* in the CSJ data, cited from Nambu (2014).

What remains to be investigated is, then, whether the type frequency and token frequency of the GSC have been changing among those who were born in the late 20th century.

3.4 Ogawa's (2016) corpus study

In Ogawa (2016), I have made a preliminary corpus-based study of the diachronic change in the frequency of the NGC. I manually collected 3510 examples of Genitive subject *adnominal* clauses (GSCs) and 3809 examples of Nominative subject *adnominal* clauses (NSCs) from 28 novels (including 7 fictions and 21 nonfictions) of which the publication years range from 1904 to 2014.[11]

It is important to note that Ogawa (2016) differs from Nambu (2007, 2014) in that I collected data of the GSC and NSC from written texts rather than spoken ones. Chunagon as a historical corpus for Japanese, COHA as a historical corpus for American English and LEME, ICAME, and OED as a historical corpus for British English are all based on written texts, although COHA also compiles spoken data. As a study of diachronic change in other languages is generally based on written texts, a study of diachronic changes in the modern Japanese would be better implemented in terms of written texts (although a combination of written and spoken data would be better).

Throughout the data shown in Ogawa (2016), the frequency of the Nominative and Genitive subject in an adnominal clause per one million characters of texts were calculated. As most of the materials were not digitalized due to the copyright, the number of characters in the texts could not be digitally counted, so it was roughly calculated by multiplying page numbers, the numbers of characters in each column and the number of columns in a page and subtracting the number of pages and/or lots filled by something other than characters such as blank spaces, pictures, tables, and so on.

The collected data show the following five points, among others:

[10]In Nambu (2014) he concludes that "the change is heading to a complementary distribution of *ga* and *no* but it is not going to be complete due to the pseudo-NGA (Sakai (1994); Kikuta (2002))," which is an alternation between the Nominative subject in a clause and the Genitive NP that is base-generated in [Spec, D] that is not transformationally related to each other.

[11]As I will show in Sect. 3.5, the results obtained in this preliminary study are endorsed by Ogawa's (2018) more comprehensive one, based on more than 15000 examples of the GSC collected from 130 books of which the publication years range from 1874 to 2017. Moreover, like Nambu (2014) and unlike Ogawa (2016), Ogawa (2018) also sorted the data in terms of the birth years of the authors and showed that there is no essential difference in the tendency of diachronic change between the two types of sorting.

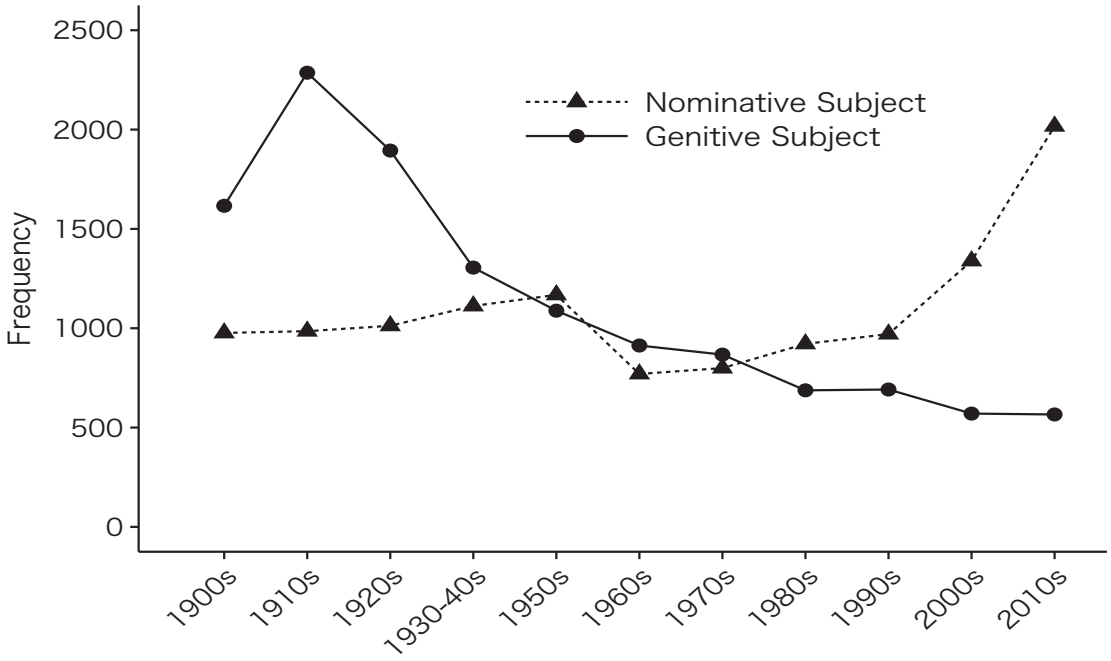


Fig. 7. The frequency of NSCs and GSCs per million characters.

(13) a. The frequency of GSCs is gradually decreasing, while the frequency of NSCs is gradually increasing in the 110 years, and the two are reversed in the mid of the 20th century. (→ Fig. 7) (cf. Nambu 2014)
b. The number of GSCs headed by a past tense predicate is gradually decreasing in the last 100 years, and the ratio of the past tense predicates among all the GSCs has been consistently lower than that among all the NSCs. (→ Fig. 8)
c. The GSCs in which the subject and the predicate are intervened by some element such as an adverb or a direct or indirect object, is gradually decreasing in the last 70 years, and the Genitive subject is far less likely to occur in the Non-Adjacent condition than the Nominative subject throughout the last 100 years. (→ Fig. 9) (cf. Harada 1971)
d. The tokens of the adnominal clause that is headed by an overt complementizer was sporadically found in the early 1900s, though it disappears in the literary works written after the 1960s. (→ Fig. 10) (cf. Hiraiwa 2002)
e. In an adnominal clause, the more stative a predicate is, the more likely it is to license a Genitive subject, and among the eventive predicates, predicates denoting a semelfactive activity is less likely to license a Genitive subject than predicates denoting a habitual/repetitive event or an event with a resultant state. The nominal predicate is least likely to license a Genitive subject.
(→ Fig. 11) (cf. Kim 2009; Miyagawa 2011)

First of all, the point in (13a) is shown in Fig. 7, which should be compared with Fig. 1. While Fig. 1 shows a diachronic change between the years 900 and 1925, based on all the tokens of Genitive and Nominative subjects in *all* clauses, Fig. 7 shows a diachronic change between the 1900s and the 2010s based on all the tokens of Genitive and Nominative subjects in *all adnominal* clauses, excluding complements to verbal or adjectival predicates:[12]

Next, (13b) or the diachronic change in the frequency of the NSCs and GSCs of which the predicates are in the past tense is shown in Fig. 8:

[12]Note that while the vertical axis in Figs. 1 to 4 shows frequency per million words, the one in Figs. 7 to 11 shows frequency per million characters. Note also that what we call "adnominal clauses" includes a few nominalized clauses (the so-called *jun-tai* setu) and a few (idiomatic) clauses which are not adnominal but ones immediately followed by a postposition, for reasons to be discussed in Sects. 4.1 and 4.4, respectively, both of which are relics of the grammar of the classical Japanese.

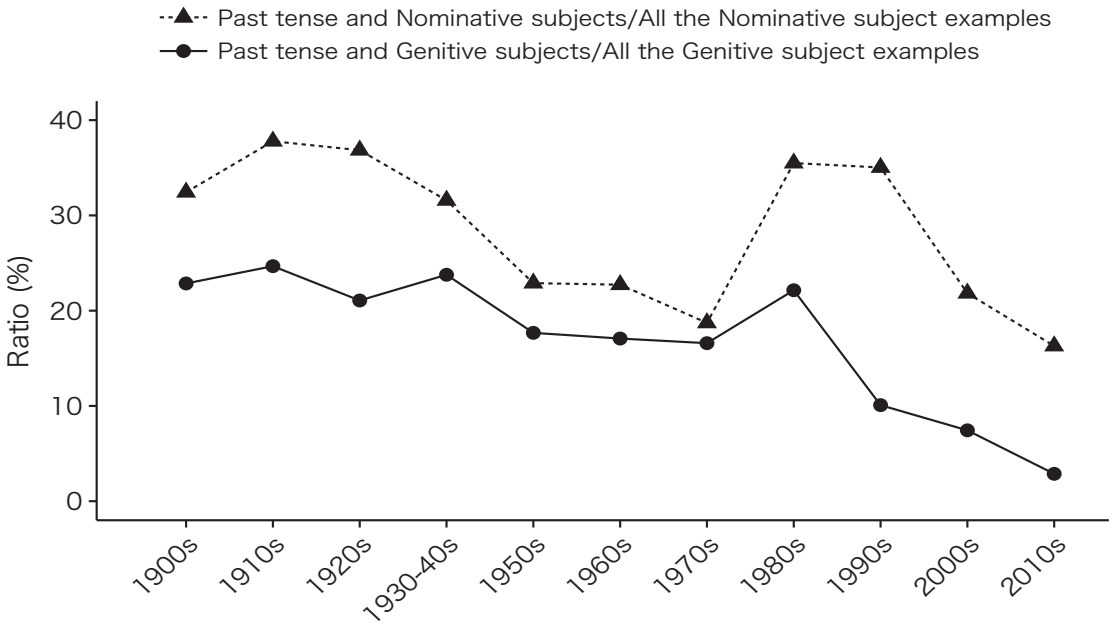


Fig. 8. The ratio of past tense adnominal clauses to all the NSCs and GSCs.

Although the ratio of the adnominal clauses of which the predicate has a past tense to all the clauses are decreasing for both NSCs and GSCs, Fig. 8 shows that the frequency of the GSCs with a past tense predicate has been lower than that of the NSCs throughout the last 110 years, a fact unmentioned in any previous analysis of the NGC.

(13c) and Fig. 9 are about examples like (9).

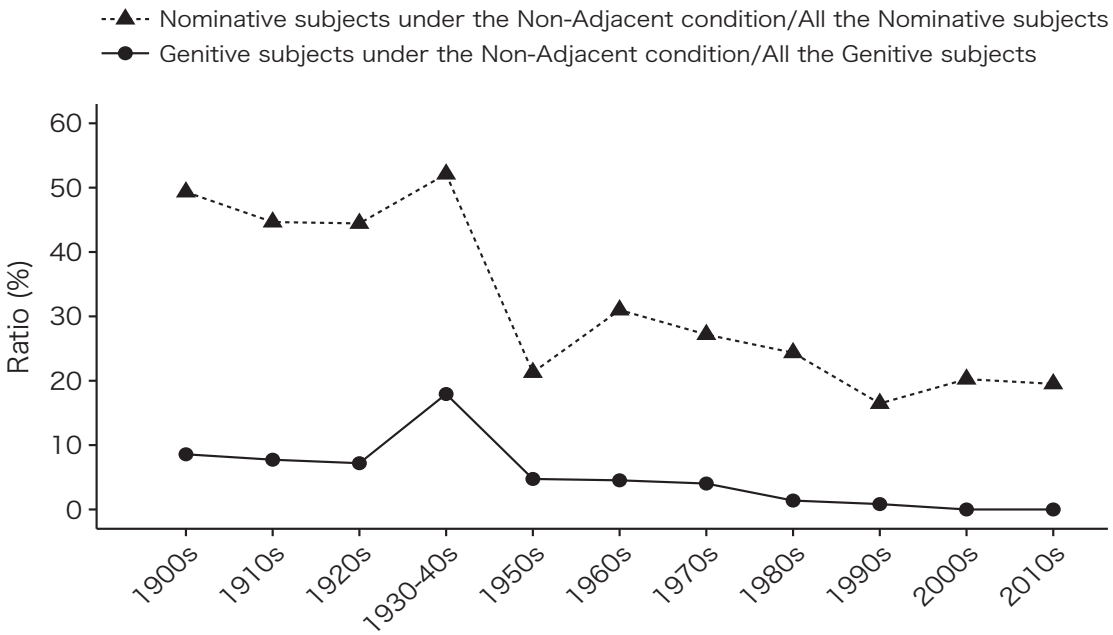


Fig. 9. The ratio of NSCs and GSCs under the Non-Adjacent Condition to all the NSCs and GSCs, respectively.

As for (9), Harada (1971) originally observed that the Genitive subject was strictly required to be adjacent to the predicate for the Dialect B speakers (those who were more or less in the twenties at the time), but no such restriction was imposed on the Dialect A speakers (those who were more or less in the forties at the time). Figure 9 shows that although the adnominal clauses of wehich the subjects are not adjacent to the predicates are gradually decreasing for both NSCs and GSCs, the frequency of the GSCs under the Non-Adjacent Condition has been lower than that of the NSCs under the same condition throughout the last 110 years, and (except for the irregular behavior of the works in the 1930s to 40s,) the frequency of both the NSCs and GSCs under the Non-Adjacent Condition has been monotonously decreasing. Hence, the existence of the two idiolects, Dialects A and B, can be analyzed as there having been a

threshold around the 1950s or so, after which the GSCs under the Non-Adjacent Condition could be acquired by a language learner as a grammatical micro-cue (or treelet) in Japanese.

(13d) and Fig. 10 show that, while the GSCs headed by an overt complementizer were originally rare in the early 20th century, it ceased to occur in a corpus after the 1970s.

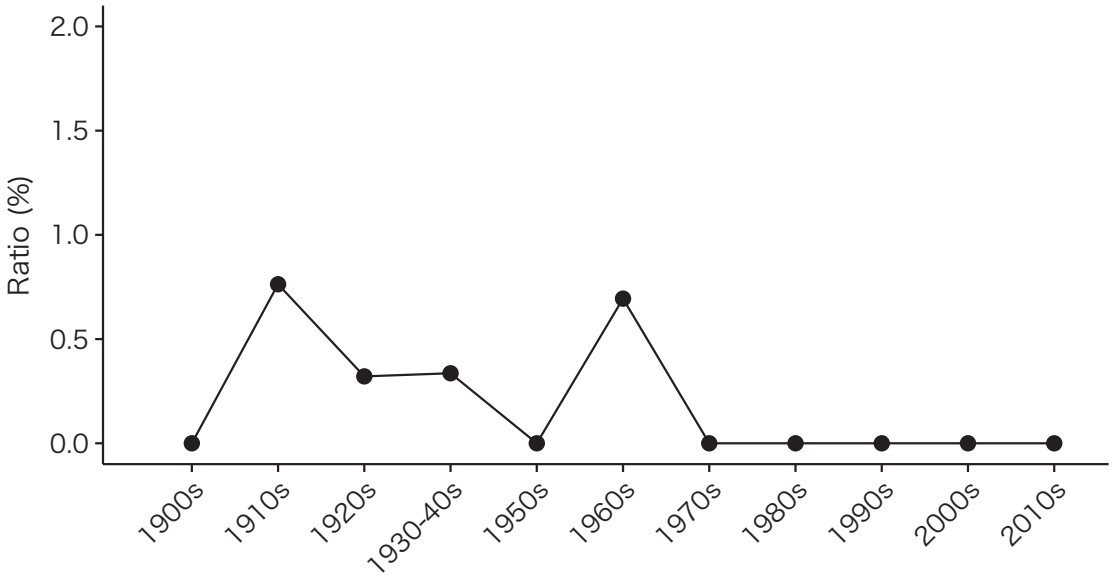


Fig. 10. The ratio of a GGCs headed by an overt complementizer to all the GSCs.

Some examples of the GSCs headed by an overt complementizer are illustrated in (14), where overt complementizers include the interrogative complementizer *ka* in (14a), the subordinator of an appositive clause *toiu* as in (14b, c), and the subordinator of a relative clause *tokorono* in (14d):

(14) a. Guntai-no mesi-**no** ikani mazui **ka**
army-Gen meal-Gen how unsavory **Q**
nado-o hanashi at-te, …
etc.-Acc talk over-and
'(we) talked about how unsavory the meals served in the army are"
(Naoya Shiga (1910), *Kamisori,* p. 66)

b. Yo-**no** akeru **toiu** koto-ga … soo hayaku
night-Gen open **Comp** fact-Nom so early
kite-wa naranai …
come-Top must not
'the situation in which a day breaks must not come so early, …'
(Ryunosuke Akutagawa (1916), *Imogayu*, p. 16)

c. De-te-wa tugoo-**no** warui **toiu**
published-TE-Top convenience-**Gen** bad **Comp**
kata-mo gozaimasu kara
person-also is (polite form) because
'because there is someone for whom publication (of his name) is inconvenient'
(Hiroyuki Agawa (1960), *Sora-tabi, Funa-tabi, Kisya-no Tabi,* p. 122)

d. Titi-no desi-tati-ga atumat-te, … so-**no** kuchiguchi-ni
father-Gen pupil-Pl.-Nom gather-and they-**Gen** each.and.very.mouth
watasi-ni youbou-suru **tokorono** mono-wa, …
I-to request-do **Comp** thing-Top
'What the pupils of my father gather and request to me each and every mouth is …'
(Kotaro Takamura (1954) *Titi-to-no Kankei*, p. 129)

These instances of the GSC headed by an overt complementizer are arguably a modernized version of the GSC headed by an overt adnominal inflection on C, which abounded in the classical Japanese, as shown in Table 3 and Fig. 3.

Although the latter had already been gradually declined in the 1000 years of the classical Japanese, Fig. 10 shows that the GSC with an overt complementizer totally died out in the 1970s.

About (13e), some qualifications are in order. First, Ogawa (2016) shows that, although predicates of all the semantic types are less and less likely to take a Genitive subject in the last 100 years, the more eventive predicates with a Genitive subject are more steeply decreasing their frequency than the more stative ones. Here, the eventivity or "dynamicity" of a predicate is classified by a six-fold classification as follows: whether it is (a) an adjective (most stative), (b) a stative verb (almost stative), (c) a change-of-state verb that implies a resultant state, (d) a verb that denotes repetition or habitual activity, (e) a semelfactive activity, or (f) a nominal (i.e., the copulative identificational sentence). These six subtypes are illustrated by the following sentences:

Table 5. Examples of GSCs in each of the six types of predicates.

	Predicate types	examples
(a)	adjectives	ひげが/の**濃い**男性は，女性にあまり好かれない. Hige-ga/no koi dansei-wa josei-ni amari sukarenai. beard-Nom/Gen dark male-Top female-by so be.loved.not 'a man with dark beard is not so loved by women.'
(b)	stative verbs	目鼻立ちが/の**しっかりした**女性は，きつい印象を持たれる. Mehanadachi-ga/no sikkarisita josei-wa kitui features-Nom/Gen clear-is woman-Top stern insyo-o mot-are-ru impression-Acc have-Pass-Nonpast 'A handsome woman gives the impression of being stern.'
(c)	verbs denoting habituality or repetition	桜が/の**咲く**季節には，親戚がみんな我が家に集まる. sakura-ga/no saku kisetu-ni-wa sinseki-ga Cherry-Nom/Gen blossom season-in-Top relatives-Nom minna wagaya-ni atumaru. all our.home-to gather 'When cherry blossoms, all the relatives gather to our home.'
(d)	verbs denoting result state of a changing event	窓ガラスが/の**割れた**部屋は，立ち入りが禁止されている. Madogarasu-ga/no ware-ta heya-wa tachiiri-ga window-Nom/Gen broken-was room-Top going.into-Nom kinsi-sarete-iru. prohibit-Pass-is 'You are prohibited from entering into the room of which the windows are broken.'
(e)	verbs denoting a semelfactive event	荷物が/の**届いた**時刻は，夕方の四時ごろであった. Nimoto-ga/no todoita jikoku-wa yuugata-no package-Nom/Gen arrived time-Top evening-Gen yoji-goro datta. four-o'clock-about was The time at which the package arrived was around 4 o'clock in the evening.
(f)	copula sentences with a nominal predicate	競馬が/の**趣味である**おじは，休日にいつも出かける. Keiba-ga/no syumi-dearu oji-wa kyuujitu-ni horse.race-Nom/Gem hobby-is uncle-Top day.off-in itumo dekakeru. always go.out 'My uncle whose hobby is betting at horse race always go out in his days off.'

In classifying some examples of predicates in the GSCs, there were some cases for which classification into a particular group was either controversial or not immediately obvious. In order to keep clear about our classification, let me illustrate some of them and explain how they were classified into where they are.

First, consider (15):

(15) a. ik-kai-dake hait-ta koto-ga aru doobutuen
one0time-only go.in-Past fact-Nom be-Nonpast zoo
'the zoo that I have entered only once'
b. mizu-no hait-ta koppu
water-Gen go.in-Past cup
'a cup into which water has been poured'
c. sima-no hait-ta boosi
stripe-Gen go.in-Past hat
'a hat in which there are stripes/a striped hat'

In all the three cases, the main verb is the past tense form of *hairu* 'go in,' and yet we classified (15a) into type (e) (i.e., verbs denoting a semelfactive event), (15b) into type (d) (i.e., verbs denoting result state of a changing event), and (15b) into type (b) (i.e., stative verbs). This is because in (15a), there coming an audience for the performance is a semelfactive event and there is no result state implied after the event; in (15b), the predicate of water being in a cup is stage-level and not only both the event of someone pouring the water into the cup but also the result state of water being in a cup are naturally imagined; in (15c), the hat has stripes from the time it began to be sold at a shop and there is no implication of the prior event of someone lining stripes on the hat. It is important to note here that the past tense form on a verb in Japanese does not always imply the existence of an event that took place prior to the speech time; rather, it sometimes implies an attribute (Kinzui (1989)) or an individual-level predication (Kratzer (1996)).

As a second minimal pair, consider also (16a, b):

(16) a. Ki-no kii-ta okurimono
mind-Gen catch.on-Past present
'a present with which the sender was considerate of the recipient'
b. Ki-no ki-ku hito
mind-Gen catch.on-Nonpast person
'a man who is always considerate of others'

In both (16a) and (16b) the same predicate *ki-ga/no kiku* 'considerate' is used with either the Past or Nonpast tense form, but because of the difference in the tense form, the main verb in (16a) is naturally interpreted as a single event of someone sending a present to someone and catching on him or her, the result state of which is observable from the contented attitude of the recipient; hence, it belongs to type (d) (i.e., verbs denoting result state of a dynamic event). By contrast, the main verb in (16b) is naturally interpreted as type (c) (i.e., verbs denoting habituality or repetition) because the non-past tense on the verb shows here (but not always) that the man in question is always considerate of others.

As a third complicated set of cases, consider (17a–c):

(17) a. Watasi-no not-ta ressha-wa Nagoya-made ki-ta tokoro-da.
I-Gen get.on-Past train-Top Nagoya-up.to come-Past place-is
'The train I got on has just come to Nagoya.'
b. Kinoo watasi-no not-ta ressha-to kyoo-no ressha-wa
yesterday I-Gen get.on-Past train-and today-Gen train-Top
norigokoti-ga mattaku chigau.
comfort-Nom totally differ
'The train I got on yesterday and today's one are totally different in their comfort.'
c. Tooji, mai-asa tuukin-de watashi-no not-ta ressha-wa
those.days every-morning commute-in I-Gen get.on-Past train-Top
itumo mannin datta.
always full.to.the.doors was
'The train I took to work every morning those days was always full to the doors.'

In all the three cases, the main verb is in the past tense form of *noru* 'get on,' and yet we classified (17a) into type (d) (i.e., verbs denoting result state of a changing event), (17b) into type (e) (i.e., verbs denoting a semelfactive event), and (17c) into type (c) (i.e., verbs denoting habituality or repetition). This is because in (17a), the action of the speaker getting on a train has led to the subsequent state of me being in the train, which continues at the reference time; in (17b), the action of the speaker getting on a train yesterday is semelfactive and telic as the speaker has already got it off and it is compared with the action of the speaker getting on a train today in terms of their comfort; in (17c), the action of the speaker getting on a train is a habitual action that "I" experienced everyday. Thus, the three events of "getting on," though morphologically identical, are aspectually distinguished from each other and they are classified into three different subcategories, as judged from the contexts these verbs occur in.

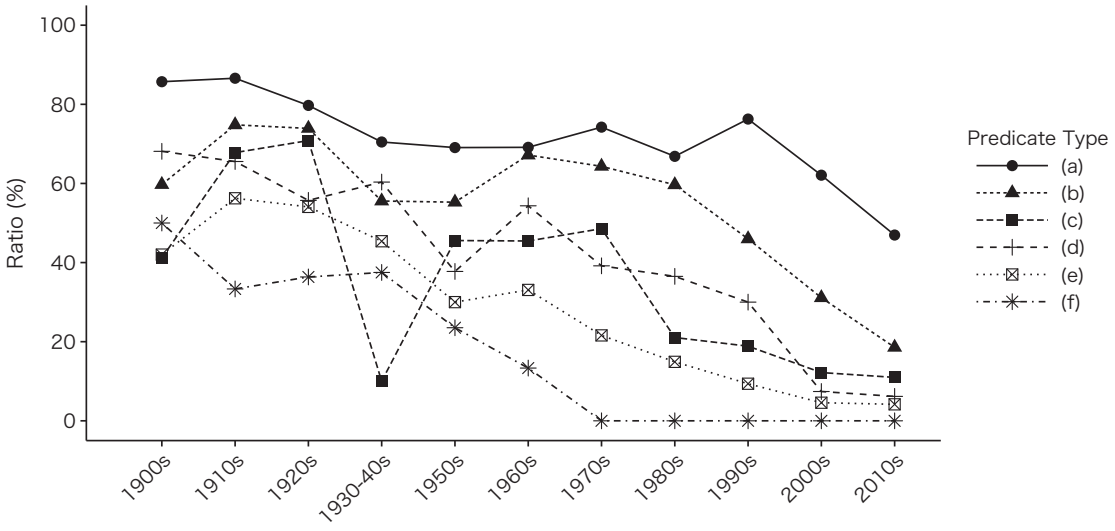


Fig. 11. The ratio of GSCs to the sum of NSCs and GSCs co-occurring with each of the six types of predicates.

The final minimal pair is illustrated below:

(18) a. Taro-**no** tabe-ru yasai
Taro-**Gen** eat-Nonpast vegetable
'the vegetable(s) that Taro eats'
b. Taro-**no** tabe-nai yasai
Taro-**Gen** eat-Neg vegetable
'the vegetable(s) that Taro does not eat'

In (18a, b), the verb *tabe(ru)* 'eat' is used in the affirmative and negative sentences, respectively. Although both express Taro's habit as to the vegetables, (18a) is classified into type (c) (i.e., verbs denoting habituality or repetition), whereas (18b) is classified into type (a) (i.e., adjectives), because the complex predicate in the latter GSC is headed by *nai* 'not,' which is categorially adjective. More generally, we assume that whenever categorial classification and semantic classification conflict with each other, the former overrides the latter, as we are assuming that the *morphosyntactic* environment a Genitive subject occurs in is a crucial factor and, as in the practice of any generative syntactic argument, that only morphosyntactic properties can be parametrized (or constitute positive evidence for a child to fix the value of a parameter) (cf. Travis (1984)).

Given the six-way semantico-categorial distinction from (a) to (f) for the predicates of an adnominal clause, Ogawa (2016) observes that the ratio of the (a) type predicate taking a Genitive subject is the highest, the ratio of the (b) type predicate taking a Genitive subject comes next, the ratio of the (c) and (d) type predicates taking a Genitive subject stand at the third, the ratio of the (e) type predicates stands at the fourth, and the (f) type predicate comes last. And for all the six types of predicates, the ratio of Genitive subjects to the sum of Genitive and Nominative subjects tends to decline from the 1900s to the 2010s. Of all the six types, the GSC with a nominal predicate (like (8)) most steeply decreased its frequency and ceased to be observed in my corpus after the 1960s.

All in all, the diachronic change in the last 110 years shows the following point:

(19) a. Although the GSCs that occurred up to the early 20th century was compatible with every type of syntactic predicate, whether it is verbal, adjectival or nominal, and with every type of semantic predicate, whether it is dynamic and atelic, dynamic and telic, repetitive, habitual, stative, or property-describing, already in the early 20th century, the more stative a predicate is, the more likely it is to have a Genitive subject than a less stative one.
b. The frequency of the GSC has gradually been decreasing in the last 110 years, with the correlation between the stativity and frequency of the GSC kept, and as a result, the semelfactive eventive predicate and the nominal predicate, which were originally infrequently occurring with a Genitive subject in the early 20th century, have (almost) ceased to do so in the 21st century.

3.5 The main corpus study

The results of the preliminary study in Ogawa (2016) showed the general tendency of synchronic and diachronic properties of the adnominal clauses in which Nominative and genitive subjects occur. However, there remained two problems to be solved: first, one of its main purposes was to check what Nambu (2014) observed synchronically and

construction by construction or diachronically and overall in terms of how each construction has undergone diachronic change, so the total number of NSCs and GSCs were nearly the same as the one collected by Nambu (2014). However, the number is too small to reach any reliable conclusion about what microparametric change has been occurring about the GSCs; second, what Nambu (2014) used was the Hansard Corpus, which is a compile of oral utterances by politicians, and what Ogawa (2014) used was a less than 30 volumes of books of which the genre was limited to novels; in fact, many of the books were from the nonfictions or essays about travels written by less than 20 different authors. In order to avoid picking up specific usage by specific writers or styles used in a specific genre of writing, hopefully, the data source should have been much broader, with respect to both the number and the genres of books, so as to include more or less 10 volumes by 10 different authors in each decade.

Hence, for the two years between the mid 2016 and the mid 2018, I made a larger scale of quantitative investigation of the diachronic change in the distribution of Genitive subjects in adnominal clauses, with essentially the same types of constructions in which a Genitive subject occurs as I did in Ogawa (2016). Here, I limited the focus to Genitive subjects and excluding the Nominative subjects, and added a few sub-classifications so as to divide the GSC into more fine-grained subtypes of constructions than I did in 2016.

This time, I manually collected 15723 examples of the GSCs from a total of 130 books published between the 1890s and the 2010s, of which the genres are divided into three groups: (i) books for education and/or cultivation that are newly published to inform people of the recent situation and/or ways of thinking about science, culture, way of life, and so on (the so-called *sinsho* in Japanese), (ii) novels and essays, which include fictions and nonfictions, and (iii) biography and autobiography, written by celebrities from every genre, including academics, sports, public entertainment, and entrepreneurship; the balance between the three genres are 45 books from (i), 57 books from (ii) and 28 books from (iii).[13]

In addition to the genres, each of the 130 books was sorted in terms of (iv) when its first edition was published, (v) when its author was born, and (vi) where the author was born. The results of the sorting are shown in the following tables:

Table 6. 130 books sorted in terms of genres and the year of first publication.

year of publication	1890s~1910s	1920s~1930s	1940s~1950s	1960~1970s	1980~1990s	2000~2010s	sum
in total	7	9	14	18	32	50	130
books for cultivation	1	3	3	5	10	23	45
novels or essays	5	4	8	9	14	17	57
(auto)biography	1	2	3	4	8	10	28

Table 7. 130 books sorted in terms of genres and the birth year of the author.

birthyear of the author	1830~1870s	1880~1890s	1900~1910s	1920~1930s	1940~1950s	1960~1970s	1980~1990s	sum
in total	6	19	14	34	30	16	11	130
books for cultivation	2	4	4	10	15	6	4	45
novels or essays	2	11	4	20	8	7	5	57
(auto)biography	2	4	6	4	6	3	3	28

The syntactic environments according to which each instance of the GSC was classified are summarized below:

(20) a. Genitive subjects in a past tense clause
b. GSCs non-adjacent to the predicate
c. GSCs of which the predicate is stative (verb or adjective)
d. GSCs of which the predicate is an unaccusative eventive verb
e. GSCs of which the predicate is a transitive or unergative verb
f. GSCs of which the predicate is an individual-level predicate
g. GSCs of which the predicate is a passivized verb
h. GSCs of which the predicate is a nominal and which includes a copula *na*/*no*
i. GSCs headed by a formal (non-referential) noun
j. GSCs headed by an overt complementizer

Among these, the constructions out of investigation in Ogawa (2016) are (20d), (20e), (20f), (20g), and (20i), of which the typical examples are illustrated in (21) to (25) (cf. (13a–e)). First, consider the minimal pair of unaccusative and passivized eventive verbs in (21):

[13]The number of authors born in the metropolitan area (Tokyo, Saitama, Kanagawa, Chiba, Gunma) and ones born elsewhere were counterbalanced so that each group could include 65 books. Also, 19 of the 130 books were selected from those written by a female author, so as to avoide the gender bias as far as possible. See Appendix for the list of the titles and authors of the 130 books.

(21) a. mado-no ai-te-iru heya
window-Gen open$_{unacc}$-TE-Perf room
'the room of which the window has opened'
b. mado-no ake-rare-te-iru heya
widow-Gen open$_{tr}$-Pass-TE-Perf room
'the room of which the window has been opened'

(21a) and (21b) minimally differ in terms of whether the main predicate of the GSC is an unaccusative eventive verb or a passivization of its transitive counterpart. In the phase theory of minimalist syntax (Chomsky 2000, et seq), the two types of predicate are both assumed to lack an external argument and hence they have a vP as a weak phase. Given Miyagawa's (2011, 2013) theory of Genitive Case licensing in terms of phase theory, there would occur no difference between the two types in terms of acceptability judgment or frequency. As we will show shortly, however, there is a clear difference between the two, and they both have undergone a considerable diachronic change in frequency, too.

Second, consider the minimal pair in (22):

(22) a. kao-no akai hito
face-Gen red person
'the person whose face is red (flushed)'
b. yuuyake-noakai koto
evening.glow-Gen red fact
'the fact that evening glow is red'

In both (22a) and (22b), the predicate is an adjective *akai* 'red.' However, (22a) is classified into (20c) (Genitive subjects of a stative predicate), and (22b) is classified into (20f) (Genitive subjects of which the predicate is individual-level). (22a) is an instance of the relative clause headed by a referential noun and the GSC is a relative clause; the head noun of the relative clause and the Genitive subject has a relation between the inalienable possession (IAP) nominal and its possessor. Hence, the Genitive subject is not a bona-fide subject of a semantically independent predicate; rather, we assume that the IAP nominal and the adjective form a complex predicate, of which the real subject is external to the GSC. Thus, *kao-no akai* corresponds to the English predicative word *flushed*. This cor-respondence between Japanese and English is a widely observed pattern. Consider (23):

(23) a. se-ga/no takai '(lit.) stature is high (= tall)'
b. kosi-ga/no hikui '(lit.) waist is low (= polite)'
c. kaoiro-ga/no warui '(lit.) complexion is bad (= pale)'
d. ki-ga/no tooi '(lit.) mind is far away (= faint)'

As such, in Japanese, there are a number of complex predicates formed by an IAP nominal and an adjectival predicate, and almost all of these complex predicates allow a Genitive Case on the IAP nominal if they occur as a relative clause of which the head is the possessor of the IAP nominal. Hence, we can assume that the IAP nominal in the Genitive Case is base-generated in AP. In fact, this is the most frequent type of GSC in Japanese.

On the other hand, (22b) is an instance of appositive clause headed by a formal noun *koto* 'fact' and the GSC is an appositive complement clause. In this case, the Genitive subject is not part of a complex predicate but the external subject of the adjective; hence, if the adjective is an individual-level predicate, it is reasonable to assume with Diesing (1992) that the external subject is base-generated in [Spec, T], controlling PRO in AP. The two types of GSCs will therefore be structured as in (24a) and (24b), respectively:

(24) a. [$_{DP}$ [$_{AP}$ kao-no akai] NP (hito)] D] (GSC = AP)
b. [$_{DP}$ [$_{TP}$ yuuyake-no [$_{AP}$ PRO akai] D (koto)] (GSC = TP dominating AP)

As will be shown shortly, although the (24b) type of Genitive subject was originally rare in the early 20th century, its frequency has been steeply decreasing in the last 110 years.

Third, as an illustration of (20i), consider the minimal pair in (25):

(25) a. Taro-**no** sun-de-iru Tokyo
Taro-**Gen** live-TE-is Tokyo
'Tokyo, where Taro lives'
b. Taro-**no** sun-de-iru basho
Taro-**Gen** live-TE-is place
'the place where Taro lives'

(25a) and (25b) minimally differ in terms of whether the GSC is a non-restrictive relative clause or a restrictive one; in the former the head noun is a referential and definite noun, whereas in the latter the head noun is a nonreferential formal noun that cannot stand alone but needs an adnominal clause (e.g., relative clause or appositive clause).

(25b) (as well as (22b)) is an instance of (20i): the GSCs headed by a formal (non-referential) noun. As we will show shortly, both the frequency of this type of the GSC and its percentage among all the GSCs has been decreasing in the last 110 years.

Including these, the results of the investigation are shown in Tables 8 and 9 (sorted by the year of publication, ranging between the year 1895 and 2017) and Tables 10 and 11 (sorted by the birth year of the author, ranging between the year 1835 and 1992). Tables 8 and 10 show a change in terms of the frequency of each construction with a Genitive subject, while Tables 9 and 11 show a change in terms of the percentage of each construction with a Genitive subject among all the instances of the GSC.

As far as the frequency is concerned, Tables 8 and 10 show that, regardless of the type of construction in which a Genitive subject occurs, and regardless of whether it is sorted by the year of publication or by the birth year of the author, the frequency has likely been declining in the last 120 or 160 years. As far as the percentage of each construction with a Genitive subject among all the instances of the GSC, Tables 9 and 11 show that only the percentage of the GSC headed by a stative (verbal or adjectival) predicate among all the instances of the GSC has been gradually increasing in the last 120 or 160 years, because the frequency of the GSCs that occur in the other types of constructions have been more steeply decreasing in the same period.

Table 8. The diachronically changing frequency of the GSC per million characters (sorted by the year of publication of the relevant book).

Publication years	1890s~1910s	1920s~1930s	1940s~1950s	1960~1970s	1980~1990s	2000~2010s	total
birth years of authors on average	1872.29	1889.22	1898.31	1914.95	1936.44	1959.77	
Total volumes of the source of GSCs	7	9	14	18	32	50	130
the number of characters counted	906197	750616	1966381	2479676	4906921	5557522	16567313
the total number of GSCs counted	2080	1172	2682	2330	3979	3480	15723
the frequency of GSCs PER MIL	2295.31	1561.38	1363.93	939.64	810.90	623.44	decreasing
the frequency of Genitive subjects in a past tense clause PER MIL	461.27	373.03	269.02	180.67	171.19	95.86	decreasing
the frequency of Genitive subjects non-adjacent to the predicate PER MIL	226.22	151.88	118.49	36.30	20.99	15.86	decreasing
the frequency of Genitive subjects whose predicate is stative PER MIL	1270.14	810.00	812.15	594.84	527.62	459.82	decreasing
the frequency of Genitive subjects whose predicate is an unaccusative eventive verb PER MIL	496.58	362.37	216.64	159.30	115.75	63.27	decreasing
the frequency of Genitive subjects whose predicate is a transitive or unergative verb PER MIL	486.65	335.72	295.47	170.18	157.13	93.79	decreasing
the frequency of Genitive subjects whose predicate is an individual-level predicate PER MIL	62.90	41.30	25.43	10.89	4.69	2.59	decreasing
the frequency of Genitive subjects whose predicate is nominal PER MIL	19.86	18.65	14.75	3.23	1.63	0.86	decreasing
the frequency of Genitive subjects whose predicate is a passivized verb PER MIL	22.07	34.64	24.92	12.10	8.76	5.69	decreasing
the frequency of GSC headed by a formal noun or an adnominal form of a predicate PER MIL	1377.18	873.95	681.96	375.45	319.30	208.96	decreasing
the average number of the kinds of formal noun that takes a GSC	48.29	24.11	29.50	23.11	22.36	12.34	decreasing
the frequency of GSC headed by an overt complementizer	67.31	14.65	5.09	2.42	1.22	0.34	decreasing

Table 9. The diachronically changing ratio of GSCs in a particular construction to all the GSCs (%; sorted by the year of publication the relevant book).

Publication years	1890s~1910s	1920s~1930s	1940s~1950s	1960~1970s	1980~1990s	2000~2010s	total
birth years of authors on average	1872.29	1889.22	1898.31	1914.95	1936.44	1959.77	
Total volumes of the source of GSCs	7	9	14	18	33	49	130
the number of characters counted	906197	750616	1966381	2479676	4906921	5557522	16567313
the total number of GSCs counted	2080	1172	2682	2330	3979	3480	15723
the percentage of Genitive subjects in a past tense clause / all the GSCs	20.10	23.89	19.72	19.23	21.11	15.38	decreasing
the percentage of Genitive subjects non-adjacent to the predicate / all the GSCs	9.86	9.73	8.69	3.86	2.59	2.54	decreasing
the percentage of Genitive subjects whose predicate is stative / all the GSCs	55.34	51.88	59.55	63.30	65.07	73.76	increasing
the percentage of Genitive subjects whose predicate is an unaccusative verb / all the GSCs	21.63	23.21	15.88	16.95	14.27	10.15	decreasing
the percentage of Genitive subjects whose predicate is a transitive or unergative verb / all the GSCs	21.20	21.50	21.66	18.11	19.38	15.04	decreasing
the percentage of Genitive subjects whose predicate is an individual-level predicate / all	2.74	2.65	1.86	1.16	0.58	0.41	decreasing
the percentage of Genitive subjects whose predicate is nominal / all the GSCs	0.87	1.19	1.08	0.34	0.20	0.14	decreasing
the percentage of Genitive subjects whose predicate is a passivized verb / all the GSCs	0.96	2.22	1.83	1.29	1.08	0.91	decreasing
the percentage of GSC headed by a formal noun or an adnominal form of a predicate / all the GSCs	60.00	55.97	50.00	39.96	39.38	33.52	decreasing
the percentage of GSC headed by an overt complementizer / all the GSCs	2.93	0.94	0.37	0.26	0.15	0.06	decreasing

Table 10. The diachronically changing frequency of the GSC per million characters (sorted by the birth year of the author of the relevant book).

birth years of the authors	1830~1870s	1880~1890s	1900~1910s	1920~1930s	1940~1950s	1960~1970s	1980~1990s	total
Total volumes of the source of GSCs	6	19	14	34	29	16	12	130
average birth years of the authors	1868.14	1890.25	1908.38	1928.06	1948.75	1965.88	1983.83	
averege years of publication of the books	1916.86	1941.83	1961.31	1983.04	2003.89	2004.63	2013.08	
the number of characters counted	716844	2102695	1892541	4967581	3826931	1803304	1551879	16567313
the total number of GSCs counted	1551	3101	2310	4384	2592	1200	746	15723
the frequency of GSCs PER MIL	2163.65	1474.77	1220.58	882.52	677.31	665.45	480.71	decreasing
the frequency of Genitive subjects in a past tense clause PER MIL	412.92	339.56	233.02	167.89	112.88	104.25	74.10	decreasing
the frequency of Genitive subjects non-adjacent to the predicate PER MIL	302.72	106.53	77.14	32.01	13.85	13.86	10.31	decreasing
the frequency of Genitive subjects whose predicate is stative PER MIL	1141.11	811.34	766.17	591.84	465.12	501.86	332.50	decreasing
the frequency of Genitive subjects whose predicate is an unaccusative eventive verb PER MIL	486.86	304.37	172.26	130.45	82.57	56.01	60.57	decreasing
the frequency of Genitive subjects whose predicate is a transitive or unergative verb PER MIL	467.33	330.53	251.51	148.56	120.98	98.15	83.13	decreasing
the frequency of Genitive subjects whose predicate is an individual-level predicate PER MIL	76.73	27.11	20.61	9.06	0.78	0.55	0.64	decreasing
the frequency of Genitive subjects whose predicate is nominal PER MIL	23.72	12.84	9.51	2.62	0.52	2.22	0.64	decreasing
the frequency of Genitive subjects whose predicate is a passivized verb PER MIL	44.64	15.69	21.14	9.06	8.10	7.21	3.87	decreasing
the frequency of GSC headed by a formal noun or an adnominal form of a predicate PER MIL	1516.37	747.14	561.68	316.25	222.63	226.25	165.61	decreasing
the average number of the kinds of formal noun that takes a GSC	44.71	27.00	27.92	20.69	14.86	12.06	11.42	decreasing
the frequency of GSC headed by an overt complementizer	79.52	10.94	3.17	1.41	0.26	0.00	0.64	decreasing

Table 11. The diachronically changing ratio of GSCs in a particular construction to all the GSCs (%; sorted by the birth year of the author of the relevant book).

	1830~1870s	1880~1890s	1900~1910s	1920~1930s	1940~1950s	1960~1970s	1980~1990s	total
Total volumes of the source of GSCs	6	19	14	34	29	16	12	130
average birth years of the authors	1868.14	1890.25	1908.38	1928.06	1948.75	1965.88	1983.83	
averege years of publication of the books	1916.86	1941.83	1961.31	1983.04	2003.89	2004.63	2013.08	
the number of characters counted	716844	2102695	1892541	4967581	3826931	1803304	1551879	16567313
the total number of GSCs counted	1551	3101	2310	4384	2592	1200	746	15723
the percentage of Genitive subjects in a past tense clause / all the GSCs	19.08	23.02	19.09	19.02	16.67	15.67	15.42	decreasing
the percentage of Genitive subjects non-adjacent to the predicate / all the GSCs	13.99	7.22	6.32	3.63	2.04	2.08	2.14	decreasing
the percentage of Genitive subjects whose predicate is stative / all the GSCs	52.74	55.01	62.77	67.06	68.67	75.42	69.17	increasing
the percentage of Genitive subjects whose predicate is an unaccusative verb / all the GSCs	22.50	20.64	14.11	14.78	12.19	8.42	12.60	decreasing
the percentage of Genitive subjects whose predicate is a transitive or unergative verb / all the GSCs	21.60	22.41	20.61	16.83	17.86	14.75	17.29	decreasing
the percentage of Genitive subjects whose predicate is an individual-level predicate / all the GSCs	3.55	1.84	1.69	1.03	0.12	0.08	0.13	decreasing
the percentage of Genitive subjects whose predicate is nominal / all the GSCs	1.10	0.87	0.78	0.30	0.08	0.33	0.13	decreasing
the percentage of Genitive subjects whose predicate is a passivized verb / all the GSCs	2.06	1.06	1.73	1.03	1.20	1.08	0.80	decreasing
the percentage of GSC headed by a formal noun or an adnominal form of a predicate / all the GSCs	70.08	50.66	46.02	35.83	32.87	34.00	34.45	decreasing
the percentage of GSC headed by an overt complementizer / all the GSCs	3.68	0.74	0.26	0.16	0.04	0.00	0.13	decreasing

4. The Previous Analyses of the NGC

Now that we have fully understood how the Nominative subjects have developed and Genitive subjects have declined in the last 1000 years, and where a Genitive subject is most likely to occur synchronically, we are ready to propose a syntactic analysis of the generalization about diachronic change. Before that, however, it may be better to make a brief review of the previous syntactic analyses of the NGC and/or the mechanism of Genitive Case marking

into the embedded clause, especially in the framework of the Principles and Parameters Theory and/or the Minimalist Program of Linguistic Theory, as my own analysis of the GSC is also based on these generative frameworks.

In what follows, we will take up analyses by Miyagawa (1993), Watanabe (1996), Hiraiwa (2002), Maki and Uchibori (2008), and Miyagawa (2011). Essentially, it will be argued that although each of these analyses has captured some aspect of the truth about the NGC/GSC, none of them is satisfactory as they are, because the previous synchrony analyses of the NGC/GSC cannot be straightforwardly extended to its diachrony as we have reviewed in the previous section.

4.1 Miyagawa (1993) and Ochi (2001)

Miyagawa (1993) has proposed a DP-structure & NP-movement analysis of the NGC, in which a Genitive subject is base-generated in the embedded adnominal clause and undergoes NP-movement to [Spec, D] to have its Genitive Case formally licensed. Miyagawa presents a minimal pair like (26) as evidence for his analysis.

(26) a. Taro ka Jiro-**ga** kuru riyuu-o osiete.
Taro-or Jiro-**Nom** come reason-Acc tell (reason > T or J)
'Tell me the reason why Taro or Jiro will come.' (*T or J > reason)
b. Taro ka Jiro-**no** kuru riyuu-o osiete.
Taro-or Jiro-**Gen** come reason-Acc tell
'Tell me the reason why Taro or Jiro will come.' (reason > T or J)
'Tell me the reason why Taro comes or why Jiro comes. (T or J > reason)

In (26a), the subject of the relative clause has a Nominative Case, which is checked in the [Spec, T] of the relative clause, and hence does not have a reason to move out of the relative clause. This is why the quantificational subject cannot have a scope over the head noun of the relative clause: *riyuu* 'reason.' By contrast, in (26b), the subject of the relative clause has a Genitive Case, which is checked in the [Spec, D] of the noun phrase, and hence it must move out of the relative clause at LF (covertly). As a result, it can take scope over the head of the relative clause, but its original position is c-commanded by the head of the relative clause. This is why (26b) is scopally ambiguous.

Miyagawa's (1993) analysis is synchronically valid because there is some reason to show that the Genitive subject (can) remain inside the adnominal clause, as in (27) (Nakai (1980)):

(27) a. kinoo Taro-no kat-ta hon
yesterday Taro-Gen buy-Past book
'the book that Taro bought yesterday'
b. sofaa-de ane-no yon-de-iru hon
sofa-at sister-Gen read-TE-Prog book
'the book that (my) sister is reading at the sofa'

As the temporal adverb *kinoo* 'yesterday' in (27a) modifies TP (Miyagawa (1993)) and the locative adverb *sofaa-de* 'at the sofa' in (27b) modifies vP (Ogawa and Niinuma (2013)), and neither can modify the head noun *hon* 'book' directly, the Genitive subject that follows these adverbs must be within the relative clause. At the same time, if the Genitive subject must have Genitive Case licensed by the functional head D, then there must be a (covert) movement relation between [Spec, D] and within TP. This is why Miyagawa proposed the covert NP-movement analysis.

However, the covert category movement analysis is falsified by Ochi (2001), who shows that the presence of an adverb before a Genitive subject eliminates the possibility that the Genitive subject can take scope over the nominal head:

(28) a. Kyoo Taro-ka Jiro-**ga** kuru kanoosei-wa 50% da.
Today Taro-or Jiro-**Nom** come possibility-Top 50% is
'The possibility that today Taro or Jiro will come is 50%.'
(possibility > T or J/*T or J > possibility)
b. Kyoo Taro-ka Jiro-**no** kuru kanoosei-wa 50% da.
Today Taro-or Jiro-**Gen** come possibility-Top 50% is
'The possibility that today Taro or Jiro will come is 50%.'
(possibility > T or J/*T or J > possibility)

In both (28a) and (28b), a temporal adverb *kyoo* 'today' is placed before the subject, and in this case, the difference between the Nominative and Genitive Cases does not influence the scopal interpretation: in both the quantificational subject has only the narrow scope with respect to the noun *kanoosei* 'possibility.' For this reason and others, Ochi (2001) proposes a revision of Miyagawa (2001), admitting an option of the apparent Genitive subject being base-generated in [Spec, D], as well as an option of only the formal feature of the Genitive subject (which was base-

generated inside the adnominal clause) being moved to [Spec, D], which does not result in a scope reversal.

Also, adverb placement is not as free as is expected if the relative clause with a Genitive subject would be as full-fledged as one with a Nominative subject is. Miyagawa (2013: 4) shows that an example similar to (27b) is not always acceptable:

(29) Geki-de musume-ga/*no odot-ta koto
play-in daughter-Nom/Gen dance-Past fact
'the fact that my daughter danced in the play'

If at least some adverb is excluded from the pre-subject position of a GSC, some explanation is necessary (cf. also Ogawa, Niikuni and Wada (2017)).

Moreover, Miyagawa's (1993) DP-structure & NP-movement has no way to explain the idiolectal variation which Harada (1971) pointed out and the facts of diachronic change which we presented in Sect. 3.

4.2 Watanabe (1996)

Watanabe (1996) proposes a CP-structure & *Wh*-movement analysis of the NGC and argues against Miyagawa's (1993) DP-structure & NP-movement analysis. More specifically, He bases his proposal on the fact that the properties of the NGC (or what Watanabe calls "*Ga/No* Conversion"), as summarized in (30), is quite similar to those of French Stylistic Inversion, as summarized in (31):

(30) Properties of the NGC:
a. limited to relative clauses and nominal complements.
b. optional.
c. subject to transitivity restriction, which is lifted when the object is *wh*-extracted.
d. limited to Nominative (no *Accusative-Genitive* conversion)

(31) Properties of French Stylistic Inversion:
a. limited to *wh*-extraction domain and some subjunctive complements.
b. optional.
c. subject to transitivity restriction, which is lifted when the object is *wh*-extracted.

The property in (31) is illustrated in the following examples:

(32) a. Quand partira ton ami?
When will-leave your friend
'When will your friend leave?' (Kayne and Pollock (1978: 595))
b. Je veux que parte Paul.
I want that leave-Subj Paul
'I want Paul to leave.' (Watanabe (1996: 379))

Similarly, Watanabe argues the two typical environments in which the NGC occurs are relative clauses, which usually is assumed to involve *wh*-movement, and nominal complements. In addition, it can be assumed that the following comparative clause also involves a null operator movement (a kind of *wh*-movement) and can license the NGC:

(33) John-wa [Mary-**ga/no** yonda yori] takusan-no hon-o yon-da.
John-TOP [Mary-**Nom/Gen** read than many-GEN book-ACC read-Past
'John read more books than Mary did.'

The transitivity restrictions in (30c) and (31c) are illustrated below:

(34) a. [John-**ga/*no** LGB –o kasi-ta] hito
John-**Nom/Gen** LGB-Acc lend-Past person
'the person to whom John lent LGB' (Watabnabe (1996: 376))
b.* Je me demande quand mangera sa pomme Marie.
I wonder when will-eat her apply Mary
'I wonder when Mary will eat her apply.' (Watabnabe (1996: 380))

Without going into the details of how similar the nominal complement in Japanese is to the subjunctive complement in French,[14] we take it that the fact that the NGC is possible in (34) despite there being no overt nominal head seems Watanabe's hypothesis intriguing. In fact, in my corpus, I can find some examples in which the existence of *wh*-

movement is more transparent in the context of the NGC, as in (35):

(35) a. Guntai-no mesi-**no** **ikani** mazui **ka**
army-Gen meal-**Gen** **how** unsavory **Q**
nado-o hanashi at-te, …
etc.-Acc talk over-and (= (14a))
'(we) talked about how unsavory the meals served in the army are"
(Naoya Shiga (1910), *Kamisori,* p. 66)

b. Sansiro-wa mayoeru ko-**no** **nanimono-ka**-o sugu satot-ta.
Sansiro-Top strayed child-**Gen** **who-Q**-Acc soon realize-Past
'Sansiro realized soon who the strayed child was.'
(Soseki Natume (1908), Sansiro, p. 132)

c. Konna buaisou-na baba-**no** kikon-ka mikon-**ka-**ni
such.a unsociable old.lady-**Gen** married-or unmarried-**Q**-Dat
kansin-o motu hito-wa i-nai to omou ga.
interest-Acc have person-Top is-not Comp think though
'I think that no one would be interested in whether such an unsociable old lady is married or not (married).'
(Shunzo Miyawaki (1980), *Indo Tetudo Ryoko*, p. 183)

Unfortunately, however, such a co-occurrence of a *wh*-phrase and a Genitive subject was already quite rare in the early 20th century, and it has almost totally disappeared by the late 1970s, when an overt complementizer and a Genitive subject became incompatible. Even if we artificially make such an example, they are hardly acceptable:

(36) a. Taro-ga/*no doko-de kega-si-ta-**ka** sitteru no?
Taro-Nom/Gen where-at injury-do-Past-Q know Q
'Do you know where Taro got injured?'

b. jibun-ga/*no dooyatte ie-ni kaet-ta-**ka** wakara-nai.
Self-Nom/Gen how home-to return-Past-Q know-Neg
'I have no idea how I got home.'

If *wh*-movement is the crucial trigger of the NGC in Japanese, just as French Stylistic Inversion is, then the unacceptability of these examples will be left unexplained. Hence, we have to conclude that Watanabe's proposal, even if it could have been legitimate as the syntactic structure of the NGC in the early 20th century or before, is not legitimate as the syntactic structure of the present-day NGC.

4.3 Hiraiwa (2002, 2005)

In the context of discussing the NGC without an adnominal clause, Hiraiwa (2002) illustrates an example like (37), and argues that the NGC in Japanese is licensed not by the functional head D but by the Complementizer with a special adnominal inflection which has been called the *rentai-kei* (or adnominal form) in the traditional Japanese linguistics, and which is represented as C_{ADN}:

(37) Hi-**ga/no** kureru niturete, kyaku-wa hette-it-ta.
Sun-Nom/Gen set as customer-Top decrease-go-Past
'As it was getting dark at nightfall, the number of customers decreased.'

However, putting aside the evaluation of Hiraiwa's CP-analysis of the NGC with the special adnominal inflection on C (see for example, Maki and Uchibori (2008)), its application to examples like (37) is clearly problematic in at least two respects: first, in the modern Japanese, the special adnominal inflection has almost totally declined, and it only remains in the category of adjectival nouns and a few tokens of adjectives, as shown in (38a, b) and (39a, b), respectively (cf. Nishiyama (1999)):

(38) a. Kare-wa kenkoo **dearu**/**da**/***na**.
He-Top healthiness is.CON/iis.CON/is.ADN[15]
'He is healthy.'

[14]See Kikuta (2002) for argument against this view of Watanabe's (1996).

[15]CON is the abbreviation of the conclusive inflection on a verb/adjective, or "syusi-kei" in the traditional Japanese linguistics. ADN is the abbreviation of the adnominal form of a verb/adjective. *Da* is the contracted form of *dearu*.

b. kenkoo-**na**/**dearu**/*__da__ hito
helthiness-is.ADN/is.CON/is.CON man
'a healthy man'

(39) a. Kono heya-wa ooki-**i**/*__na__.
This room-Top large-is.CON/is.ADN
'This room is large.'
b. ooki-**i**/**na** heya
large-is.CON/is.ADN room
'a large room'

The typical example in which the adnominal inflection licensed a Genitive subject was something like (3b), in which a nominalized clause licensed a Genitive subject without any nominal head. However, this type of the GSC totally disappeared in the early 20th century.

Second, as argued in Maki and Uchibori (2008), there is another way to deal with examples like (37) (and (33)) without assuming that the adnominal C is the licensor of the GSC. We will show how their argument goes in the next subsection.

4.4 Maki and Uchibori (2008)

Maki and Uchibori (2008) put forth the Empty NP analysis of the NGC, according to which an empty nominal can be postulated as the licensor of the Genitive subject. Now, let us review how this analysis can solve the problems with Hiraiwa's (2002), without inducing another problem.

First, Maki and Uchibori (2008) argue, against Hiraiwa (2002), that the GSC, which appears to be CP that is not adnominal, as in (37), is actually a NP headed by an empty noun, as in (40a). A support for this claim comes from the fact that (40a) can (potentially marginally) alternate with (40b):

(40) a. Hi-**ga/no** kureru φ_N niturete,
Sun-**Nom/Gen** set as
b. Hi-**ga/no** kureru no niturete,
Sun-**Nom/Gen** set Nz[16] as

If in (40a) there is an empty counterpart of the overt nominalizer in (40b), not only is it unnecessary to assume that the diachronically almost totally declined adnominal inflection on C is the licensor of the Genitive subject, but we can also simplify the category selection by the postposition *niturete* 'as,' as we can simply state that *niturete* c-selects a noun phrase, rather than stating that a postposition *niturete* c-selects CP or NP. Not only (40a) but also other instances presented by Hiraiwa (2002) are at least as simply explained in Maki and Uchibori's alternative analysis as Hiraiwa does.

The fact that a comparative clause can license a Genitive subject is also explained along the same lines. Thus, Miyagawa (2011: 1270) argues that (33) can have the same meaning as (41), where the formal noun *hodo* 'degree' or *no* 'one' is arguably an overt realization of the empty nominalizer:

(41) Taroo-wa [Hanako-ga/no yonda **teido/no** yori] takusan-no
Taro-TOP [Hanako-Nom/Gen read **degree/one** than] many-Gen
hon-o yonda.
book-Acc read
'Taro read more books than Hanako did.'

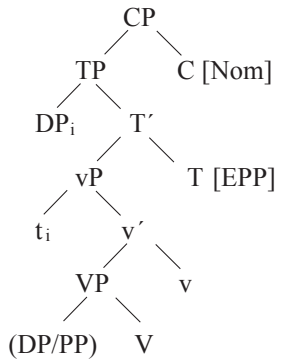
Therefore, not only Hiraiwa's (2002) analysis but also Watanabe's (1996) would lose its strongest piece of empirical evidence.

4.5 Miyagawa (2011)

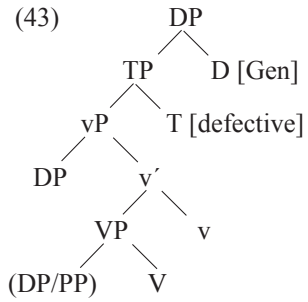
Essentially speaking, Watanabe (1996) and Hiraiwa (2002) claim that the NGC is an instance of free alternation. By contrast, Miyagawa (2011) claims that the two morphological realizations of Case in an adnominal clause stems from different syntactic structures. More specifically, Miyagawa (2011) identifies the GSC as TP headed by a defective T, while the NSC is CP with a non-defective T. This difference is schematized in (42) and (43):

[16]Nz is an abbreviation of "nominalizer." We may refer to it as "formal noun."

(42)



(43)



Given this proposal, the Nominative subject, which is base-generated inside vP, must move to [Spec, T] in order to check the EPP feature on T inherited from C, while the Genitive subject, which is also base-generated inside vP, cannot move to [Spec, T] but remain in situ. Miyagawa also claims that the T in (43) is not selected by C but by D and that it is a *defective* tense, which must be aspectually limited to stative interpretation and must have its temporal reference determined by the matrix T, just like the T in an ECM complement.

In this structure, the Genitive Case is licensed by the D that selects T, just like the Accusative Case in the ECM complement is licensed by the matrix v (cf. Chomsky (1981)). And the Genitive subject can take scope in DP (cf. Miyagawa (1993)), just like the Accusative subject of the ECM complement can take scope in the matrix clause, which explains the scope ambiguity of (44b) versus the unambiguity of (44a):

(44) a. Someone thinks that every student failed the test. (some > every)
b. Someone wants to order every item in the catalogue. (ambiguous)

The fact that the Genitive subject is more likely to occur with an adjective and a stative verb than with an unergative or transitive verb, a generalization observed by Kim (2009), can also be subsumed under the defectiveness of the tense. Kim looked at four novels from the 1970s to the 1990s, and from these works she identified 1143 examples of subjects in RCs or noun–complement clauses. Of these, 572 were Genitive subjects and 571 were Nominative subjects. Kim classified the 1143 examples of Nominative and Genitive subjects in terms of what type of predicate they occur with. It then turned out that as much as 91% of the adjectival predicate occurred with a Genitive subject, whereas only 17% of transtive/unergative verbs occurred with a Genitive subject, as in (45):

(45) a. Adjectives: 91%
b. Unaccusatives: 56%
c. Transitive/Unergatives: 17%

Miyagawa argues that this unbalanced nature of adjectives comes from the inherently stative nature of the Genitive subject construction, which results from the defectiveness of its Tense. In support of this hypothesis, Miyagawa observes that when an adnominal clause is headed by a predicate with a past tense morpheme, the morpheme must be interpreted to designate a resultant state rather than a change-of-state, and a manner adverb such as *totuzen* 'suddenly,' which is only compatible with a change-of-state event, is incompatible with the Genitive subject, as in (46):

(46) a. simi-ga/no tuita syatu
taint-Nom/Gen attached shirt
'a shirt on which a taint has been attached'
b. totuzen simi-ga/*no tuita syatu
suddenly taint-Nom/Gen attached shirt
'a shirt on which a taint suddenly got attached'

It is fair to evaluate Miyagawa's (2011) analysis as one step forward, compared with the previous studies of the NGC, such as Hiraiwa (2002), as it is the first attempt to explain a semantic restriction on the possible predicates of an adnominal clause with a Genitive subject. As Miyagawa (2011) also adopts Maki and Uchibori's (2008) empty NP hypothesis, he can also accommodate the existence of an apparently non-adnominal GSC, such as (33) and (37). Moreover, as Miyagawa assumes the GSC to have the structure in (43), which lacks CP, he also predicts that no CP adverb would be compatible with a Genitive subject. This prediction is also borne out:

(47) saiwai-ni Taro-ga/*no yonda hon
fortunately Taro-Nom/Gen read-Past book
'the book that Taro fortunately read'

As all these facts escaped the previous analyses, there is no doubt that Miyagawa's (2011) "defective Tense" theory has many advantages. However, it is not sufficient as it stands, since it cannot accommodate any fact about diachronic change, including what we observed in Sect. 3. In particular, in the examples of written texts in the late 19th to early 20th centuries we can find a lot of examples with one or more of the following properties, all of which would be ruled out in Miyagawa's (2011) theory. A fact which a theory predicts to be ungrammatical but is actually acceptable would be a serious counterexample for the theory:

(48) a. Genitive subjects with an overt complementizer (or an adnominal inflection)
b. Genitive subjects with a transitive or unergative eventive predicate that denotes a semelfactive event
c. Genitive subjects and a predicate intervened by more than one adverb or internal arguments
d. Genitive subjects that co-occur with an Accusative object

(48c) and (48d) are illustrated in (49a–e), where each intervener is underscored:

(49) a. Tanin-**no** muchuu-ni-natte kitanai koto-**o** yat-te-iru-no-o
others-**Gen** self-absorbedly dirty thing-**Acc** do-TE-is-Comp-Acc
yoku chuui-site kii-te, kokoro-ni tome-te-oku.
well pay.attention-do listen-and mind-in keep-TE-put
'I will pay attention to, listen, and keep in mind others doing dirty things self-absorbedly.'
(Yukichi Fukuzawa (1897), *Fukuou Jiden*, p. 58)

b. Heegeru-**no** Berurin-daigaku-ni tetugaku-**o** kooji-taru toki,
Hegel-**Gen** Berlin university-at philosophy-Acc lecture-ADN time
'At the time when Hegel lectured on philosophy at Berlin University,"
(Soseki Natsume (1908) *Sansiro*, p. 45)

c. Sansiro-wa Hirota sensei-**no** seiyoo-no gakoo-no na-**o**
Sansiro-Top Hirota Prof.-Gen Europe-Gen painter-Gen name-Acc
takusan sitteiru-no-ni odoroita.
many know-Comp-Dat be.surprised-Past
'Sansiro was surprised how many names of the European painters Prof. Hirota knew.'
(Soseki Natsume (1908) *Sansiro*, p. 171)

d. Watashi-wa tada sono kyoofu-no hageshii hyojyo-**no** jibun-no
I-Top just that fear-Gen strong complexion-**Gen** self-Gen
kokoro-ni-mo onaji tuyosa-de hansha-sita-no-o kanjita-nodesita.
Mind-to-also same strength-with reflection-do-Past-Comp-Acc felt
'I just felt his strong complexion of fear reflected on my mind too with the same strength.'
(Naoya Shiga (1913), *Fan-no Hanzai*, p. 240)

e. Katahaba-no hiroi, minotake-**no** gun-**o** nuita
breadth.of.shoulder-Gen wide stature-Gen group-Acc outgo-Past
takumasii oo-otoko
stout giant.of.a.man
'A broad-shouldered, stout, big man who is also far taller than other members of the men'
(Ryunosuke Akutagawa (1916), *Imogayu*, p. 39)

Judging from these examples, we need to assume that at least those writers who wrote in the late 19th to early 20th centuries had the grammar that allowed the co-occurrence of a Genitive subject and an Accusative object or the intervention of one or more constituent between a Genitive subject and a predicate, and that some microparametric change occurred between the generation and the subsequent generation who came to disallow these instances (cf. Harada (1971, 1976)). However, Miyagawa (2011) says nothing about how he should explain the language change that clearly took place in the last 100 years.

4.6 An interim summary

To sum up the argument up to this section, we have shown that the syntactic environment in which the NGC is licensed has undergone a clear parametric change in the last 100 years or so. And as if they are going to deal with the before and after of the parameter setting, Hiraiwa (2002)/Watanabe (1996) and Miyagawa (2011) have proposed the

CP analysis (which is in affinity with examples like (49a–e)) and the D-TP analysis (which is in affinity with examples like (46b) and (47)), respectively. Relatedly, Maki and Uchibori's (2008) Empty NP analysis can be adopted as a way to accommodate cases of Genitive subjects that occur in a non-adnominal clause, and Miyagawa (2011) has adopted their analysis in accommodating apparent counterexamples to his 1993 analysis of Genitive subjects. However, neither of them has mentioned anything about the diachronic change originally pointed out by Harada (1971, 1976), and this is a serious problem for everyone that has tried to explain the syntactic properties of the NGC.

Furthermore, Tables 8 to 11 show that the frequency of a Genitive subject clause that co-occurs with an unaccusative or passivized eventive verb has been decreasing in the last 100 years. In fact, Niikuni, Wada and Ogawa (2017) and Ogawa, Niikuni and Wada (2017, 2018a, b) show, on the basis of a large-scale Web-based survey targeting hundreds of native speakers who were born, raised, and now living in the metropolitan areas and who belong to one of the three age groups (roughly, those in their sixties to seventies, those in their forties to fifties, and those who are in their twenties to thirties, as of the years 2016–2018), that the acceptability of these types of eventive sentences has been lower and lower for younger age groups, and that they are less acceptable than a Genitive subject co-occurring with the purely stative predicate for all the age groups.

Harada (1971) postulated Dialect A and Dialect B for those who were in their forties and twenties, respectively, some forty five years ago. Given these facts, however, the binary-valued parameter seems insufficient in explaining the ongoing language change.

For these reasons, in the next section, I will propose a more fine-grained, microparametric theory of the NGC which can explain the ongoing language change.

5. A Microparametric Explanation of the Language Change

What can be seen from the Japanese corpora about the development and declination of the morphological Cases *ga* and *no* are roughly divided into three stages:

(50) a. the first stage: the morphological Cases *GA* and *NO* marked Genitive Case, which occurred both in a subordinate clause and a noun phrase, whereas the Nominative Case was phonetically empty. (i.e., before the 12th century; cf. Kinsui, *et al.* (2011) for a relevant discussion)
b. the second stage: the division of labor between *GA* and *NO* took place, where *GA* was reanalyzed as the exclusive Nominative Case morphology and spread into the matrix clause, and *NO* was reanalyzed as the exclusive Genitive Case morphology for the subject of a noun phrase and an adnominal clause; at this stage, *NO* as the Genitive Case marker was as frequently used as *GA* as the Nominative Case marker. (i.e., between the 12th and 19th centuries)
c. the third stage: the Genitive subject of an adnominal clause has been more and more declined by narrowing its distribution. (i.e., after the 20th century)

I propose that in each of the hypothetical three stages, the functional categories D and C had the following syntactic properties, as far as Genitive Case licensing is concerned:

(51) a. the first stage: there was no separation between D and C but instead, there is a single mixed functional category D/C, which licensed the Genitive Case on the subject of a *nominalized* clause, an adnominal clause, and a noun phrase.[17]

[17]An anonymous reviewer asks if the D/C amalgam is observed in the matrix clause as well, and if there is a morphological realization of D/C. For this question, I tentatively suggest that the *jun-tai-setu* ("pseudo-adnominal clause") may be one such candidate, which could also occur in the matrix clause, as in (i) (see also (7)):

(i) Oi-taru otoko-**no** ne-madoi-**taru**.
grow.old-ADN man-Gen sleep-stray-AND
'An old man has been half asleep.'
(Makuranosoosi (1001), 00043)

Or, the *ku*-inflection on a verb, as in (ii), another kind of classical nominalizer in Japanese than the adnominal inflection, may be another candidate:

(ii) Housi-**no** omowa-**ku**, .'…'.
Buddhist.mok think-nominalizer
"The Bhuddish monk thought, '…'" (Konjyaku Monogatari (1100), 29009)

A third possibility could be found in the present-day Hichiku dialects of Japanese, in which a Genitive subject is also possible in the matrix clause, under certain sentence-final particles; this usage of the dialect can be argued to be a relic of the grammatical options of the classical Japanese:

(iii) Chuugokugo-ba Taro-ga/**no** hanashi-ta-bai.
Chinese-Acc Taroo-Nom-Gen speak-Past-SAP
'Taro spoke Chine.' (Kumamoto dialect) (Kato (2005: 26))

Actually, the Hichiku dialects are spoken in wide areas of the Northern Kyushu district of Japan, including Fukuoka, Saga, Nagasaki and Kumamoto, and there seem to be many dialectal (and idiolectal) variations amon these, so we will not go into the details of the comparisons. See also Hatsushima (1999), Yoshimura (2006) and Sakai (2013) for relevant discussion.

b. the second stage: the mixed functional category D/C split into D and C, there occurred two subtypes of the functional head C, i.e., C_{ADN} and C_{IND}, and concurrently there were two subtypes of *NO*, one licensed by the (adnominal inflection on) C_{ADN} and the other licensed by the functional head D_{GEN}. This stage is divided into several sub-stages, in terms of whether the C_{ADN} is morphologically realized as an adnominal inflection or as a nominal complementizer *no*. (cf. Tables 3 and 4)
c. the third stage: the adnominal inflection on the C_{ADN} totally disappeared and was replaced by a nominal complementizer *no, and* the nominal complementizer *no* D_{GEN} have turned out to be the only licensor of a Genitive Case. This stage will be divided into several sub-stages, in terms of what functional category D_{GEN} can select as its complement.

With the distinction among the three stages, I have little to say about the first and second stages, so after a few words about the first two stages, most of this section will be focused on a detailed discussion of the third stage.

5.1 The first stage, with the mixed functional head C/D

Synchronically, even if we limit our focus on Asian languages, there are many languages in which some or many of the subordinated clauses which would be verbal in English are nominalized (see Hale (2002), Kornfilt and Whitman (2008), Miyagawa (2011), Yap, Grunow-Hårsta and Wrona (2011) and Gertner (2012), Maki, Bao, Bao and Hasebe (2015), among others, for the typology and diachrony of Asian languages). Arguably, the first stage of Japanese was analogous to some of languages which utilize suffixation to nominalize a finite clause (e.g., Turkish, Korean, Mongolian, Manange).

Universal Grammar (UG) dictates that, in Nominative–Accusative languages, C is an extended projection of V (cf. Grimshaw (2006)) which assigns Nominative Case, while D is an extended projection of N which assigns Genitive Case (cf. Miyagawa (2011)). At the first stage in (51a), however, as the verbal nature of C on the C/D complex is immobilized by the conflicting nominal nature of D, so as to avoid a categorial conflict. As a result, even if there are two morphological Cases *ga* and *no* UG has prepared for a grammatical subject of a verbal and nominalized clause, respectively, they were both realizations of Genitive Case that was assigned by the C/D complex, and there was no overt Nominative Case morphology. Thus, a morphological opposition was not between *GA* and *NO* but *GA*/*NO* and "ϕ(phonetically zero)" (cf. Kinsui, *et al.* (2011: 95)):[18]

(52)

	C	C/D	syntactic environment
Nominative	ϕ	==	matrix clause
Genitive	==	ga/no	subordinate clause & NP

5.2 The second stage, with the emerging division of labor between *GA* and *NO*

At this stage, the mixed functional category D/C split into D and C, and there occurred two subtypes of the functional head C, i.e., C_{ADN} and C_{IND}; concurrently there occurred two subtypes of *NO*, one licensed by the (adnominal inflection on) C_{ADN} (cf. Hiraiwa (2002, 2005)) and the other licensed by the functional head D_{GEN}. C_{IND} is the licensor of the morphological Nominative Case *GA* as Nominative. There also occurred another type of D that does not license a Genitive Case, just like the definite determiner *the* in English. Hence, there were two subtypes of C and two subtypes of D in total at this stage.

In the former half of this stage, C_{ADN} was morphologically realized as an adnominal inflection, though in the Edo period there appeared a nominal complementizer *no*, which we represent as C_N, and it began to replace the adnominal inflection on a verb (V+*keru*, V+*taru*), an adjective (A+*ki*), and adjectival noun (AN+*naru*), which caused the entire decline of adnominal inflection (cf. Tables 3 and 4).[19] Unlike the adnominal inflection, the C_N could not license a Genitive Case, but it could be selected by a phonetically empty D_{GEN}, and hence it appeared that it continued to license a Genitive Case.

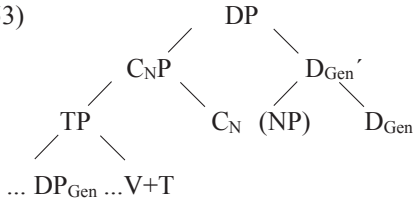
5.3 The third stage, after the late 19th century

Suppose that in the beginning of the third stage a Genitive Case was licensed in the following syntactic structure, at least in its beginning:

[18]The same anonymous reviewer also asks how the picture in (52) fits in the received knowledge in the traditional Japanese grammar, in which the *ga*/*no* difference in subject is based on how the speaker/writer evaluates/honors the subject. It is known that *no* is marked for a subject to which the speaker gives respect, but I have nothing to say about the minor distinction in usage between *ga* and *no* in the classical Japanese. See Ohno (1977), Nomura (1993a, b), and Yamada (2000) for a relevant discussion about *no* and *ga* in the classical Japanese. See also Kato (2005) for the similar preference for *no* in the context of honorifisation for the subject in the present-day Kumamoto dialect of Japanese.

[19]This stage may be comparable to the loss of V-to-I-to-C movement and emergence of *do*-support in the late middle English, due to the decline of inflection. See Sect. 6.

(53)

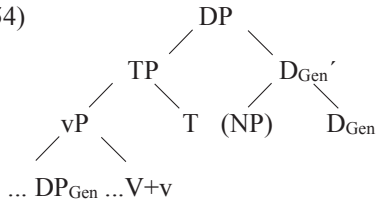


As instances of the C_N, the Japanese grammar in its early decades of the third stage, allowed not only *no* but also *ka* and *toiu*, and this is why examples like (14a–c) and (35a–c) were available in the late 19th to the early 20th century.

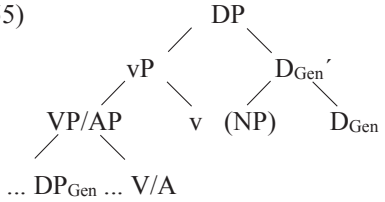
Soon, however, *no*, *ka* and *toiu* came to establish its unique categorical nature as C_N, C_Q and $C_{Appositive}$, respectively. Thereafter, no complementizer came to license a Genitive Case in its complement (when the nominal complementizer appears to license a Genitive subject, as in the cleft construction of which the focus is a NP or in the complement of perception verbs such as *miru* 'see' and factive verbs such as kuyamu 'regret,' the C_NP is selected by the empty D_{GEN}, which licenses a Gentive Case, as in (53)).

In the third stage, it is proposed that at least three microparametric changes in the selectional restriction of D_{Gen} have been occurring in terms of four different micro-cues (or treelet; cf. Fodor (1998)), among which the micro-cue with the smallest structure (= (56)) could be the default value, due to the Subset Principle or the economy principle, and the larger ones could only be learned by children only if there is positive evidence in the input available for them. The four variations are schematized in (53) to (56):

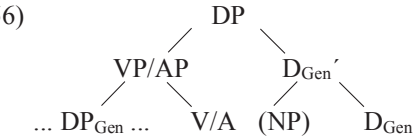
(54)



(55)



(56)



Among these four options, which is chosen by a language-learning child as the structure of his or her GSC is partially dependent on the input data available for the child. Thus, in one extreme case, if a GSC headed by an overt complementizer is contained in the input data for a child, he or she will fix the value of the microparameter as (53). In the other extreme case, if a GSC in the input data for a child is always headed by a stative verb or adjective in an adnominal clause, among the four logically possibilities between (53) and (56), an economy principle will force the child to choose (56) as the only grammatical option of his or her GSC.

When I say "an economy principle" here, what I have in mind are (57) and (58):

(57) … children are economical in their production and will not produce an element, perform a movement operation, or build syntactic structure, unless there is clear evidence for it in the input. (Westergaard (2014: 31))

(58) The Minimal Structure Principle (MSP) (Bošković (1997: 25)) Provided that lexical requirements of relevant elements are satisfied, if two representations have the same lexical structure and serve the same function, then the representation that has fewer projections is to be chosen as the syntactic representation serving that function.

(57) is proposed by Westergaard (2014) for explaining a certain type of production errors language-learning children tend to make. However, (58) is not proposed as a principle that work in the course of language acquisition but as a principle an adult native speaker uses in choosing one out of the potentially ambiguous synchronic structure of an expression in their native language. Hence, we need some qualification.

The MSP works in cases like (59a, b), where there is no overt complementizer in a relative clause and it can potentially be analyzed either as CP with an empty C or IP without CP, and forces a native speaker to choose a more economical structure in (59b):

(59) the man [John likes *t*]
a. the man [$_{CP}$ OPi [φ_C [$_{IP}$ John likes t_i]]] (OP is moved to [Spec, C])
b. the man [$_{IP}$ OPi [$_{IP}$ John likes t_i]] (OP is adjoined to IP)

Given that the structure of (59) is potentially ambiguous between (59a) and (59b), the MSP forces the structure in (59b) to be chosen as "more economical," because (59a) and (59b) have the same lexical structure (i.e., phonological realization) and serve the same function (because a complementizer is semantically vacuous) (59b), which contains only IP, has a smaller number of functional categories than (59a), which contains both CP and IP.

Although (57) and (58) are based on different orientations, I believe that they share the same spirit in that (58) can also be reinterpreted as a principle that works in the course of language acquisition and parameter setting, in such a way that if a child who is exposed to a construction of which the typical word sequence he or she can analyzes ambiguously (for example, when a GSC could be analyzed as CP, TP, or VP) is led to disambiguate the unmarked syntactic structure of the construction to the smallest possible structure that is compatible with the input data, among the options innately given to them as treelets.[20]

Recall here that the possible types of GSC have been diachronically been narrowing even in the third stage: from the late 19th century on. For example, the GSC in which an adverb or an Accusative Case-marked object intervenes between a Genitive subject and a predicate was available (even though infrequent) 100 years ago, although such a word sequence is totally unavailable for the children who were born later than the 1970s. Therefore, let us propose (60) as the acquisition procedure of the GSC:

(60) a. A GSC is potentially four-way ambiguous structurally.
b. The default value for the GSC is the minimal structure in (56).
c. If the input data available for a language learner contain a GSC which requires a higher functional head such as C, T, and v, different structures of a GSC ranging from (53) to (55) are going to be acquired by a child.
d. The corpus data show that both the structural complexity and variability of the GSC have been narrowing from (53) to (56), and accordingly, the younger generations are likely to adopt a smaller structure for the GSC.

For ease of exposition, let us refer to those who choose the four different structures for the GSC as Dialects A to D speakers:

(61) a. Dialect A: those who adopt (53) as the unmarked structure of their GSC.
b. Dialect B: those who adopt (54) as the unmarked structure of their GSC.
c. Dialect C: those who adopt (55) as the unmarked structure of their GSC.
d. Dialect D: those who adopt (56) as the unmarked structure of their GSC.

Among these, I propose that Harada's (1971) Dialect A and B are identified with the Dialects A and B in (61), respectively. More specifically, given the recent generative syntactic assumptions about structure building (i.e., external merge) and movement (i.e., internal merge), we can reasonably argue that the types of GSCs available for Harada's Dialect A speakers can be identified with those in which the functional head D selects CP as its complement, whereas the types of GSCs available for Harada's Dialect B speakers can be identified with those in which the functional head D selects TP/IP as its complement. Moreover, although there were no such native speakers as Dialect C or D speakers at the point when Harada (1971) was published, it has past more than 45 years since then and we can find those native speakers who have acquired one of these dialects. This last point can be proved by the fact that *most, if not all,* of the instances of GSCs available as input data for them when they learned their native language could be generated if they identified the structure of GSC as (55) or (56).

One might wonder if the functional head D can have four different options of c-selection as shown in (53) to (56). Given that the GSC is a kind of relative clause (or nominal complement clause), which is a kind of finite clause, one might suppose that it must be at least as large as TP. However, as far as relative clauses are concerned, there are at least four different options in English too, as shown below:

[20]According to Cournane (2016: 3), who is a proponent of the Child Innovator Approach (CIA), "CIA theories all share the assumption that the child uses universal guidelines to posit the simplest structure necessary to capture the facts of the input and in doing so occasionally ends up with a grammar that diverges from the input grammars." Essentially, my claim in the text is along this proposal in the CIA.

(62) a. a man *(that) came (= as large as CP)
b. a man (that) she met (possibly, CP or TP; cf. Bošković (1997))
c. a man (*that is) knowing the rumor (possibly, vP; cf. Williams (1975))
d. a man (?that is) awake (?now) (possibly, AP; cf. Kayne (1994))

In (62a), where the subject is relativized, the overt complementizer cannot be omitted, which means that the relative clause in this case must be CP. In (62b), where a non-subject is relativized, the overt complementizer is optional. When there is no overt complementizer, the relative clause in this example can be TP; in fact, given the MSP, it must be TP. In (62c), which is a reduced relative clause (RRC), both an overt complementizer and an overt copula *be* verb must be obligatory omitted, which means that the RRC must be as small as vP (cf. Williams 1975). In (62d), the so-called post-nominal predicative adjective is in continuum to the RRC, but the former lacks inflection (including *–ing*) altogether and neither an overt complementizer nor an overt copula nor a temporal adverb naturally co-occur, which means that the post-nominal predicative adjective is arguably a kind of relative clause of which the category is bare AP (cf. Kayne (1994) for an IP analysis of it). Given that all these four post-nominal "modifying" clauses are a kind of relative clause which are different from each other essentially in terms of their categorial size, it can be argued that there is a continuum of relative clauses that ranges from CP to AP and (62c) and (62d) can be referred to as a tenseless relative clause, or "small relative clauses." My claim here is that while (62a–d) are synchronic variants of relative clauses, (53) to (56) are their diachronic counterparts. In other words, the only difference between (53) to (56) and (62a–d) is that, while (62a–d) can co-exist synchronically as different constructions (or different micro-cues or treelets) that happen to coexist as feeding different functions, (53) to (56) do not co-exist synchronically in the particular grammar of a single person, as each of them is a result of a different setting of a single parameter.

In the following subsection, I will show how and why the syntactic size of the GSC has been shrinking in the last 100 years or so, how each of the Dialects A to D is acquired by a child who was born in different time periods, and how each of the four dialect speakers (as adults) are going to react the various types of GSCs in acceptability judgment tests. In developing our argument, we will see whether and how the relative frequency of a construction affects the acceptability judgment of the construction by native speakers.

5.3.1 Positive evidence for a CP structure

In this subsection, I will first take a look at the synchronic relation between the syntactic size of the GSC and the possible functional elements that could occur in it, in order to apply the same criteria to the diachronic facts. The first discussion is related to the positive evidence for the GSC as CP, as in (53).

5.3.1.1. Overt complementizer

First, if a clause has an overt complementizer, it is evident that the clause is as large as CP. The typical instances of complementizers in Japanese are subordinators of a complement clause such as *to* 'that,' *ka* 'C_Q,' *kadouka* 'whether,' *toiu* 'that$_{(appositive)}$,' *tono* 'that$_{(appositive)}$,' *no* 'that$_{(nominal)}$.' In the Japanese of 100 years or so ago, however, not only these complement-introducing complementizer but also some, if not all, of the subordinators that introduce an adverbial clause such as *ba/ra/nara* 'if,' *kara/node* 'because,' *keredo/kedo/noni/ga/ni* 'though,' *ato(de)/kara* 'after,' *mae(ni)* 'before,' *toki(ni)* 'when,' *aida(ni)* 'while,' and so on, which we assume belong to C, could license a Genitive subject.

A GSC requires a nominal category to which it adds, and a subordinator essentially introduces a clause rather than a noun phrase. Hence, it is surprising if some of these subordinators can license a GSC. At least three reasons are conceivable for why this is possible: (i) the verbal or adjectival predicate adjacent to the subordinator has an adnominal inflection; (ii) they are adnominal (and the nominal element is sometimes not phonetically overt); and (iii) the subordinator itself is nominal as well as verbal.

Among these, (i) is the most classical case, as this was the only pattern of Genitive subject being licensed in a clause other than a relative clause up the Edo era; up to the era, whether the clause is adnominal or not, the predicate that could have a Genitive subject had an adnominal inflection (when there is an overt nominal, the adnominal clause was referred to as the "*rentai*" clause, and when there is no overt nominal, the clause was referred to as the "*jun-tai* (pseudo-nominal)" clause. We continue to assume with Hiraiwa (2002) that the adnominal inflection was on the head of CP, so that the adnominal and pseudo-nominal clauses were syntactically CP.

(ii) is illustrated by a relative clause and a noun complement clause. The latter began to occur in the mid of the Edo Era and has been increasing since, as shown in Table 4 and Fig. 4. Among these, *no* is the most typical subordinator that introduces a GSC, but there are also formal nouns that can or must select a complement clause in which a Genitive subject can occur, such as *koto* 'fact,' *mono* 'thing,' *hito/mono/kata* 'person,' *hou* 'direction,' and so on, which we will turn to in Sect. 5.3.1.2.

The most typical instances of (iii) are illustrated by the subordinators such as *ato(de)* 'after,' *mae(ni)* 'before,' *toki/ori* 'when,' koro 'around when,' *aida* 'while,' though there are many other subordinators of an adverbial clause which could license a Genitive subject in it, such as *node* 'because,' and *ba* 'if,' and *noni* 'though,' were ceased to do it in the present-day Japanese. Most of these have been decatregorized from a nominal category in the course of grammaticalization, and at some point in language change they had a nominal feature that could license a Genitive

subject. Thus, the subordinator *mae* 'before' was originally a noun meaning 'front,' though it underwent decategorization and assumed another usage as a clause-subordinator; the subordinator *koro* 'around when' was originally combined only with a noun, as in *kodomo-no-koro* 'in one's childhood,' though it underwent decategorization and assumed another usage as a clause-subordinator; the subordinator *aida* is a Japanese counterpart of both *during* and *while* in English,[21] and although it was originally a noun meaning "interval/space," it underwent decategorization and assumed another usage as a clause-subordinator.

As a few marked cases, consider (63a–c), all of which are taken from a famous Japanese novel by a famous writer:

(63) a. Daiichi, densha-**no** tintin naru **node** odoroi-ta.
first.of.all tram-**Gen** ting-ting make-sound **because** be.surprised-Past
'First of all, I was surprised because trams (often) make a sound of ting-ting.'
(Soseki Natsume (1908) *Sansiro*, p. 21)

b. Konban-wa ame-**no** huru **noni** yoku oide-desi-ta.
Tonight-Top rain-Gen fall **in.spite.of** able come$_{Hon}$-Polite-Past
'Despite it being raining tonight, you could come here, couldn't you?'
(Ryunosuke Akutagawa (1920), *Majutu*, p. 43)

c. Hito-furo abi-te hi-**no** kure-yuke-**ba**, …
one-bathing have-and sun-**Gen** set-go-**if**
'If the Sun is going to set while I am bathing in hot water, …'
(Ichiyo Higuchi (1895) *Takekurabe*, p. 80)

Of all the adverbial-clause-introducing subordinators, *node*, *noni*, and *ba* in (63) were far less frequently co-occurring with a Genitive subject even in 100 years ago, compared with temporal subordinators such as *toki/ato/mae/aida*, and so on, they are sporadically but constantly found in some works in the late 19th and early 20th centuries. It may be important to note here that *node* and *noni* are bimorphemic such that *node* is *no* + *de* and *noni* is *no* + *ni*, that *no* here is non-distinct from the nominal complementizer that emerged in the Edo Era, and that *de* and *ni* are the most frequently used postpositions in Japanese. Hence, although *node* and *noni* are reanalyzed as a single morpheme in the present-day Japanese, they could have been a subtype of nominalized clauses, whence they could license a Genitive subject in them.[22] As for *ba*, which introduces a conditional clause, I have no idea why it can license a GSC, despite it being neither nominal nor adnominal.[23] However, there are at least 8 examples of *ba*-introduced GSCs in the same work by Ichiyo Higuchi, which is as little as 40 pages long, so they cannot be dismissed as exceptional.

All in all, in the works published in the late 19th or early 20th centuries, we can sporadically but constantly find a GSC introduced by an overt complementizer, as in (14a–c), (35a–c), and (63a–c), though my own corpus based on 130 books shows that their occurrences have seen steep decreases in their frequency and disappeared almost totally in the 2010s, and even when it was at the highest point, it was less than 70 per million characters:

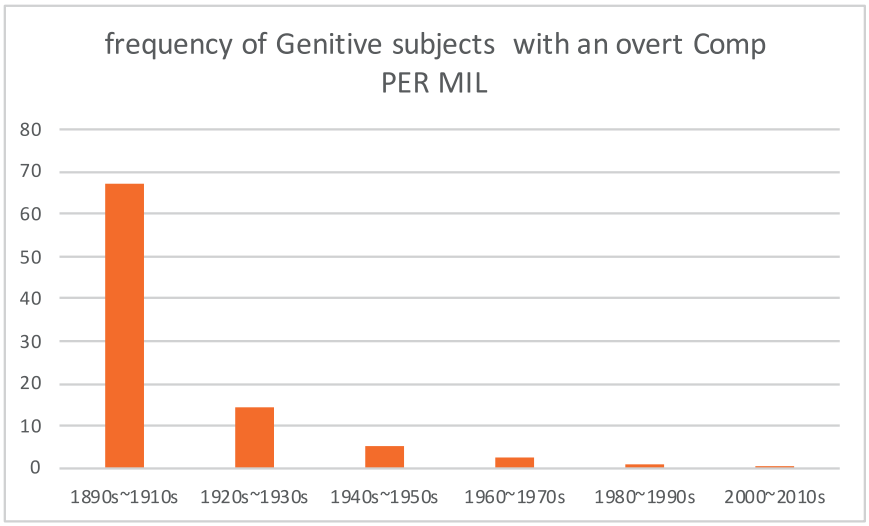


Fig. 12. The frequency of GSCs with an overt complementizer.

[21]Note also the grammaticalization of *while* from N to Conj (Bybee (2015)). See also Williams (1975), who points out that *during* and *while* are semantically identical and differ only in whether the category they select is a noun phrase or a clause, though *while*, but not *during*, selects gerunds.

[22]Relatedly, all the temporal subordinators noted above can be followed by the postposition *ni*, as in *toki-ni/mae-ni/ato-ni/aida-ni*. Hence, we could assume that they are nominalized clauses, where these subordinators are a kind of formal nouns or relics of the mixed functional category D/C.

5.3.1.2. Formal nouns

Formal nouns are nouns which lack a reference and is morphologically a bound morpheme which needs a preceding nominal, adjectival or verbal element, such as *koto* 'fact,' *mono* 'thing,' *hou* 'direction,' *hito* 'man,' *hazu* 'high probability,' and so on.

Many of these formal nouns have been used since the ancient times of Japanese, though some are newcomers that joined to this category as a result of grammaticalization from another lexical category. Thus, *hazu* 'high probability' was originally a common noun that meant 'both ends of a bow,' though it was grammaticalized into a formal noun (modal noun) meaning 'high probability,' after which it began to take a GSC, as in (64), and decades later it also began to take a Nominative subject clause (see Table 12 below):

(64) a. . . . okangae-nasarure-ba suguni ki-**no** tuku **hazu**-dearimasu.
think.over-Hon.-if soon mind-**Gen** attach HAZU-is-Politeness
'If you think over, there is high probability that you immediately notice (it).'
(*Taiyo*, published in 1895)
b. zento-no kibou-**no** arou-**hazu** nasi.
Future-Gen prospect-Gen will.be-HAZU Neg
'There is no probability that we have any prospect for future.'
(*Taiyo*, published in 1895)

As the translations show, the modal noun *hazu* in (64a, b) commonly takes a GSC, though what follows the modal noun differ between the two sentences: *hazu-dearimasu* in (64a) is an affirmative sentence, while *hazu nai* in (64b) is a negative sentence. Although these two types of sentence with the same modal noun *hazu* could start taking a GSC, the former ceased to take a GSC, and in modern Japanese (65a) is totally unacceptable, while (65b) sounds acceptable for some (a NSC counterpart is perfectly possible for both types):

(65) a. Asita, Taro-ga/*no kuru hazu-da.
Tomorrow Taro-Gen come HAZU-is
'There is high probability that Taro will come tomorrow.'
b. Asita, Taro-ga/?no kuru hazu-ga nai.
Tomorrow Taro-Gen come HAZU-Nom Neg
'There is no probability that Taro will come tomorrow.'

Although we will not go into a detailed argument of why there is a contrast between the affirmative and negative sentences including the modal noun *hazu* (cf. Kosuge and Ogawa 2015), it is instrumental to point out two things here. First, as far as a formal noun can or could take a GSC, it began to take one before it began to take a NSC for most of the formal nouns except for *hazu*, and the token frequency of GSCs is, on average, twice as much as that of NSCs. This point is shown in Table 12, which shows a result of my choosing 10 representative formal nouns (FN) as well as *hazu* and searching in *Chunagon* the word sequences of *N-no V FN* and *N-ga V FN*:

[23]Nomura (1993a) refers to the occurrence of a *no/ga* "subject" in the conditional clause headed by *ba* in the classical Japanese as a *Nominative* "subject" in *junsetu-jouken-setuzoku* 'copulative conditional conjunction,' suggesting that there were 185 tokens of this usage of *no/ga* in *Man'yoshu*, with this being the most common Nominative usage of *no/ga* in the literary work. However, he gives no explanation of why such a construction was so common at the time but declined later, except for the short comment that such a usage is "along the continuum with" the basic usage of *no* and *ga* as the subject of a subordinate adnominal clause in classical Japanese in that it occured in a subordinate clause which is not adnominal but adverbial. In fact, he rejects the common assumption that the adnominal inflection licensed the *no/ga* subject by pointing out the presence of so many examples of the *no/ga* subject in the copulative conditional conjunctive clause, and claims that *no/ga* are "undifferentiated" in many senses and they do not prefer either adnominal or adverbial clauses but make the noun phrase to which it attaches "primitively modificational." His claim seems to be based on the prevalent view in the traditional Japanese linguistics that there is no subject in Japanese.

Table 12. The year at which the first token of GNC and NSC occurred in *Chunagon* and the token frequency of the GNCs and NSCs headed by each formal noun.

	the year when a Genitive Subject Clause first appeared	tokens	the year when a Nominative Subject Clause first appeared	tokens
koto（こと）	759	552	986	218
mono（もの）	759	396	1010	317
toki（時）	759	123	1100	49
hou（方）	906	566	1100	9
tokoro（所）	951	1813	1100	91
aida （間）	960	45	1887	13
mono（物）	1001	50	1592	20
koto（事）	1100	305	1100	87
mono（者）	1100	79	1901	9
mae （前）	1100	24	1592	8
ato（後）	1100	4	1100	1
no	1776	472	1779	1488
hazu（筈）	1895	35	1800	52
	1089.692308	343.3846154	1388.230769	181.6923077

Table 12 shows that most of the formal nouns have been used in Japanese as the introducers of the GSC, since hundreds of years before its NSC counterparts began to be used in the history of Japanese.

Second, according to my own database based on 130 books, the frequency of GSCs selected by a formal noun per million characters has been sharply decreasing from 1377 PER MIL to 208 PER MIL (i.e., to approximately one seventh) in the last 120 years, as shown in Fig. 13A below:

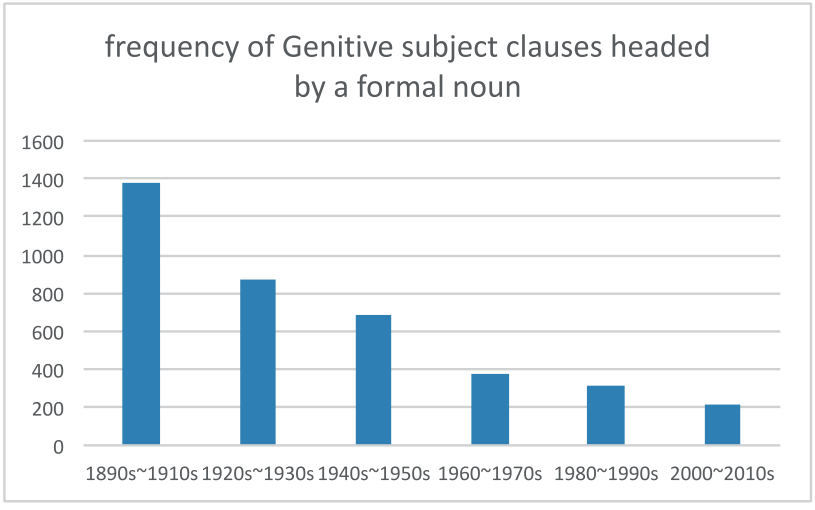


Fig. 13. A: The frequency of GSCs selected by a formal noun (PER MIL).

Relevantly, Table 8 shows that the frequency of the GSCs in total has been decreasing from about 2295 PER MIL to 623 PER MIL in the same period. If we subtract the number in Fig. 13A from this number in Table 8, we obtain the frequency of GSCs that are relative clauses for every two decades, which also has been decreasing from 918 PER MIL to 413 PER MIL in the last 120 years, as shown in Fig. 13B below. However, the gradient of the decrease of the frequency of GSCs that are relative clauses is far slower than the gradient of the decrease of frequency of the GSCs selected by a formal noun:

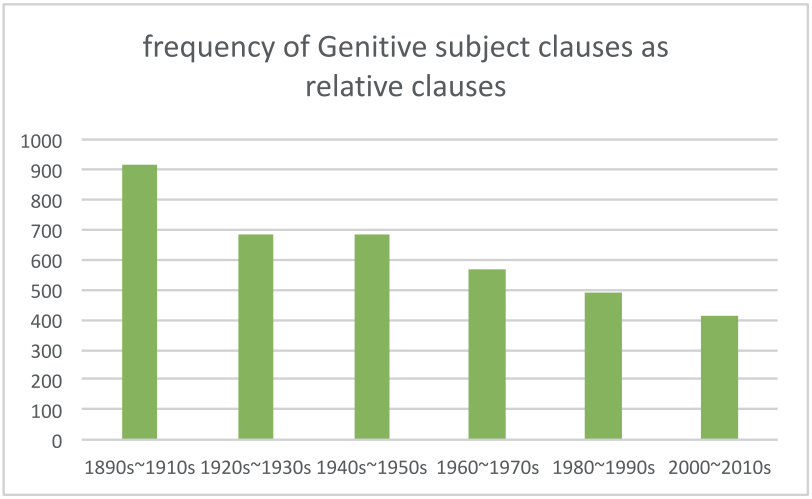


Fig. 13. B: The frequency of GSCs that are relative clauses (PER MIL).

Why is there such a difference in the gradient of decrease between the GSCs selected by a formal noun and the GSCs which are relative clauses?

Note that the relation between a formal noun and its complement is a head-complement relation, while the relation between a noun and a relative clause is a head-modifier relation. It is conceivable that a relative clause stands in relation to the head noun as a head-modifier relation, which is weaker and can be variable, as we saw in (62a–d), so it can relatively easily adapt to a parametric change in the GSC that is independently taking place, whereas a GSC selected by a formal noun stands in relation to the head noun as a head-complement relation, which is more tightly connected than the head-modifier relation (including one between a relative clause and the head noun), so that it is less easily adaptive to a parametric change in the GSC. Suppose on the other hand that the syntactic size of a GSC has undergone at least three steps of parametric change in the last 100 years, as we have proposed in (53) to (56), on the basis of independent change in the input data for children. Given this, many types of formal nouns have become incompatible with a GSC, even if it remains compatible with a NSC, which is uniformly a CP for independent reasons, i.e., a Nominative Case can only be assigned from C (via feature inheritance to T). This may be why the frequency of GSCs selected by formal nouns has been declining more steeply than the frequency of GSCs as relative clauses and some of them have ceased to select a GSC, such as *hazu* in the affirmative context as in (65a).

Alternatively, as an anonymous review suggested to me, we can attribute the difference between formal noun clause and relative clauses to the nature of the structures in (53) to (56). Recall that the structures in (53) to (56), D_{Gen} usually realizes its complement as a head noun and takes a GSC in its Specifier (in the case of a relative clause), but the head noun is parenthesized, which means that if the head noun is unrealized, D_{Gen} turns into a formal noun. However, given that formal nouns have been grammaticalized to D from common nouns, they do not have to remain as D_{Gen} categorically, but they could finally belong to a different category referred to here as *n* or a light noun (a nominal counterpart of *v* or light verb), which does not license a Genitive Case. If the most stable syntactic form of DP is D selecting a noun as its complement, the D that does not select a noun, which typically is a formal noun, will be forced to dectegorize into a light noun, after which it would be able to take only CP as its complement. If it can only take CP, the resulting structure comes to license only a Nominative Case in the CP. Alongside, if most and more types of formal nouns have been grammaticalizing from D to a light noun, less and less types of formal nouns will be able to license a Genitive subject clause. Independently, the clause shrinking has been taking place, but the speed of formal nouns decategorizing into light nouns can be faster than the speed of the GSC undergoing clause shrinking. As a result, the frequency of a formal noun taking a GSC may be decreasing shows a steeper decline than the frequency of a common noun taking a GSC (i.e., a relative clause) is, as Figs. 13A and 13B show.

We will not choose netween the two alternative analyses here, due to the lack of evidence for choosing either of them strongly. We will leave the issue for future research.

5.3.1.3. Intervention of adverbs

Harada (1971) originally proposes that there are two different idiolects for the GSCs which he calls Dialects A and B that differ essentially in the age of their speakers, and that Dialect A speakers, but not Dialect B speakers, allow a GSC in which an adverb or accusative object intervenes between a Genitive subject and a predicate, as in (66a, b):

(66) a. me-ga/(?*)no nakanaka de-nai sakura-no-ki
sprout-Nom/Gen be-slow-to come.out-not cherry-tree
'a cherry tree which is slow to sprout'
b. Watasi-wa Nixon-ga/(*)no uso-o tuite-iru koto-o satot-ta.
I-Top Nixon-Nom/Gen lie-Acc telling-is fact-Acc realize-Past
'I realized that Nixon was telling a lie.'

	(66a)	(66b)	
Dialect A speakers	OK	OK	(in their 40s or older in the 1970)
Dialect B speakers	?*	*	(in their 20s in the 1970)

Harada carefully selected his 14 informants so as not to avoid any factor related to dialectal region (by selecting only those who are Tokyo dialect speakers) and social dialectal division (by only selecting those in the middle class), and attributed any difference in acceptability of (66a, b) and other examples to the age of the informants: among the 14 speakers, only two were in their forties, and the remaining are either in their twenties or thirties, and those in their forties are both Dialect A speakers. He then concluded that "Dialect A was the majority dialect some forty years ago, although at present Dialect B is the majority dialect among speaker in their twenties," and that "Dialect A is on the edge of losing its status as the majority dialect, and the newcomer, Dialect B, is spreading among the speakers of the Tokyo dialect." (Harada (1971: 34–35))

In the minimalist framework, Miyagawa (2011, 2013) tries to explain the adverb intervention effect in terms of the phase theory of Chomsky (2001). For a subject to precede a VP-adverb such as *nakanaka* in (66a), it needs to move to [Spec, T], and for it be able to move to [Spec, T], T must have an EPP feature inherited from the phase head C. Miyagawa (2011) claims that a GSC does not have a CP but a structure in which D selects (a defective) TP. It is also assumed that no feature inheritance is possible from D to T. Hence, a Genitive subject cannot move to [Spec, T] across a VP-adverb:

(67) a. $[_{CP}$ C $[_{TP}$ DP-Nom … $[$ADV $[_{vP}$ t_{DP} …]]]] (NGC)
↑----------|
b.* $[_{DP}$ D $[_{TP}$ DP-Gen … $[$ADV $[_{vP}$ t_{DP} …]]]] (GSC)
↑-------×---------|

Even if Miyagawa's (2011) explanation is correct as a synchronic analysis of the adverb intervention effect, there is no doubt that such an approach as its stands cannot accommodate the fact, observed in my database based on 130 books, that the frequency of the GSC in which something intervenes between a Genitive subject and a predicate has been decreasing in the last 120 years, as shown in Fig. 14 below:

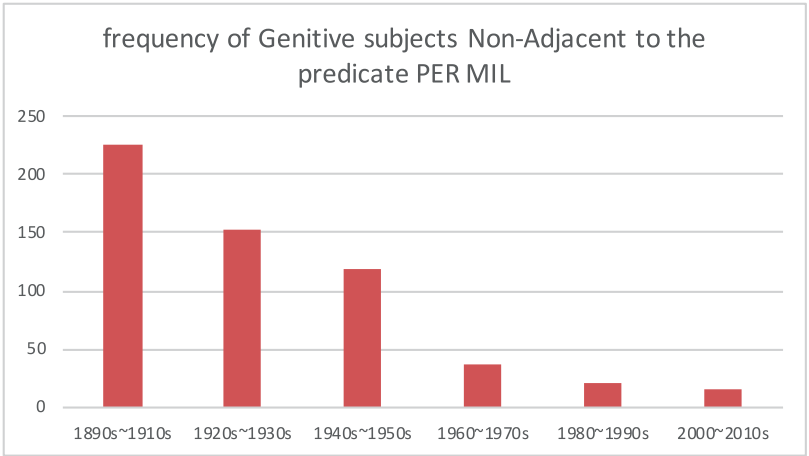


Fig. 14. The frequency of the GSC in which a Genitive subject and a predicate are not adjacent.

Miyagawa's analysis could be extended to account for why the older generations accepted (66a), by assuming that feature inheritance was possible from D to T for them, but such a possibility was lost when some morphological property of either D changed.

(68) a. Dialect A: A Genitive Case feature can be inherited from D_{GEN} to T.
b. Dialect B: A Genitive Case feature cannot be inherited from D_{GEN} to T.

Alternatively, one might assume that the only difference between Dialects A and B would be that while the functional head D of Dialect A selects $C_{GEN}P$ of which the head select TP transitively, while the functional head D_{GEN} of Dialect B directly selects TP. Given this, the diachronic change from Dialect A to Dialect B can again be analyzed as a change in the selectional and featural property of the functional heads D:

(69) a. Dialect A: D_{GEN} selects $C_{GEN}P$, and C_{GEN} can have a Genitive Case feature to be inherited to T.
b. Dialect B: D_{GEN} selects TP, and the Genitive Case feature of D_{GEN} cannot be inherited to T without any mediation of $C_{GEN}P$.

Whichever approach to the diachronic change from Dialect A to Dialect B is on the right track, we need some change in the selectional or featural specification of D.

5.3.1.4. (In)compatibility between genitive subject and accusative object

Now, let us return to (66b), which shows that a Genitive Subject and Accusative Object were compatible for Dialect A speakers but not for Dialect B speakers:

(66) b. Watasi-wa Nixon-ga/(*)no uso-o tuite-iru koto-o satot-ta.
I-Top Nixon-Nom/Gen lie-Acc telling-is fact-Acc realize-Past
'I realized that Nixon was telling a lie.'

This might superficially be an instance of the Intervention Effect as just seen above. However, there is good reason to believe that something additional is involved in this restriction. Before considering this, however, let us review two previous analyses about what we call the "Anti-Accusative Effect": Watanabe (1996) and Miyagawa (2011):

Watanabe (1996) is the first to discuss the "Anti-Accusative Effect" under the Principles-and-Parameters framework since Chomsky (1981). As we reviewed in Sect. 4.2, Watanabe assimilated the "Anti-Accusative Effect" of the GSC to that in French Stylistic Inversion (SI), and provided a unified explanation for them by the Minimal Link Condition. The essence of his proposal that when a Genitive subject in Japanese and a subject in the SI context in French remains in VP in overt syntax, though they need to move to [Spec, T] (or [Spec, AgrS] in his term) to have its special Case checked in covert syntax. However, if there is an Accusative object that must to move to and occupy [Spec, AgrO], the covert raising of the subject to [Spec, T] is ruled out by the Minimal Link Condition, because the DP in [Spec, AgrO] intervenes between [Spec, T] and inside VP.

A potential problem with such an explanation is that such a minimality violation takes place only if the subject that remains inside vP tries to move to [Spec, T/AgrS] covertly, and the same type of movement needs to be able to be circumvented in overt syntactic raising; otherwise, all transitive verb constructions would be ruled out as the minimality violation. However, the fact is that the word sequence of "DP-Gen DP-Acc V" would be as degraded as "DP-Acc DP-Gen V." Hence, it may be hard to attribute the incompatibility of a Genitive subject and an Accusative object to some kind of minimality violation on movement.

Although Miyagawa (2011) continues to adopt Watanabe's assumption that the Genitive subject remains inside vP in overt syntax, he takes a slightly different view from Watanabe's. He adopts the subject-in-situ generalization (SSG) proposed by Alexiadou and Anagnostopoulou (2001) (henceforth, A&A), as in (70):

(70) The subject-in-situ generalization:
By Spell-Out, vP can contain only one argument with an unchecked Case feature.

This generalization rules out a construction where both a subject and an object have a structural Case and both remain in situ in vP. A&A show that evidence for the SGG comes from a variety of languages such as Arabic, Celtic, English, Icelandic, Greek, and French. Now that in the GSC both a Genitive subject and an Accusative object need to have their structural Case licensed by a particular functional head (D and v, respectively), and that both a Genitive subject and an Accusative object remain in situ in overt syntax, the resulting structure would induce a structure that deviates from (70). As evidence for this explanation, Miyagawa (2011) argues that if the structural Accusative Case that co-occurs with a Genitive subject is replaced by a structural Dative Case, the sentence results in the same level of ungrammaticality, though if it is replaced by a PP, the sentence is improved even if it intervenes between a Genitive subject and a predicate:

(71) a.* Taroo-no gakusei-ni san-nin okutta (Jiro-no) hon
Taroo-Gen student-NI 3-CL sent Jiro-Gen book
'the book (of Jiro's) that Taro sent three students'
b. Taroo-no daigaku-ni okutta (Jiro-no) hon
Taroo-Gen student-NI sent Jiro-Gen book
'the book (of Jiro's) that Taro sent to the university'

For independent reasons the NI-marked DP that can license a Floating Quantifier (FQ) should have a structural Case (Miyagawa 1989; 1997), so that (71a) inevitably violates either (70) or the licensing condition on FQs. By contrast, the NI-phrase in (71b) can be PP, as it is the directional argument of *okuru* 'send,' and in this case, in vP there is only one DP whose Case remains unchecked: a Genitive subject. Hence, (71b) satisfies (70). Miyagawa argues that this is the reason for the contrast in acceptability between (71a) and (71b).[24]

Interesting though it is, both Watanabe's (1996) and Miyagawa's (2011) explanations are heavily dependent on the assumption that a Genitive subject does not overtly move to [Spec, T], and this is why it is incompatible with another DP that needs a structural Case licensing in the same clause. They cannot answer why a Genitive subject cannot move to [Spec, T] overtly. In fact, in the word order of (66b), in which a Genitive subject precedes an Accusative object, there is no reason to assume that the subject MUST remain in situ, even if it can.

Therefore, suppose, in line with Miyagawa (2013), that if any element can move to [Spec, T] overtly, the movement is triggered by an EPP feature on T, which needs to be inherited from the phase head C. Given this assumption, the GSC, which Miyagawa (2011) assumes lacks a CP, would not give its T an EPP feature. Hence, the movement to [Spec, T] will be successfully ruled out.

So far so good. However, another serious problem with both Watanabe's and Miyagawa's analyses is that they cannot cope with the fact that in the late 19th and early 20th century, a Genitive subject was compatible with an Accusative object, as shown in (49a–e). Watanabe could account for this fact if he assumed that in the period, the Genitive subject could be able to move to [Spec, T], which would exempt it from causing a minimality violation. On the other hand, Miyagawa's (2011, 2013) theory would have no way to account for it, as far as he continues to assume that a GSC is TP without CP.[25]

Figure 15 below, based on data in my database, is the diachronic change in the frequency of the GSC in which a Genitive subject co-occurs with an Accusative object in the last 120 years:

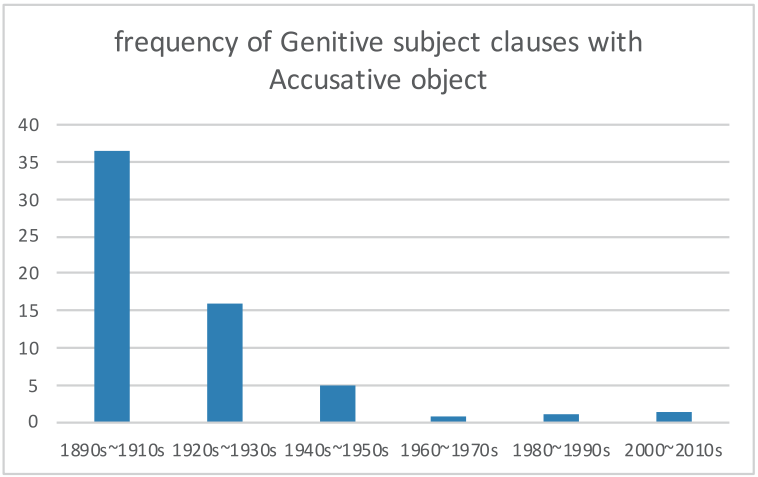


Fig. 15. The frequency of the GSC with an Accusative object.

We have shown that, given either Watanabe's (1996) or Miyagawa's (2011) framework, for a Genitive subject to be compatible with an Accusative object, an overt movement of the Genitive subject to [Spec, T] is necessary, for which CP is necessary. So, it is reasonable to argue that the licensing of both a Genitive subject and an Accusative object in a

[24]On my intuition, (71b) is as unacceptable as (71a). But the matter of idiolectal variation in acceptability judgment is left open here.

[25]Miyagawa (2013) proposes that there is another type of GSC which is licensed by a pair of a weak *v* and dependent tense and such a GSC is also compatible with CP:

(i) Licensing of the non-D genitive (Miyagawa (2013: 11)):
Genitive is licensed in the environment of weak v and:
Negation (Slavic) or dependent tense (Japanese).

However, as a predicate that takes an Accusative object must have a strong *v*, the non-D Genitive is irrelevant to the case in question.

single clause requires a CP. Moreover, we also argued that for a Genitive subject to precede an adverb, an overt movement of the Genitive subject to [Spec, T] is necessary for which CP is necessary. Given these, it is no longer surprising that the sharp decline in the frequency of this construction is quite similar to the sharp decline in the frequency of the GSC with an overt complementizer, as shown in Fig. 12,[26] or the GSC in which a Genitive subject is not adjacent to the predicate, as shown in Fig. 14. Probably, the native speakers who were born in the early 20th century could fix their GSC parameter as in (53), as a certain amount of positive evidence for the CP status of the GSC was available. By contrast, those who were born in the mid of the 20th century or later would have to fix their GSC parameter as in (54), because the frequency of the input data necessary for them to identify the GSC as CP went below the threshold. As a result, for the younger half of Harada's (1971) test subjects, who were in their twenties when the experiment was conducted, the examples of the GSC in which a Genitive subject co-occurs with an Accusative object were ungrammatical for their grammar with a particular value of the GSC parameter. This is why the Dialect B speakers judged examples like (66a, b) as ill-formed.

5.3.1.5. Nominal predicates

Harada (1971) also pointed out that Dialect A speakers, but not Dialect B speakers, accepted a GSC in which a nominal predicate is predicated of a Genitive subject, as shown in (8), repeated here as (72):

(72) titioya-ga/(?*)no dai-ongakka de-atta buturigakusya
father-Non/Gen great musician was physicist
'a physicist whose father was a great musician'

Given what we have argued and a few additional assumptions, we can also attribute this idiolectal variation to the microparametric change from (53) to (54).

The frequency change in the GSC with a nominal predicate is shown in Fig. 16 below. This figure shows that the frequency of the GSCs with a nominal predicate was originally quite low (it was already 20 tokens PER MIL in the 1890s to 1920s), though it sharply decreased between the 1940–50s and the 1960–70s, and in the publications after the year 2000, I found only 4 such instances, all of which were of the following type:

(73) Zibun-**no** kodomo-no koro-o omoikaesi-te-miru to, . . .
Self-**Gen** child-Gen those.days-Acc remember-TE-try Comp
'Looking back to when I was a child, . . .'

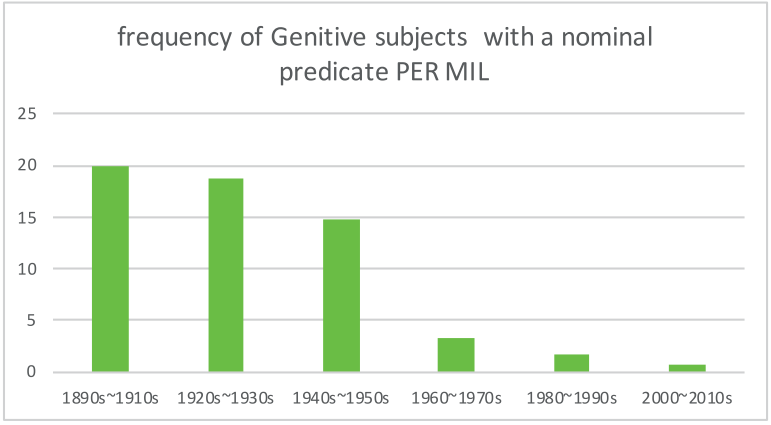


Fig. 16. The frequency of Genitive subjects with a nominal predicate.

[26]Unlike the GSC with an overt complementizer in Fig. 12, the instances of a GSC with an Accusative object can be sporadically found even in the 2010s. However, Almost all the examples in my database can be ambiguously analyzed as ones in which the Genitive DP is not a bona-fide subject of the embedded clajuse but is base-generated in [Spec, D] and modifies the head N directly. Thus, consider (i):

(i) Ginkooka-**no** yuusisaki-no kigyo-**o** ginmi-suru satei-nooryoku
Banker-Gen borrower-Gen company-Acc scrutinize assessment-ability
'Bankers' assessing ability to scrutinize a company to which they loan money'
(Taturu Uchida (2006) *Matiba-no Daigakuron*, p. 142)

In (i), although *ginkooka* 'banker' is the semantic subject of *ginmi-suru* 'scrutinize,' it can also be analyzed as the inalienable possessor of the noun sateinooryoku 'assessment ability.' Hence, it might be the case that CP is unncecessary to generate this type of GSC. See Ochi (2001) and Kikuta (2002) for relevant arguments.

Since the Genitive subject in (73) could be replaced by a Nominative subject, it is reasonably analyzed as an instance of the NGC,[27] but this kind of expression may be regarded as a fixed idiomatic expression in which the subject is a first person pronoun or *zibun* 'self.' If we exclude this type of examples, the last tokens of example of the GSC with a nominal predicate I found were in a book published in 1994, written by Haruhiko Kindaichi, who were born in 1913, and in a book published in 1986, written by Morio Kita, who were born in 1927. Hence, it is reasonable to say that the bona-fide examples of the GSC with a nominal predicate has been absent in a publication later than 1995, and the last such example was generated by someone who was born earlier than the 1930s.

This statement is basically in harmony with what Harada (171) observed in terms of the acceptability judgments task he conducted, and it seems to corroborate our assumption that this type of GSC requires a CP structure in (53).

In fact, this line of reasoning is feasible, since a sentence of which the predicate is nominal has different characteristics than any other category types. These characteristics are summarized as in (74):

(74) a. Nominal predicates are always individual-level predicates.
b. The subject of a nominal predicate always has a focal interpretation (even if the clause is embedded in a noun phrase).
c. Predicate nominals cannot undergo topicalization (contrastive focalization).

Let us consider these points one by one. First, consider (74a). This point is shown by the fact that the subject of a nominal predicate can only receive an interpretation with an exhaustive listing focus, as is always the case with other individual-level predicate in Japanese (cf. Kuno (1973), Kratzer (1996), Diesing (1992)):

(75) a. Otoko-ga heya-ni i-ru. <stage-level predicate>
male-Nom room-at be-Nonpast
'There are men in the room.'/ 'It is men who are in the room.'
b. Otoko-ga kensinteki da. <individual-level predicate>
male-Nom altruistic is
'It is men (rather than women) who are smart./*There are men who are smart.'
c. Otoko-ga risooshugisha da. <nominal predicate>
male-Nom idealist is
'It is men (rather than women) who are idealists.'
*'There are men who are idealists.'

(75a) shows that the subject of a stage-level (verbal) predicate can be interpreted either existentially and neutrally or generically and with an exhaustive listing focus on it, meaning that it is men, rather than women, who are in the room. By contrast, in (75b), the subject of a stage-level (adjectival) predicate can only receive a generic and exhaustive listing interpretation, meaning that it is men, rather than women, who are smart. And (75c) shows that the subject of a nominal predicate behaves exactly like an individual-level adjectival predicate in terms of the interpretation of the indefinite subject.

Diesing (1992) proposes the Mapping Hypothesis and explains the stage-/individual-level asymmetry on subject interpretation in terms of where in the tree the overt subject is base-generated; the subject of a stage-level predicate is base-generated in VP and possibly moves to [Spec, T], whereas the subject of an individual-level predicate is base-generated in [Spec, T] and controls a null pronominal subject PRO in VP, as in (76a, b):

[27] An anonymous reviewer suggests that no in (73) can be interpreted as the possessive marker rather than the Genitive subject, as in "my time of childhood." This could be a possibility, but I have included this type of examples into the GSC with a nominal predicate because the *no* in (73) can alternate with *ga* without any degradation: *zibun-ga kodomo-no koro*. In fact, however, there are some marky instances of *ga*/*no* conversion for which it could be possible to analyze the Genitive subject as the element in [Spec, D], while we can analyze its Nominative counterpart as the element in [Spec, T]:

(i) a. Kodomo-ga/no naku koe-ga kikoeru
Child-Nom/Gen cry voice-Nom hear
'I can hear the voice of a child crying'
b. Kodomo-no/*ga koe-ga kikoeru
Child-Nom/Gen voice-Nom hear
'I can hear the voice of a child'

Only in (ia), where there can be a relative clause CP, can a Nominative subject be licensed, while a Genitive NP can be licensed in both (ia) and (ib). Hence, the Genitive NP in (ia), as well as in (ib) could be the element in [Spec, D]. Then, (ia) is not a bona-fide example of ga/no conversion. See also notes 10 and 24 for relevant comments. If (73) could be analyzed along the same lines, then we can conclude that there appears no example of the GSC with a nominal predicate after the early 1990s.

(76) a. [$_{TP}$ Subj … [$_{VP/AP}$ t_{Subj} V (Obj)]] <stage-level predicate>
↑----------|
b. [$_{TP}$ $Subj_k$ … [$_{VP/AP}$ PRO_k V (Obj)]] <individual-level predicate>
(no raising of the subject)

Now that the subject of a nominal predicate in (75c) behaves just like an individual-level (adjectival) predicate in (75b) in terms of the unambiguity of the indefinite subjects, it is quite natural to assume that the subject in (75c) is also base-generated in [Spec, T], controlling PRO in VP headed by a copula (*da*/*dearu*).

Second, the subject of an individual-level predicate in Japanese has another salient property of only receiving an exhaustive listing interpretation but not a neutral interpretation, as shown in the translations of (75b, c). The exhaustive listing interpretation is a kind of focus interpretation, and the post-copular DP in the cleft construction as in (77) also receive the same interpretation:

(77) It is John that Bill met.

Note that a subject does not always receive a focus interpretation, even if it takes a wide scope with respect to another scope-taking element. Thus, in (78), the existential quantifier *two teachers* in the subject position can take scope over the universal quantifier *every student* in the object position, or vice versa, but even when it takes a wide scope, it does not receive a focus interpretation:

(78) Two teachers seem [*t* to have taught every student].
≠ It is two teachers (and no one else) that seem to have taught every student.

Note also that the subject of a nominal predicate receives an exhaustive listing interpretation even when it is embedded in a nominal complement, and in this respect it differs from the subject of other individual-level predicate, such as (75b):

(79) a. [Otoko-ga kensinteki dearu] koto
male-Nom altruistic is fact
'the fact that men are smart/the fact that it is men that are smart'
b. [Otoko-ga risooshugisha dearu] koto <nominal predicate>
male-Nom idealist is fact
'the fact that it is men that are idealists/*the fact that men are idealists.'
c. Taro-wa [titioya-ga daiongakka dearu] koto-ga ziman da.
Taro-Top father-Nom great musician is fact-Nom proud is
'Taro is proud of the fact that his father (and not his mother or anyone else) is a great musician.'

In (79a), the sentence with an individual-level adjective is embedded in the complement of a formal noun *koto* 'fact,' and the subject can receive a focus interpretation, but such an interpretation is optional. By contrast, in (79b), the sentence with a nominal predicate is embedded in the complement of *koto* 'fact,' and yet the subject can only receive a focus interpretation. The same disambiguation also holds true in (79c). This means that the subject being base-generated in [Spec, T] is a necessary condition but not a sufficient condition for it to receive the exhaustive listing interpretation obligatorily.

Third, (74c) is shown by the following contrast between the verbal and adjectival predicate on one hand and the nominal predicate on the other:

(80) a. Taro-wa, ue-no musume-ga kasikoi.
Taro-Top elder daughter-Nom smart
'As for Taro, his elder daughter is smart.'
b. Taro-wa, kasikoi-no-wa ue-no musume dearu.
Taro-Top smart-Comp-Top elder daughter is
'As for Taro, it is his elder daughter that is smart.'

(81) a. Taro-wa, titioya-ga daiongakka dearu.
Taro-Top father-Nom great.musician is
'As for Taro, his father is a great musician.'
b.* Taro-wa daiongakka-na-no-wa titioya(-ga) dearu.
Taro-Top great.musician-COP-Comp-Top father-Nom is
'As for Taro, it is his father that is a great musician.'

The meaning intended by (81b) is identical to (81a) in that the Nominative DP is focused with an exhaustive listing interpretation, but (81b) is ill-formed with the intended meaning in (81a). This shows that topicalization (or contrastive focalization) of the nominal predicate is impossible. This contrasts with the fact that in (80b), the adjectival predicate can be topicalized.

In order to explain the anti-topicalization restriction on the nominal predicate construction, I will propose that it follows from the obligatory focal interpretation for the subject of a nominal predicate, which is base-generated in [Spec, T], controlling PRO_j in [Spec, D], and is obligatorily moved to the Spec of FocusP (or FocP), as in (82):[28]

(82) a. Taro-wa titioya-ga daiongakka dearu.
Taro-Top father-Nom great.musician is
'As for Taro, his father is a great musician.'
b. $[_{TopP}$ DP_i-wa $[_{FocP}$ $[_{DP} PRO_i$ NP$]_j$-ga $[_{TopP}$ [e] $[_{TP}$ t_j $[_{DP}$ PRO_j $[_{D'}$ NP (predicate) D]]]]]]
↑----------↓

Here, FocP and two tokens of TopP are part of the functional layer in the CP domain (Rizzi (1997)). The sentence-initial topic is base-generated in the Spec of the higher TopP, c-commanding PRO_i in the DP which has moved to [Spec, Foc], since every PRO must have its reference fixed by the locally c-commanding antecedent.

Given the property in (74b) as presupposed, the property in (74c), i.e., the fact that predicate nominals cannot undergo topicalization (= (81b)), follows from the absence of a landing site, since there is no position for the moved topic to occupy between the highest TopP and FocP in (82b).

On the other hand, the Nominative NP in (80a) does not have to receive an exhaustive listing focus interpretation. Hence, it has the option of remaining in [Spec, T]. In this case, the sentence-initial topic, which must locally c-command PRO_i in the DP can be base-generated in the Spec of the lower TopP, and move to the Spec of the higher TopP overtly. Since [Spec, Foc] is not filled yet, the adjectival predicate in (80b) can move and occupy it to receive a contrastive focus interpretation (a kind of topic interpretation), as in (83b):

(83) a. Taro-wa, kasikoi-no-wa ue-no musume dearu.
Taro-Top smart-Comp-Top elder daughter is
'As for Taro, it is his elder daughter that is smart.'
b. $[_{TopP}$ DP_i-wa $[_{FocP}$ $[_{DP}$ kasikoi-no-wa $[_{TopP}$ t_i $[_{TP}$ $[_{DP}$ PRO_i NP$]_j$-ga $[_{DP}$ PRO_j
↑----------↓
↑ $[_{D'}$ t_{AP} (predicate)]]]]]]]
|----------↓

This is why the asymmetry between the adjectival and nominal predicates emerges, even if both are individual-level predicates.

For this explanation to go through, we are led to conclude that the emergence of a nominal predicate (in the GSC) necessarily requires CP. Hence, once the change in the value of the GSC parameter takes place and the D came to select TP rather than CP, the GSC with a nominal predicate became ungrammatical. This is why the frequency of the GSC with a nominal predicate sharply declined in the same way as that of the GSC with an overt complementizer or the GSC that does not satisfy the Adjacency Condition.

In this subsection, we have seen various constructions of the GSC that needs CP. We discussed why all the four constructions (or micro-cues) in (84) have decreased their frequency sharply in the md of the 20th century, in terms of a microparametric change that reanalyzes the GSC from CP to TP that took place around this period. Hence, (84a–d) are the positive evidence for setting the value of the GSC parameter as "CP":

(84) a. the GSC with an overt complementizer
b. the GSC in which an adverb or an argument intervenes between a GSC and a predicate
c. the GSC in which a Genitive subject and an Accusative object co-occur
d. the GSC in which the predicate is nominal

If at least one of these is as sufficiently included in the input data for children as is necessary for them to pick it as a micro-cue, they will be positive evidence for them to set the GSC parameter as "CP," as in (53). However, as all of these input data, originally infrequent in the early 20th century, became less and less frequent, so that children who start from the default value of the GSC parameter = (56), became unable to extend the syntactic size of the GSC as large as CP (although they could extend it to TP). As a result, I claim that the clause size of the GSC began to shrink from CP to TP in the med of the 20th century (see Sect. 6 for a more technical discussion of the relation between language change and language acquisition).

[28]See Nishigauchi (2016) for a relevant discussion on specificational sentences.

5.3.2 Positive evidence for a TP structure

What was discussed in the previous section was no more than an endorsement of Harada's (1971) observation that all these constructions were acceptable for his test subjects who were in their forties but unacceptable for those who were in their twenties. In this section, on the other hand, we will discuss what positive evidence is necessary in order to determine whether the GSC parameter (of which the default value is (56)) is fixed as TP as in (54) or vP as in (55).

5.3.2.1. An individual-level predicate

As implied in the previous subsection, the first type of evidence for fixing the value of the GSC parameter as TP is the GSC in which an individual-level predicate has a Genitive subject, as in (85):

(85) a. otoko-**no** kensinteki na/ dearu koto[29] <individual-level predicate>
male-Gen altruistic ADN/COP fact
'the fact that men are smart.'
b. Taro-**no** kasikoi koto <individual-level predicate>
Taro-Gen smart fact
'the fact that Taro is smart'

The GSC of this type is headed by a formal noun *koto* 'fact,' a true subject-predicate relation is established in the GSC, and the subject is Genitive Case-marked. If all these conditions are met, the Genitive subject needs to be base-generated in [Spec, T], controlling PRO in VP/AP (Diesing (1992)), so that at least as large a structure as TP is necessary. Hence, the GSC parameter is set as "TP" as in (54), if this type of sentence is available as positive evidence for a language-learning child.

It is important to note that, although the predicates in (85a, b) are adjectives, and in this sense non-distinct from examples in (86a, b), (86a, b) are not qualified as positive evidence for them to the "TP" value:

(86) a. Kaoiro-**no** warui otoko
Complexion-Gen bad man
'A man whose complexion is bad (= a man who is pale)'
b. Se-**no** takai otoko
stature-Gen high man
'a man whose stature is high (= a man who is tall)'
c. Ki-**no** mijikai otoko
temper-Gen short man
'a man whose temper is short (= a man who is short-tempered)'

In these examples too, the predicative adjectives can be used as an individual-level predicate, as in (87), but the construction in which a Genitive subject occurs in (86) is not an "individual-level predicate construction" but (so to speak) a "complex predicate construction."

(87) a. Keiki-**no** warui koto
Market-Gen slow fact
'the fact that the market is slow'
b. Fuji-san-**no** takai koto
Mt.Fuji-Gen high fact
'the fact that Mt. Fuji is high'
c. Tegami-**no** mijikai koto
letter-Gen short fact
'the fact that the letter is short'

The major difference between (86) and (85)/(87) is the fact that the head nouns in (85) and (87) are *koto* 'fact,' so that every subject-predicate relationship possible is established inside the GSC, whereas the head nouns in (86) are a referential noun *otoko* 'man' and it functions as the subject of the complex predicates expressed by a pair of the Genitive subject and the predicate in the GSC. Recall the discussion arund (23) and (24), where we have seen that the

[29]Note that the predicate in (85a) is an *adjectival noun*, which is followed by an adnominal inflection NA. However, by the late 19th century the adnominal inflection on *verbs* and *adjectives* had been almost totally declined, so that we need to suppose that this adnominal inflection on adjectival nouns, which continues to be frequently used in the present-day Japanese too, is no longer an indicator of the CP-status of the GSC; rather, the inflection may have been reanalyzed as a fixed part of an adjectival noun. The situation is comparable to the 3rd person singular inflection on verbs in the present-day English, in which other inflections have totally been declined so that this unique number agreement on a verb no longer functions as positive evidence for flipping on the *pro*-drop parameter.

pair of a Genitive subject and an adjective such as *kaioiro-no warui* corresponds to a single English word such as *pale*. For this reason, we assume that the relation between a Genitive subject and an adjective in examples like (87) are not a relation between a subject and an individual-level predicate but are part of a complex predicate, which can be stage-level or individual-level: for example, the state of someone being pale is short-lived, and hence *kaoiro-no warui* is a stage-level predicate, whereas the state of someone being short-tempered is intrinsic, and hence *ki-no mijikai* is an individual-level predicate. For these reasons, the adjectives in (86) and those in (87) should be distinguished, although they are superficially similar to each other.

In fact, my database shows that the frequency of the GSC of which the predicate is an adjective is highest among the six types of semantic predicates shown in Table 5, though most of them are of the "complex predicate" type, and its frequency have been only slowly decreasing in the last 120 years (from 860 PER MIL in the 1890–1910s to 309 PER MIL in the 2000–2010s; the decrease by 64%), as a result of the entire tokens of the GSC being decreasing in the period, as shown in Fig. 17A.

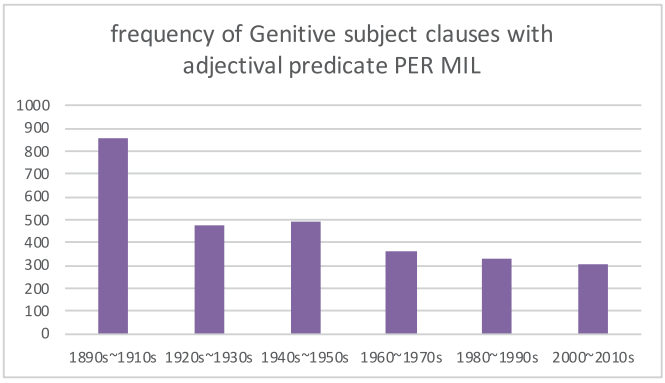


Fig. 17. A: Frequency of the GSC with adjectival predicates.

By contrast, of all the adjectival predicates, the frequency of the GSCs of the "individual-level predicate" type, which was originally low, has been steeply declined to almost zero in the last 120 years (from 62 PER MIL in the 1890–1910s to 2.5 PER MIL in the 2000–2010s; the decrease by 96%), as shown in Fig. 17B:

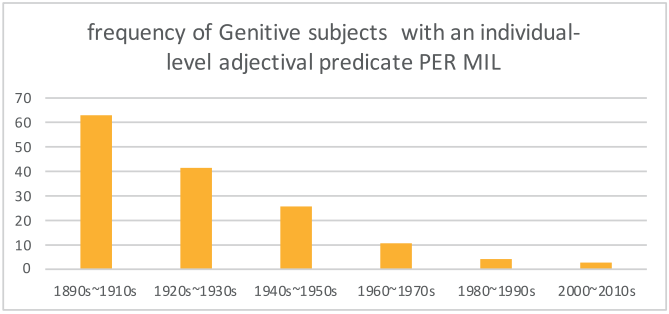
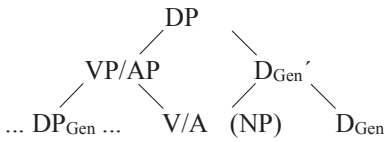


Fig. 17. B: Frequency of the GSC with an individual-level adjectival predicate.

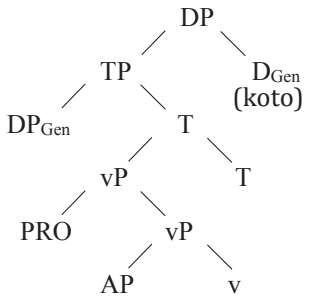
Comparison between Figs. 17A and 17B suggests that the "complex predicate" type and the "individual-level predicate" type are licensed by totally different mechanisms and that the latter has been almost totally diminished in the 2000–2010s, whereas the former has kept the highest frequency even recently.

I will propose that while the "complex predicate" type of the GSC can be generated even if the value of the GSC parameter is fixed as in (56), i.e., the VP/AP, the "individual-level predicate" type of the GSC can be generated only if the value of the GSC parameter is fixed as in either (53) or (54), i.e., CP or TP.

(88) the structure of the GSC of the "complex predicate" type



(89) the structure of the GSC of the "individual-level predicate" type:



Given this and the assumption that the syntactic size of the GSC has been shrinking from CP to VP/AP in the last 120 years, the contrast between the slow decreasing of the former and the steep decreasing of the latter can be expected to some extent.

5.3.2.2. Verbs denoting a semelfactive event

Just as the two types of adjectives show a clear contrast in terms of the frequency of the GSC in which they occur, two types of verbs can show a clear contrast when we compare a verb denoting a semelfactive event and a stative verb. The GSCs with a semelfactive eventive verb and those with a stative verb are illustrated in (90) and (91), respectively, where all examples are taken from Yukichi Fukuzawa's autobiography:

(90) a. Sono shosei-**no** iu-ni, …
that student-Gen say-Dat
'According to what the student says, …'
(Yukichi Fukuzawa (1897) *Fukuou Jiden*, p. 60)
b. Watasi-**no** umare-ta-no-wa, Tenpou 5-nen 12-gatu 12-nichi, …
I-Gen be.born-Past-Comp-Top Tenpou 5th-year 12th-month 12th-day
'It was December 12th, Tenpou 5 that I was born, …'
(Yukichi Fukuzawa (1897) *Fukuou Jiden*, p. 9)

(91) a. Kessite fukai takurami-**no** aru akunin de-wa nai.
ever deep conspiracy-Gen be wicked.person COP-Top Neg
'(He is) never a wicked person who has deep conspireacy.'
(Yukichi Fukuzawa (1897) *Fukuou Jiden*, p. 30)
b. Kore-wa taka-**no** sire-ta jinbutu da.
This-Top quantity-Gen be.known-Past person is
'This is a person who do not amount too much.'
(Yukichi Fukuzawa (1897) *Fukuou Jiden*, p. 42)

(90a) and (90b) are GSCs in which verbs denote a semelfactive event and have a present tense and past tense, respectively, whereas (91a) and (91b) are GSCs in which stative verbs have a nonpast tense and past tense, respectively.[30] As these minimal pairs of examples show, the dynamic/stative asymmetry (or whether an event is a semelfactive activity or a stative) is orthogonal to the past/nonpast asymmetry. What the aspectual distinction shows is that a semelfactive verb denotes a telic eventuality that took/takes place at a particular time and place and does not imply a resultant state, whereas a stative verb denotes an atelic eventuality that does not involve an action or change of state and continues for a certain period, whether it is quite long (in the case of an individual-level predicate such as *sitteiru* 'know') or short (in the case of a stage-level predicate such as *iru* 'stay').

As Kim (2009), Miyagawa (2011) and Nambu (2014) observe, the Genitive Subject is synchronically in a high affinity with stative predicates, but not with a semelfactive eventive predicate. However, my database shows that the GSC that co-occurred with a semelfactive eventive verb was frequently observed before the 20th century, though its frequency has been steeply declining in the last 120 years:

[30]Note incidentally that the verb *umareru* 'be born' is classified into "semelfactive eventive verbs" even if the event of someone being born is usually followed by the resultant state of him or her being alive, because this is only part of our pragmatic knowledge, rather than syntactic. Whether an eventive verb has a resultant state or not syntactically can be checked by morphologically adding the aspectual suffix *-teiru* to a verb stem by and confirming whether it is interpreted as "result state continuation." "Result state continuation" can be modified by a temporal adverb expressing the period for which the result state continues, as in *3-jikan tomat-teiru* 'stop-Asp for three hours.' *Umare-teiru* 'be.born-Asp' does not denote "result state continuation," as it cannot be modified by this type of temporal adverb, as in **3-nenkan umare-teiru* 'be born for three years."

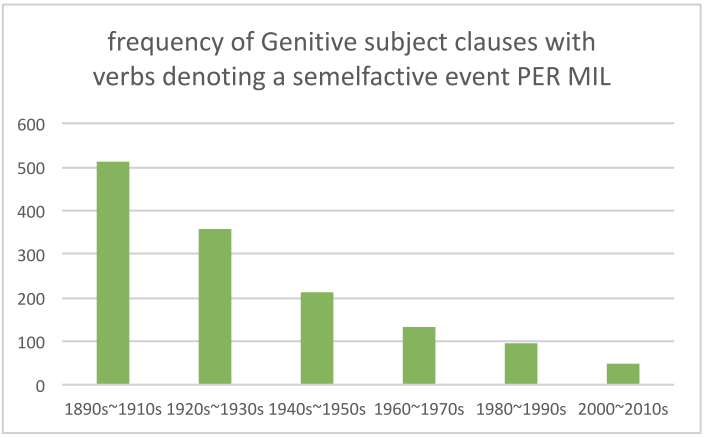


Fig. 18. Frequency of the GSC with a semelfactive eventive verb.

As Fig. 18 shows, the frequency of the GSC with a semelfactive eventive verb had the frequency of 509 PER MIL in 1890–1910s, but it has declined to 48 PER MIL in the 2000–2010s, i.e., it decreased by 90% in the 120 years.

By contrast, although the frequency of the GSC with a stative verb has also been decreasing, its gradient is much slower than that of the GSC with a semelfactive eventive verb, as its frequency was 410 PER MIL in 1890–1910s, while it is 152 PER MIL in the 2000–2010s (i.e., decrease by 63%):

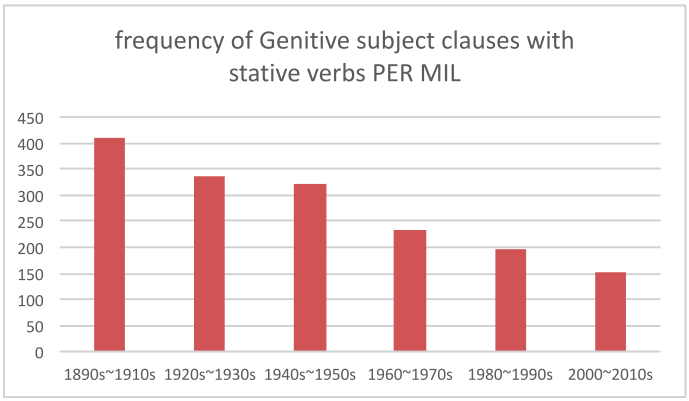


Fig. 19. Frequency of the GSC with a stative verb.

In fact, in terms of the frequency the GSC with a semelfactive eventive verb and that of the GSC with a stative verb PER MIL reversed between the 1930s and the 1940s:

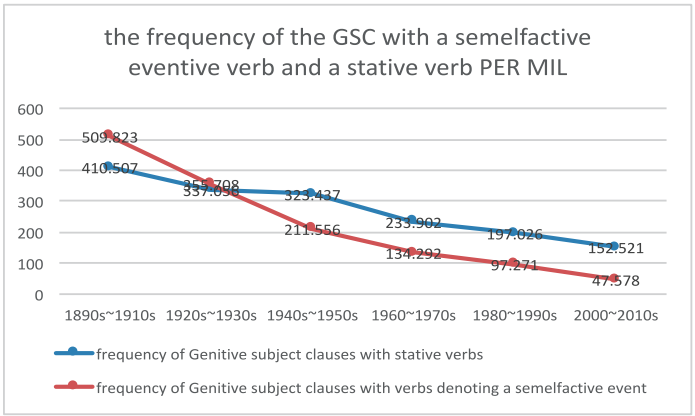


Fig. 20. The GSC with a semelfactive eventive verb vs. stative verb.

Now, let us consider what syntactic structure each of the GSC with a semelfactive eventive verb and the GSC with a stative verb need, respectively. First, the semelfactive eventive verb, by definition, denotes an event that took/takes place at some time at some place, once and for all, and finished/finishes without any resultant state. For such an event to be syntactically represented, not only V and v are necessary (because the dynamic event should have an (implicit) instigator), but Tense is also necessary in order to designates the temporal point at which the event takes/took place. The Tense must be a full-fledged T (rather than a defective tense as Miyagawa (2011, 2013) proposes for the GSC). Then, the parametric change that took place somewhere in the last 120 years will be from the GSC with a full-fledged T to the GSC with a defective T (in Miyagawa's term), or the GSC with full-fledged T to the GSC without TP. In either case, it is conceivable that the relevant parametric change also took place somewhere in the early 20th century, and as a result, the frequency of the GSC with a semelfactive eventive verb reversed with that of the GSC with a stative verb. If we are correct in claiming that there are potentially two more dialects than what Harada (1971) identified, i.e., Dialects C and D as in (55) and (56), then the frequency reversal we can see in Fig. 20 may show one of the many other triggers for those who were born after the 1940s to fix their GSC parameter as vP or VP and begin to acquire the Dialects C (or D) (see Sect. 6 for a discussion from the perspective of language acquisition).

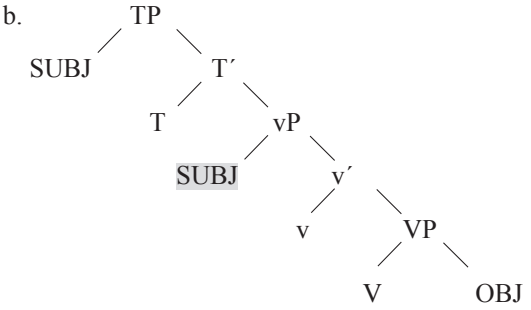
5.3.2.3. TP-adverbs and vP-adverb

The VP-internal Subject Hypothesis (VPISH; Kuroda (1988); Fukui (1986); Koopman and Sportiche (1991), among many others) proposes that the subject of a transitive verb is base-generated in VP and moves to [Spec, T] in overt syntax. On the basis of the VPISH, Larson's (1988) seminal work on the double object construction, Koizumi's (1993) Split VP Hypothesis on Japanese syntax, and Hale and Keyser's (1993) work on the Lexical Conceptual Structure were all convergent on the hypothesis that the verbal syntax has at least two different verbal projections one of which hosts an external argument and the other of which hosts one or two internal arguments.

Given the theoretical background, Chomsky (1995) proposed vP as a functional projection of which the specifier hosts an external argument, the head takes VP as its complement, and which itself is selected by T. Given this, the structure of a single finite clause with a transitive verb will be schematized as in (92):

(92) a. John has read the book.

b.



The subsequent works in the minimalist program are along this basic assumption. However, the identification of the structure of a finite clause as (92b) does not imply anything about how large a structure should be given to a subordinate clause of which the tense is not as full-fledged as that of a matrix clause but of which the temporal interpretation is somehow dependent on that of the matrix clause (Stowell (1982)).

Thus, Williams (1975) is probably the first to propose the existence of a shallow clause, which lacks CP or TP (in current terms), and he tested this prediction by placing a certain type of adverbs in the clause and checking whether it is acceptable or not:

(93) Gerunds in English as "**Shallow Clauses**":
a. John's quickly giving the book to Mary bothers me.
b. That John probably gave the book to Mary bothers me.
c. *John's probably giving the book to Mary bothers me. (ibid.: 262)

(94) Reduced Relative Clauses in English as "**Shallow Clauses**":
a. The person [who was probably playing the music you heard] used to be my classmate.
b.* The person [probably playing the music you heard] used to be my classmate. (ibid.: 251)

The contrasts in (93) and (94) show that gerunds and reduced relative clauses in English are incompatible with a modality adverb (though they are compatible with a manner adverb). On the basis of these contrasts, Williams concluded that these types of subordinate clauses are lacking what we now call CP. In fact, if *probably* is an adverb in the TP-domain, the ill-formedness of (93c) and (94b) shows that gerunds and reduced relative clauses also lack TP.

More recently, Stowell (1983) proposed the notion of "small clause," which is defined as a clause which has both a subject and a predicate but not a (full-fledged) tense. Along these lines, a number of instances of small clauses have been proposed so far:

(95) a. John made [$_{TP}$ him cut his hair]. (cf. Ritter and Rosen 1993)
b. John had [$_{vP}$ him cut his hair]. (cf. Ritter and Rosen 1993)
c. John saw [$_{AspP}$ him running]. (cf. Felser 1999)
d. John found [$_{AP/VP}$ the house deserted]. (cf. Stowell 1983)

Thus, Ritter and Rosen (1993) propose to distinguish the *make*-causative and the *have*-causative by pointing out that the complement of former but not the latter is compatible with an individual-level predicate (= (96)) or negation (= (97)):

(96) a. John made Bill like French cooking.
b.* John had Bill like French cooking. (ibid.: 540)

(97) a. Bill made Ralph not marry Sheila.
b.? Bill had Ralph not marry Sheila. (ibid.: 538)

The GSC is a kind of subordinate clause, so that there is a possibility that it lacks TP or vP. In fact, both Miyagawa's (2011) proposal and my proposal made here are a "shallow clause/small clause" analysis of the GSC. They differ in that in Miyagawa's (2011) system, (at least in the present-day Japanese) the GSC has the structure of D-TP where TP is headed by a defective tense, whereas in our terms, there are at least two dialects, one choosing the GSC with a full-fledged TP and the other choosing the GSC without it. Given the conception about TP, the two analyses make a lightly different prediction about whether a GSC is compatible with a certain subtype of the TP-adverb: in Miyagawa's theory, a TP-adverb is compatible with the GSC if the adverb does not specify a temporal reference or is not related to aspectuality of the event, for example, a subject-oriented adverb or a modality adverb. In our theory, on the other hand, we predict that if the projection of TP is absent altogether in the GSC, the GSC should be incompatible with any type of TP-adverb; hence, even if a TP-adverb precedes a Genitive subject, it will result in ungrammaticality. In other words, we predict that a Genitive subject following a TP-adverb (such as a subject-oriented adverb or a kind of modal adverb) is less acceptable than a Genitive subject following a vP-adverb (such as a manner adverb or a dynamic locative adverb) for a younger generation even if the adverb prcedes a Genitive subject, as the absence of TP will prevent the GSC from hosting a TP adverb, whereas the presence of vP in the GSC would suffice to accommodate a vP-adverb.

Using this test, Ogawa, Niikuni and Wada (2018b) made a large-scale survey targeting 300 participants belonging to three different age groups (20–29, 40–49, 65–74) born, raised and now living in the metropolitan area of Japan, and asked them to judge each of the Nominative and Genitive subject clauses in which either a TP-adverb or a vP-adverb occurs before or after a subject, on a five-point Likert scale:

(98) A TP-adverb (subject-oriented adverb) co-occurring with a Genitive subject:
a. (?*tanosisooni) kodomotati-**no** asonde-ita hiroba
looking-cheerful children-Gen playing-was park
'the park in which children were playing, looking cheerful'
b. kodomotati-**no** (*tanosisooni) asonde-ita hiroba
children-Gen looking-cheerful playing-was park
'the park in which children were playing, looking cheerful'

(99) A vP-adverb (manner adverb) co-occurring with a Genitive subject:
a. (??zawazawato) seitotachi-**no** sawaide-ita kyoositu
noisily students-Gen running.around-was classroom
'the classroom in which students were running around noisily'
b. seitotachi-**no** (*zawazawato) sawaide-ita kyoositu
students-Gen noisily running.around-was classroom
'the classroom in which students were running around noisily'

We identified a significant difference between age groups in the acceptability of sentences of the (98a) type sentences and of the (99a) type that support my prediction. The result was essentially in support of the above mentioned prediction.[31]

[31]See Ogawa, Niikuni and Wada (2018b), of which the handout is available on Research Gate, for a more detailed argument.1

5.3.3 Positive evidence for a vP structure: Voice and transitivity

Once we identified the existence of a GSC as CP and a GSC as TP, the next task will be to confirm whether there exists a GSC that lacks both. We have assumed that the GSC that lacks TP but has vP corresponds to Dialect C, while the GSC that lacks all of CP, TP, and vP corresponds to Dialect D. In order to check this possibility, all we have to do is ask whether a Genitive subject is compatible with a certain syntactic phenomenon which needs vP. There are three such tests: the compatibility of the GSC with (i) a transitive verb, (ii) an unaccusative eventive verb, and (iii) a passivization of a transitive verb.

Chomsky (2001) proposes a phase theory to make the narrow syntactic computation as efficient as possible. According to the phase theory, two propositional categories, CP and vP are phases, and vP is further divided into the strong phase and the weak phase, in terms of whether it has an external argument or not: a transitive verb projects a strong phase vP, while an unaccusative eventive verb and a passive verb based on a transitive verb projects a weak phase vP.

The assumption that all the eventive verb projects a vP is arguably based on the correspondence between the syntactic structure and the Lexical Conceptual Structure (LCS) (Hale and Keyser 1993; Levin and Rappaport Hovav 1995; Kageyama 1996). Although there are technical manipulations of certain devices, all the previous analyses of the LCS of a verb are either implicitly or explicitly based on Vendler's (1957) four-way distinction of verbal semantics: state, action, accomplishment, and achievement.[32]

(100) Vendler's (1957) four-way classification:
a. stative verb: know, be, see, hear, fear, ache, ...
b. action verb: run, move, laugh, cry, say, ...
c. accomplishment verb: draw, eat, build, digest, ...
d. achievement verb: arrive, win, light, appear, ...

Given the classification in (100), Kageyama (1996) proposes a four-way distinction of the LCS, as in (101):

(101) Four types of LCS (Kageyama (1996: 90–91)):
a. stative verb: $[_{State}$ x BE AT y]
b. action verb: $[_{Event}$ x ACT (on y)]
c. accomplishment verb: $[_{Event}$ $[_{Event}$ x ACT (on y)] CONTROL $[_{Event}$ BECOME $[_{State}$ y BE AT z]]]
d. achievement verb: $[_{Event}$ BECOME $[_{State}$ y BE AT z]]

(101a) is the LCS of stative verbs, which include verbs of existence, verbs of possession, verbs denoting psychological state (a subpart of psych verbs; Belletti and Rizzi (1988)), and verbs denoting physiological state (such as *ache, itch, tickle*). (101b) is the LCS of action verbs that are inherently atelic, including verbs of volitional motion, verbs of hitting, and verbs of speaking. (101c) is the LCS of accomplishment verbs, which is an amalgam of (101a) and (101b) through the mediation of the semantic operators CONTROL and BECOME, and the higher event and the lowest event denote the causing event and the result state, respectively.[33] This LCS is that of causative changed-of-state verbs such as verbs of creation, verbs of destruction, experiencer object (EO) psych verbs, and causative change-of-location verbs such as causative verbs of motion, ditransitive verbs, and the resutative construction of various types. (101d) is the LCS of achievement verbs, which denote an event that occurs instantly, such as verbs of appearance, verbs of disappearance, verbs of getting, and so on. (101d) is the amalgam of (101a) and the semantic operator BECOME, meaning that such a verb denotes an (instant) establishment of a state.

There has been a controversy on how verbs that allow transitive-unaccusative alternation are related lexico-semantically. Levin and Rappaport Hovav (1995: 106–109) considers that both transitive and unaccusative verbs in English share the same transitive LCS underlyingly, and the unaccusative counterpart is derived by the lexical operation of *detransitivization*, in which the external argument position in LCS is existentially quantified and is not linked to the subject position in syntax. On the other hand, Kageyama (1996: 145) discusses two different types of Japanese verbs that alternate between transitive and unaccusative verbs and argues that the transitive-unaccusative alternation that are shared between English and Japanese stems from transitive verbs by the lexical process of *anti-causativization* (= reflexivization). If Levin and Rappaport Hovav's analysis is on the right track, the syntactic structure of an unaccusative verb does not have to project vP, since no external argument position in argument struxture is projected in syntax. By contrast, if Kageyama's analysis is on the right track, the syntactic structure of an unaccusative verb needs to project vP, since unaccusative verbs in this analysis are simply transitive verbs of which the external argument happen to be identified with the internal argument.

[32] cf. also Kindaichi (1950) for a similar but different classification of Japanese verbs.

[33] Kageyama (1996) assumes that when no volitional causer is involved in the causing event and there is only an inanimate instigator of the event, the semantic operator CONTROL is replaced by CAUSE. However, we will ignore this distinction in this article since the minor difference is irrelavnt.

Given this bifurcation, we can see that Chomsky's (2001) view of unaccusatives is in more affinity with Kageyama's (1996) view of unaccusative LCS than Levin and Rappaport's (1995), since it takes unaccusatives to have a projection of vP which is different from the vP of transitive verbs just in terms of the strength of the phasehood.

Despite the difference between Kageyama's and Levin and Rappaport Hovav's views of unaccusatives, they will make the same prediction about the difference between unaccusatives and passives: the external argument which is present in the LCS for both types of verbs is syntactically active in passives but not in unaccusatives. In fact, thre is evidence showing that, even though no external argument DP is realized in passivization, it is assumed to be syntactically active, so that it can feed the controller of the PRO in the purpose clause, it is realized post-verbally as a *by*-phrase, and it allows modification by a subject-oriented adverb; no such operation is applicable to unaccusatives:

(102) a. The ship was sunk [PRO in order to collect insurances].
b.* The ship sank [PRO in order to collect insurances]. (Lasnik (1988))

(103) a. The ship was sunk by the pirates.
b.* The ship sank by the pirates.

(104) a. The ship was sunk intentionally.
b.* The ship sank intentionally.

More recently, a slightly different view about passivization has been proposed by Collins (2005), who claims that in both passivized verbs and transitive verbs the external argument is syntactically present, and the DP in the *by*-phrase is identical to the external argument of a transitive verb, and the former differs from the latter only in the overt realization of the VoiceP headed by the preposition *by* and the presence of the remnant movement (what Collins refers to as "Smuggling") of the VP to [Spec, Voice], as in (105):

(105) a. The ship was sunk by the pirates.
b. $[_{TP}$ the ship$_i$ [T (was) $[_{VoiceP}$ $[_{VP}$ sunk $t_i]$ [Voice (= by) $[_{vP}$ the pirates [v $t_{VP}]]]]]]$
↑----------↓
↑----------(Smuggling)----------↓

In (105) the VP is moved out of vP and raised to [Spec, Voice], and the underlying object of the verb is moved out of the VP and raised to [Spec, T]. What appears to be a *by*-phrase is not a constituent but is separated to the head of VoiceP (= *by*) and the DP as the external argument in [Spec, v]. Given this analysis, the passivized verb and the unaccusative verb occur in different syntactic structures, as VoiceP is intrinsic to transitive verbs and unaccusatives should lack it. Compare (196) with (105b):

(106) $[_{TP}$ the ship$_i$ [T (ϕ) $[_{vP}$ v $[_{VP}$ sunk $t_i]]]]$
↑----------↓

If Collins' (2005) analysis is correct, it follows that a clause headed by a passive verb has one additional projection over vP, and in this respect it is more complex than the structure of an unaccusative eventive verb. The unaccusative eventive verb is also different from a simple stative verb in their LCS composition, in that there are at least three active semantic operators ACT, CONTROL and BECOME, even if ACT may be inactivated due to the decausativization or reflexivization of the external argument. This implies that the least structure in which an unaccusative eventive verb can occur is vP, while the stative verbs, of which the LCS lacks all of ACT, CONTROL and BECOME, can be syntactically VP, unless other functional projections are required by the presence of a TP-level adverb or an overt complementizer. In fact, if positive evidence for a larger syntactic structure was unavailable for a language learner, in our theory, the grammatical structure of the GSC for the him or her will be set as VP/AP.

Given the three-way syntactic distinction between the statve verbs (= VP), unaccusative change-of-state verbs (= vP), and passivized transitives (= VoiceP), and the hypothesis that the syntactic size of the GSC is in the direction of shrinking from CP to the bare VP/AP, we predict that the gradient of the decline in the frequency of a Genitive subject co-occurring with these three types of verbs will be three-way different: the declination of the passivized transitive are sharpest, that of the unaccusative change-of-state verbs comes next, and that of the stative verbs comes last.

This prediction is partially borne out, as far as my database is concerned. The decline in the frequency of a Genitive subject co-occurring with a stative verb is already shown in Fig. 20: its frequency was 410 PER MIL in 1890–1910s, while it is 152 PER MIL in the 2000–2010s (i.e., decrease by 63%). In contrast, the frequency of a Genitive subject co-occurring with an unaccusative eventive verb was 400 PER MIL in 1890–1910s, while it is 57 PER MIL in the 2000–2010s (i.e., decrease by 86%). And a Genitive subject co-occurring with a passivized verb was originally rare and its frequency was 34 PER MIL in 1920–1930s when it was most frequent, while it is 5.5 PER MIL in the 2000–2010s (i.e., decrease by 84%). These points are shown in Figs. 21 and 22:

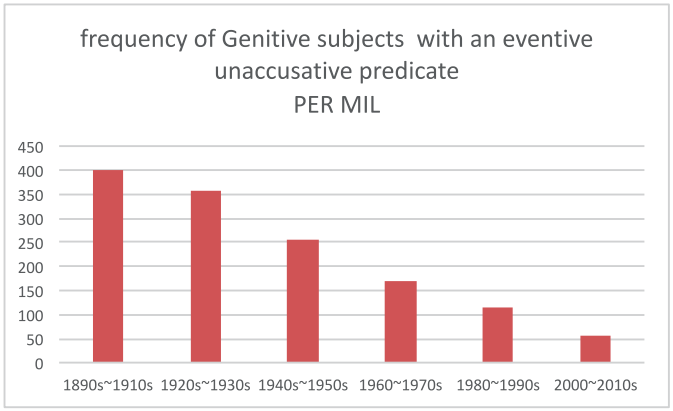


Fig. 21. The frequency of the GSC with an unaccusative eventive verb.

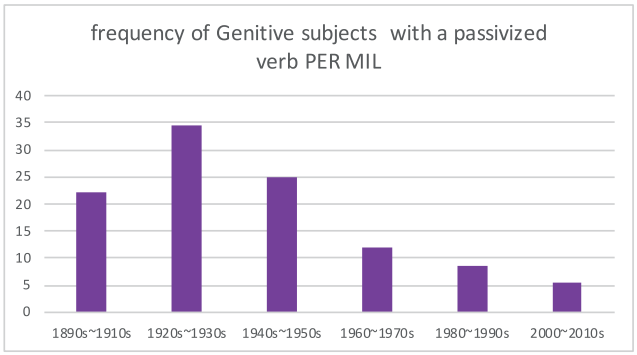


Fig. 22. The frequency of the GSC with a passivized verb.

The gradient of the decline in the frequency is sharp with both an unaccusative event verb and a passivized verb, i.e., decrease by 87 and 74%, respectively, in the last 120 years (from 496 PER MIL in the 1890–1910s to 63 PER MIL in the 2000–2010s for unaccusative eventives and from 22 PER MIL in the 1890–1910s to 5.7 in the 2000–2010s PER MIL for passivized verbs), and these figures are greater than that of the stative verb: decrease by 63%. In this sense, the prediction is bone out. The gradient of the decline is larger for the unaccusative eventive verbs than the passivized verbs. However, as the token frequency of the latter was already ten to twenty times lower than that of the former. And we can say that the GSC with a passivized verb has been far less frequent than the GSC with an unaccusative event verb throughout the 20th century.

A more careful look enables us to identify another salient fact about passivized predicates. We can see that a common pattern of GSC with a passivized verb, which is based on the verb *oku* 'put' and the head noun that denotes the (abstract) place in which the reference of the subject is put, such as *tokoro* 'place,' *jyookyoo/ kyooguu* 'situation,' *kankyo* 'environment,' *tatiba* 'footing,' *shakai* 'society,' *iti* 'location,' *bunmyaku* 'context,' and so on, begins to appear in a book published after the 1940s:

(107) a. Zibun-no ok-are-te-iru kyooguu
self-Gen put-PASS-TE-is encironment
'the environment in which I myself is placed'
(Keigo Higasino (1998) *Himitu*, p. 183)

b. ZIbun-tachi-no ok-are-te-iru shakai
self-PL-Gen put-PASS-TE-is society
(Hideki Yukawa (1960) *Tabibito*, p. 152)

This pattern becomes more and more frequent in the more recent decades, so that if we exclude the token frequency of this pattern and recalculate the frequency of the GSC with a passivized verb PER MIL, we have the following table:

Table 13. The frequency of the GSC with a passivized verb, before and after the tokens of "DP-*no okare-ta/ru* N" were excluded.

year of publication	1890s~1910s	1920s~1930s	1940s~1950s	1960~1970s	1980~1990s	2000~2010s
token frequency of the GSC with a passivized verb -- (1)	20	26	49	30	42	33
frequency of the GSC with a passivized verb PER MIL	22.070	34.638	24.919	12.098	8.692	5.568
token frequency of the GSC with the passivized verb of oku 'put' -- (2)	0	0	2	2	6	11
token frequency after (2) is excluded	20	26	47	28	36	22
frequency of the GSC with a passivized verb (after (2) is excluded) PER MIL	22.070	34.638	23.902	11.292	7.451	3.712

Table 13 shows that the frequency of the GSC with a passivized verb, after the tokens of "DP-*no okare-(tei-)ta/ru* N" were excluded, was 22 PER MIL in 1890–1910s, while it has decreased to 3.7 PER MIL in the 2000–2010s (i.e., decrease by 84%). It turns out that there is almost no difference in the rate of decrease in frequency between the unaccusative eventive verb and the passivized verb, and that the single pattern accounts for one-third of all the tokens of the GSC with a passivized verb. Hence, it seems safe to conclude that the GSC with a passivized verb has been being lexicalized or idiomatized.

Anyway, the considerably low frequency of the GSC with a passivized verb stand in a clear contrast with the relatively higher frequency of the GSC with an unaccusative eventive verb. Although both constructions can be qualified as positive evidence for a language learning child to fix the GSC microparameter as D-vP, one may well wonder which construction functions as a more robust piece of evidence for the learner. As the language acquisition in the ongoing process of language change is the issue of the next section, we will not go into the detail, but it may be instructive to point out here what Snyder (2017) suggests about the language acquisition and frequency, as in (108):

(108) Crucially, when the learner's input contains conflicting data, the GCr learner can be expected to adopt the grammatical option corresponding to the first type of evidence encountered. [...] The evidence that reaches the learner is used more frequently by the child's caretakers. Hence, it is precisely when two types of sentences are grammatically *incompatible* that the low frequency of one may lead to its obsolescence.[34]
(Snyder (2017: 241))

Snyder (2017) proposes this view in the context of discussing the obsolescence of V-to-I movement in the late middle English and its replacement by *do*-support, where V-to-I movement and *do*-support are mutually incompatible and the latter is considered to be a last resort operation. His claim is not directly applicable to the case we are discussing here, since we are dealing with totally distinct pairs of constructions. However, (108) may be suggestive in understanding why the GSC with a passivized verb has been sharply decreasing its frequency: we can argue that they have been decreasing because almost the same intended meaning could be conveyed by either the NSC with a passivized verb or the GSC with an unaccusative eventive verb (if the transitive counterpart of the passivized verb also allows causative-inchoative alternation). Probably, the sharper decline in the frequency of the passivized counterpart will be because there was some kind of competition between the GSC with a passivized verb and the GSC with an unaccusative eventive verb, and the fact that the frequency of the word sequence "DP-*no ok-are(-tei)-ru/ta* N" has been increasing (which is a rather surprising fact) is somehow related to the fact that the transitive verb *oku* 'put' does not have an unaccusative counterpart. This much said, we can conclude that the GSC with a passivized verb and that with an unaccusative eventive verb are qualified as positive evidence for the GSC with VoiceP and vP, respectively, and that there is a competition between the former and the latter in terms of the complexity of the syntactic structure (i.e., VoiceP is more complex than vP), and this is why the unaccusative opion has been uttered about 10 to 20 times as frequently as the passivized one in every decade. Moreover, the passivized option has decreased its frequency rather sharply in the last 100 years because the NSC with a passivized verb has increased its frequency in the period. A more detailed discussion of the last issue will be discussed in Sect. 6, where we will discuss the relation between language acquisition and language change.

5.3.4 Tense and aspect

In this subsection, we will discuss the diachronic change in the internal constitution of the GSC in terms of the tense

[34]In a totally different context, Bybee (2015: 102) proposes (i) as a principle according to which frequency change triggers language change:
(i) High-frequency forms are resistant to change on the basis of the structure of other forms or patterns, and more likely to serve as the basis of such change in low-frequency forms.

and aspect of the predicate with which the subject occurs. Discussion of aspect is based on the division of predicates into the same six types as we made in Fig. 11, and discussion of tense is based on the distinction between the past and nonpast tense, where the past tense is binarily subcategorized semantically.

Table 14. The frequency PER MIL and the ratio of the GSC with each of the six types of semantic predicate, numerically represented.

	1890s~1910s	1920s~1930s	1940s~1950s	1960s~1970s	1980s~1990s	2000s~2010s
volumes	7	9	14	18	32	50
characters	906197	750616	1966381	2479676	4831846	5927059
adjectives	779	373	962	893	1593	1832
stative verbs	372	235	648	581	952	907
verbs with resultant state	279	171	305	302	547	343
verbs of repetitive events	170	114	322	213	343	337
verbs of semelfactive events	462	267	416	333	471	282
nominal predicates	18	13	29	8	8	5
total	2080	1173	2682	2330	3914	3706

frequency PER MIL	1890s~1910s	1920s~1930s	1940s~1950s	1960s~1970s	1980s~1990s	2000s~2010s
adjectives	859.636	496.925	489.224	360.128	329.688	309.091
stative verbs	410.507	313.076	329.539	234.305	197.026	153.027
verbs with resultant state	307.880	227.813	155.107	121.790	113.207	57.870
verbs of repetitive events	187.597	151.875	163.753	85.898	70.987	56.858
verbs of semelfactive events	509.823	355.708	211.556	134.292	97.478	47.578
nominal predicates	19.863	17.319	14.748	3.226	1.656	0.844
total	2295.307	1562.716	1363.927	939.639	810.042	625.268

	1890s~1910s	1920s~1930s	1940s~1950s	1960s~1970s	1980s~1990s	2000s~2010s
adjectives	37.452	31.799	35.869	38.326	40.700	49.433
stative verbs	17.885	20.034	24.161	24.936	24.323	24.474
verbs with resultant state	13.413	14.578	11.372	12.961	13.975	9.255
verbs of repetitive events	8.173	9.719	12.006	9.142	8.763	9.093
verbs of semelfactive events	22.212	22.762	15.511	14.292	12.034	7.609
nominal predicates	0.865	1.108	1.081	0.343	0.204	0.135

First, Table 14 shows that although the frequency of the GSCs with each of the six semantic types of predicate has almost monotonously decreased in the last 120 years (as shown by the reddened slots), the ratio of the Genitive subjects with an adjective or a stative verb as its predicate among all the GSCs has been increasing, because of the decreasing in the ratio of the GSC with a non-stative verb among all the GSC.

Second, Table 14 and Fig. 23 show that, in contrast to the fact that the ratio of the GSCs with verbs denoting a semelfactive event, a repetitive event, or a change-of-state event with a resultant state, and the GSCs with a nominal predicate has been decreasing in the last 120 years, the ratio of the GSCs with adjectives and stative predicates to all the GSC tokens has been increasing in the last 120 years. In short, what happened in the last 120 years about the GSC can be referred to as a semantic change toward the preference of stative predicates, or "stativization." The process of "stativization" can be more easily visualized in the following figure:

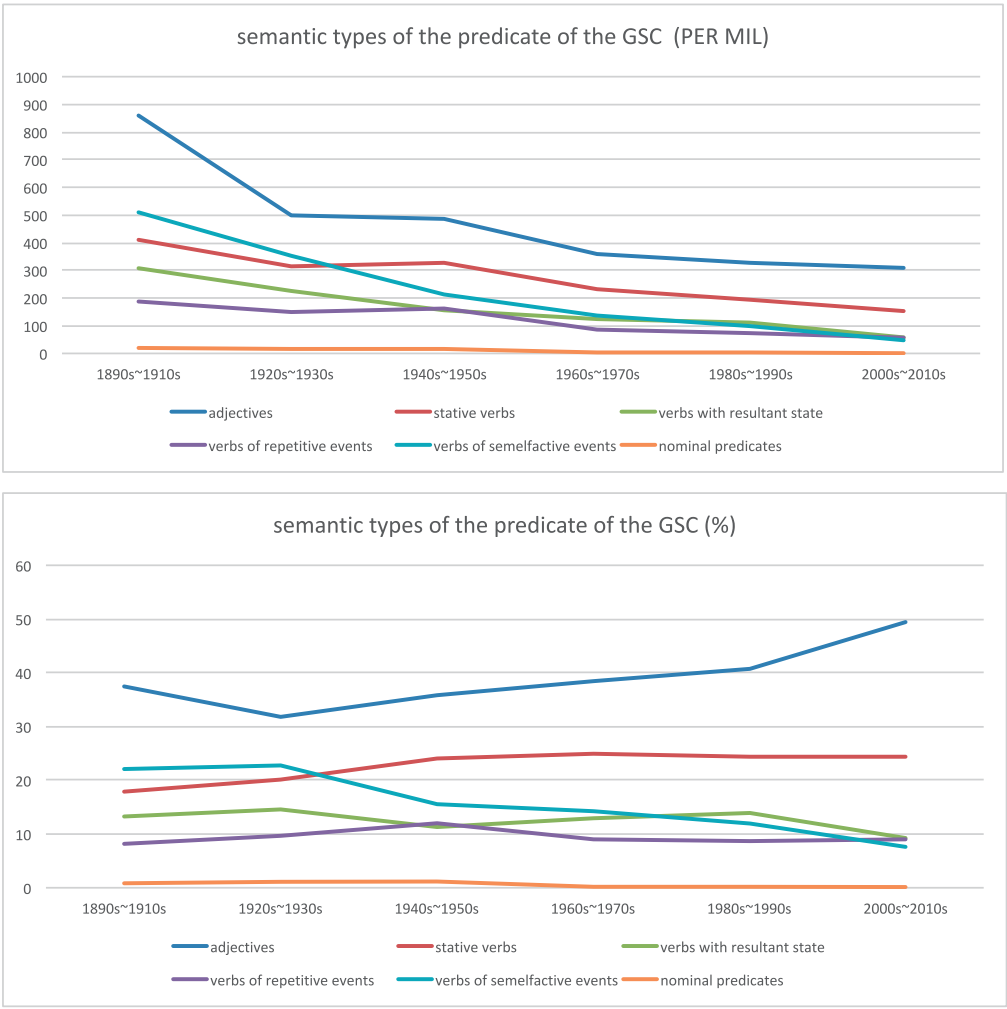


Fig. 23. The frequency (PER MIL) and the ratio of the GSC with each of the six types of semantic predicate, graphically represented.

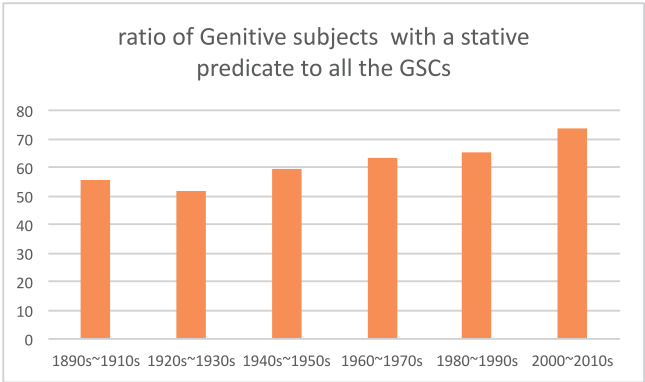


Fig. 24. The ratio of the GSCs with a stative predicate (verb or adjective) to all the GSCs, graphically represented, which is increasing from 50 to 73%.

If we summarize the relevant change in these *semantic* terms, it seems in conflict with our hypothesis that the *syntactic* shrinking of the GSC from CP to VP/AP has been in progress. However, I will claim that the apparently semantic change is syntactically driven, because a smaller syntactic size cannot accommodate an aspectually complex predicates. The background assumption for this claim is that the aspectual information of a verbal (and adjectival) predicate is expressed by syntactic functional categories, as proposed in Cinque (1999, 2006), Ramchand (2008), and Travis (2010), among others.

Another issue that will be discussed in this subsection is about how the temporal information on verbs or adjectives is syntactically represented. As noted in (15), in Japanese, the past tense morphology on verbs does not necessarily

expresses an event that took place in the past, as a predicate with the past tense morphology also has (i) the present perfect and/or result state that holds at speech time, as in (109a), and (ii) the pure state that holds at speech time, as in (109b) (cf. Kinsui 1994, Ogihara 1999; Ogawa 2005):

(109) a. Mizu-**no** hait-ta koppu
water-Gen go.into-Past cup
'a cup into which water has been poured'
b. sima-**no** hait-ta boosi
stripe-Gen go.into-Past hat
'a hat in which there are stripes'

At first blush, the presence of a tense morphology on a verb or adjective might seem to be positive evidence for a child to learn that the relevant GSC has TP, but the mismatch between the morphology and the semantics of tense in Japanese forces us to ask under what condition the frequency in the decline of the GSC with a past tense morphology on verbs or adjectives constitutes positive evidence for the determining the value of the GSC parameter. I will argue below that it is not that simple to give an aswer to this question.

5.3.4.1. Aspectuality of verbs and syntactic size

The Table 14 and Fig. 23 are based on the 130 books I investigated and therefore, it is a quantitatively augmented version of the preliminary investigation we showed in Fig. 11, which is based on an investigation of the 28 books I investigated. Although the number of books investigated has quadrapled, there seems to be little or no change in the tendency of what type of predicate is more likely to be paired with a Genitive subject. The generalization we stated in (13e) is repeated below:

Table 15. The number of token and the ratio of GSCs and NSCs, sorted out in terms of the six semantic predicates.

	Genitive Subject	ratio of each semantic type among all the Genitive subjects (%)	Nominative Subject	ratio of each semantic type among all the Noiminative subjects (%)	total	ratio of Genitive subjects to all the adnominal clauses (%)
characters					452640	
adjectives	149	40.270	137	11.996	286	52.098
stative verbs	93	25.135	115	10.070	208	44.712
verbs with resultant state	47	12.703	167	14.623	214	21.963
verbs of repetitive events	49	13.243	292	25.569	341	14.370
verbs of semelfactive events	32	8.649	405	35.464	437	7.323
nominal predicates	0	0	26	2.27670753	26	0
total	370		1142		1512	24.471

(110) In an adnominal clause, the more stative a predicate is, the more likely it is to license a Genitive subject, and among the eventive predicates, predicates denoting a semelfactive activity is less likely to license a Genitive subject than predicates denoting a habitual/repetitive event or an event with a resultant state. The nominal predicate is least likely to license a Genitive subject.

The validity of this generalization is corroborated by another set of data I made from *Tenseijingo*, a daily column in *Asahi Shinbun* newspaper for the two years between July 2016 and June 2018. An advantage of data collection from this column is the rigidly constant number of characters contained in everyday's column. From this column I collected not only Genitive subjects but also Nominative subjects in an adnominal clause, sorted them in terms of the six semantics predicates, and compared the frequency. The result is shown in Table 15:

Table 15 shows the following three points:[35]

(111) a. Among the GSC, the frequency of the six semantic predicate types is aligned as follows:
adjectives > stative verbs > verbs of repetitive events = verbs of resultant states > verbs of semelfactive events > nominal predicates
b. Among the NSC, the frequency of the six semantic predicate types is aligned as follows, which is a quasi-perfect mirror image of (111a):
verbs of semelfactive events > verbs of repetitive events > verbs of resultant states > adjectives > stative verbs
c. The ratio between GSCs and NSCs for each of the six semantic predicate types is aligned as follows, where only the adjectives prefer the GSC to the NSC:
adjectives > stative verbs > verbs of repetitive events > verbs of resultant states > verbs of semelfactive events > nominal predicates

This result enables us to modify (110) as in (112), by including information about the NSC:[35]

(112) a. In an adnominal clause, the more stative a predicate is, themore likely it is to be associated with a Genitive subject, whereas the less stative a predicate is, the more likely it is to be associated with a Nominative subject.
b. The nominal predicates can only take a Nominative subject.
c. Only the stative predicates show a (quasi-)free alternation between Genitive subjects and Nominative subjects.

Given what we have seen so far, a generalization that needs to be explained might look like the correlation between stativity and choice of the Case assigned to a subject. In fact, among the eventive predicates, verbs denoting a habitual/repetitive event and verbs denoting an event with a resultant state are more likely to accept a Genitive subject than verbs denoting a semelfactive event, for the following reasons. First, Chierchia (1995) and Krifka *et al.* (1995) claim that a habitual sentence is a kind of generic sentences in which it is not the subject NP per se but the situations including the subject that act as the restrictor of the generic operator. The generalization is made not over members in a certain category but over relevant situations that contain a specific individual (i.e., the referent of the subject) within them. For this reason, a sentence denoting habituality or (constant) repetition of a certain event is partially similar to individual-level stative sentences and partially similar to semelfactive eventive predicates.

Second, an event with a resultant state is expressed by a subset of accomplishment verbs, of which the LCS is expressed in (101c), repeated below as (113):

(113) $[_{\text{Event}}\ [_{\text{Event}}$ x ACT (on y)] CONTROL $[_{\text{Event}}$ BECOME $[_{\text{State}}$ y BE AT z]]]

Kageyama (1996) argues that accomplishment verbs are pragmatically divided into two subtypes in terms of which of the causing event and the result state is focused. When a causing event is focused (i.e., action focus), it can be modified by a temporal adverb modifying it, which expresses the time it takes for reaching the endpoint of the telic event; when a result state is focused (i.e., result focus), it can be modified by a temporal adverb modifying it, which expresses the time it persists after the telic event expressed by the verb ends. The minimal pair is expressed as follows:

(114) a. kuruma-o shako-ni 5-byoo-de ireru.
car-Acc garage-in 5-second-in put
'put a car in the garage in 5 seconds'
b. kuruma-o shako-ni 2-jikan ireru.
car-Acc garage-in 2-hour put
'put a car in the garage for 2 hours'

Such an ambiguity is argued to be possible only for verbs of which the LCS has the components of $[_{\text{Event}}$ x ACT (on y)] and $[_{\text{State}}$ y BE AT z]: accomplishment verbs.

In either case, although neither verbs denoting the habitual/repetitive event nor verbs denoting an event with a resultant state belong to the stative verbs, they contain a stative component semantically, and this is why they behave similarly to the stative verbs in terms of compatibility with a Genitive subject, as Miyagawa (2011) argues. However, such a semantic approach would not explain an asymmetry between the two types of "partially stative" predicates. Consider Table 14 again. Here, the ratio of the GSC with a verb denoting a habitual/repetitive event has been stable in the last 120 years (approximately 9%), whereas the ratio of the GSC with a verb denoting an event with a resultant state has decreased from 14.6% in the 1920–1930s to 9.3% in the 2000–2010s. Although the gradient of the decline is not so

[35]The green slots denote where the ratio is more than 20%, the yellow slots where the ratio is between 10 and 20%, and the red slots where the ratio is less than 10%.

steep as that of the GSC with a verb denoting a semelfactive verb, the fact that it has declined is not ignorable.

I will argue that a Genitive subject is more and more selectively combined with a purely stative predicates (adjectives or verbs), whereas less and less likely to be combined with a verb denoting a semelfactive verb and a verb denoting an event with a resultant state, because the unmarked syntactic size of the GSC for younger generations has been shrinking from TP to vP to VP/AP.

Recall that we argued in Sect. 5.3.2.2 that in order for a clause to express a semelfactive event, it must be at least as large as TP whose head expresses a full-fledged temporal information (i.e., not "defective" in Miyagawa's (2011) sense). And Table 14 shows that the ratio of the GSC with a semelfactive eventive verb to all the GSCs has decreased 66% between the 1920–1930s and the 2000–2010s.

By contrast, we argued in Sect. 5.3.2.3 that the LCS of an accomplishment requires the ACT component and BECOME component mediated by the CONTROL, and such an LCS is linked to the syntax by vP expressing a causing event and VP expressing a result state. We also noted there, referring to Kageyama (1996) and Chomsky (2001), that this state of affair is unchanged whether the verb is transitive or unaccusative (which lacks an external argument in syntax). This means that in order for a clause to express an accomplishment, it must be at least as large as vP which expresses both a causing event and a becoming event. And Table 14 shows that the ratio of the GSC with a verb denoting a resultant state has decreased 33% between the 1920–1930s and the 2000–2010s.

In fact, in the last two decades, the syntax of aspect has flourished fully and an enriched syntactic structure has been proposed as part of the cartography project (Rizzi (1997); Cinque (1999, 2006)) and as an attempt to clarify the link between an event structure and syntax (Ritter and Rosen (1998); Ramchand (2008); Travis (2010)). For example, Travis (2010) proposes a way to map the situation aspect and the viewpoint aspect (Smith (1991)) to syntax, by assuming the two functional heads Higher Aspect (H-Asp) and Lower Aspect (L-Asp) above and below vP, respectively, as in (115):[36]

(115) $[_{CP} \ldots [_{TP} \ldots [_{H\text{-}AspP} \ldots [_{vP}$ (Subj) $\ldots [_{L\text{-}AspP} \ldots [_{VP}$ V (Obj)]]]]]]

Moreover, it is reasonable to correspond each of the functional categories in (115) to the semantic operators in (116), as in V = BE, L-Asp = BECOME, v = CONTROL:

(116) $[_{Event} [_{Event}$ x ACT (on y)] CONTROL $[_{Event}$ BECOME $[_{State}$ y BE AT z]]]

Once we got a way to express the semantic aspectuality in terms of syntactic functional categories, we can distinguish the six types of semantic predicates in terms of the syntactic size with which they have to occur, as in (117):

(117) a. the minimal GSC with adjectives: $[_{AP}$ DP-Gen A]
b. the minimal GSC with stative verbs: $[_{VP}$ DP-Gen V]
c. the minimal GSC with verbs denoting habitual/repetitive events:
$[_{vP}$ (DP-Gen) $\ldots [_{L\text{-}AspP(habitual/repetitive)} \ldots [_{VP}$ V (Obj)]]]]]
d. the minimal GSC with verbs denoting resultant states:
$([_{TP}) \ldots [_{vP}$ (DP-Gen) $\ldots [_{L\text{-}AspP(telic\&result\ focus)} \ldots [_{VP}$ V (Obj)]]]]](])
e. $[_{TP} \ldots [_{H\text{-}AspP} \ldots [_{vP}$ (DP-Gen) $\ldots [_{L\text{-}AspP} \ldots [_{VP}$ V (Obj)]]]]]
f. the minimal GSC with nominal predicates:
$[_{CP} \ldots [_{TP}$ DP-Gen $[_{H\text{-}AspP} \ldots [_{vP} \ldots [_{DP}$ (*t*) $[_{VP}$ NP]]]]]]

As stativity can be expressed if the LCS contains BE, in syntax, only AP or VP is needed for creasing the minimal structure to express stativity, as in (17a, b). In order to express habitual/repetitive events and resultant states syntactically, at least vP is necessary, and they also differ in the featural content of the L-AspP: the former has the feature "habitual/repetitive" (cf. Cinque (2006)), whereas the latter has the feature "telic" and "result focus" (cf. Kageyama (1996)), as in (17c) and (17d), respectively. TP is necessary if the result state is associated with a past event, but not if it is associated with a nonpast tense. Hence, TP is optional in (17d). In order to express a semelfactive event, TP is required, as we argued in Sect. 5.3.2.2; and in order to express a nominal predicate and its (obligatorily focused) subject, CP, or at least the TopP and FocP among the CP-layer, is needed. Hence, the six semantic types are hierarchically four-way distinguished.

Given the four-way distinction, we can not only explain the generalization in (111a), where the ratio of the GSC is almost identical for verbs denoting a habitual/repetitive event and verbs denoting a result state, but also why the adjective and stative verbs are most likely to co-occur with a Genitive subject, since they need the smallest structure and hence even those whose GSC parameter is set as in (56) can accommodate them. On the other hand, the GSC with a nominal predicate will disappear once the GSC parameter is set as in (54), since it requires CP. Similarly, the GSC with a semelfactive eventive verb will disappear next, when the GSC parameter is set as in (55), since it requires TP. In this

[36]Travis (2010) identifies vP as a lexical category of VP. For the consistency, however, we will continue to use the notation of vP instead of VP.

sense, it is not accidental that the four-way distinction in (117) is parallel to the four-valued microparameter in (53) to (56). Such a parallel between the synchronic frequency and the order of disappearance in the course of language change can be given a unified explanation under the microparametric syntactic analysis. Such a unified explanation would not be available under a purely semantic approach to the synchronic distribution and diachronic change in the distribution of the GSC. Hence, the syntactic approach is superior to the purely semantic one.

Now, coupled with the syntactic approach to the GSC, let us propose a descriptive generalization about how native speakers are sensitive to the frequency of each construction and language change. The hypothesis is tentatively stated as in (118):

(118) When a construction is undergoing language change, we language users are sensitive to any slight difference in the construction-internal frequency and tend to judge a less frequently used construction as less acceptable.

To justify the generalization, Niikuni, Wada and Ogawa (2017) made a large-scale Web-based investigation and showed that what the generalization and my database predict is exactly borne out. We made a survey on the Internet, targeting 300 participants who were borne, raised and now live in the metropolitan area, who are divided into the same number of men and women, and who consist of 100 people each belonging to three different age groups: 20–29 years old, 40–49 years old, and 65–74 years old. They were asked to judge the acceptability of six pairs of a NSC and a GSC for each of the six semantic types of predicates as shown in Table 5 on a five-point likert scale, and subtracted the score of a GSC from the corresponding NSC (see Niikuni, Wada and Ogawa (2017) for the details of the experiment). Only the result is shown below, where (a) to (f) correspond to the six predicate types in (117a–f) and the higher column shows the lower acceptability, as the NSCs were more or less judged with the highest level of acceptability:

(119) a. The younger age groups are less likely to accept the GSC.
b. The more stative a predicate is, the more likely it is to admit the GSC, where stativity is aligned in the following order:
(a) > (b) > (c) = (d) > (e) > (f)

This result shows an exact parallel between (i) the ratio of the GSCs with each of the (a) to (f) types to all the GSCs, which differs in the way represented in Table 15 and summarized in (111a), and (ii) the acceptability of the GSCs with each of the six types.[37]

Given these results, we can conclude that a different frequency of the GSCs with one of the six different semantic types has some definite influence on native speakers' psychological reaction (i.e., acceptability judgment), and induces the different acceptability of the GSC with each of the six semantic types. This correlation between frequency and acceptability as stated in (118) is itself nothing more than a descriptive generalization, but we can give a principled explanation under the syntactic hypothesis in (117a–f) and the microparametric variations in (53) to (56).

5.3.4.2. Tense morphology on verbs/adjectives and the syntactic size

In this subsection, we will discuss what the previous arguments imply about the GSC with a predicate in the past or nonpast tense morphology.

The simplest assumption is that a clause with either past or nonpast tense morphology is at least as large as TP, because any tense morphology heads TP and is only morphologically merged with V/A (cf. Bobalijk (1994)). However, our hypothesis that the GSC has been shrinking from CP to TP to vP to VP/AP is incompatible with this simplest assumption, as even a stative verb or an adjective in the GSC always co-occurs with one of the past tense morphology *ta*/*katta* (for verbs/adjectives) or the nonpast tense morphology *ru* (for verbs) or *i* (for adjectives) or *na* (for adjectival nouns).

Among these, *na* was an adnominal inflection on adjectives, which traditionally occurred on C, but is now part of an adjective compiled as a single word in the lexicon. Thus, the adjective *kenkoo-na* 'healthy' is assumed to have the minimal syntactic structure as in (120a) rather than the full-fledged CP as in (120b) here:[38]

(120) a. [$_{AP}$ kenkoo-na]
b. [$_{CP}$ [$_{TP}$ [$_{vP}$ [$_{AP}$ kenkoo] V] T] C (na)]

Probably, in the classical Japanese, where *kenkoo-na* was described as *kenkoo-naru*, the adjectival noun had a structure like (120b), but as a result of the reanalysis that took place along with the declination of the adnominal inflection, it has come to have the minimal structure in (120a).

[37]Ogawa, Niikuni and Wada (2017) reached the same conclusion, using the three types of predicates: the nominal predicates, the individual-level adjectives, and the possessive adjective that forms a complex predicate with a Genitive subject. The three types differ in the frequency of the GSC, and a parallel result was also obtained through a large-scale Web-based survey on the acceptability of each of the GSCs and the NSCs. Ogawa, Niikuni and Wada (2018c) reached the same conclusion, using the three types of predicates: the passivized verbs, the unaccusative eventive verbs, and the stative verbs. Hence, (118) seems to have a robust foundation.

Now, I would like to propose that at least the complex of a verb stem and the nonpast tense morphology would be analyzed in a similar way, i.e., it has the minimal structure in (121a) rather than the full-fledged structure in (121b):

(121) a. [$_{VP}$ tabe-ru]
b. [$_{TP}$ [$_{vP}$ [$_{VP}$ V (tabe)] v] T (ru)]

As for the past tense, we have to pay attention to the interpretive difference between the three morphologically non-distinct forms, as in (15), repeated below as (122):

(122) a. Hajimete kankyaku-no hait-**ta** kouen
for.the.first.time audience-Gen go.in-Past performance
'the performance in which we had audience for the first time'
b. mizu-**no** hait-**ta** koppu
water-Gen go.into-Past cup
'a cup which water went into (and is now filled with water)'
c. sima-**no** hait-**ta** boosi
stripe-Gen go.into-Past hat
'a hat in which there are stripes'

The verb *hait-ta* in (122a) denotes a semelfactive event that occurred in the past tense, and hence *–ta* here is the bona-fide past tense morpheme. The verb *hait-ta* in (122b) denotes a state that results from someone's action of pouring water in, and hence it is a kind of perfective aspect form of *hairu*. The verb *hait-ta* in (122c) does not imply someone's action of drawing stripes on the hat or a result state, but the hat has stripes from the beginning at which it was created as a craft product and displayed at a shop, and hence it denotes a simple state. As Takahashi (1973) and Kinsui (1994) argue, in Japanese, there are a number of verbs that are morphologically non-distinct from verbs in a past tense form but denotes either a perfective aspect or a simple state that typically occurs in a relative clause, but not in the matrix clause (cf. also Ogawa (2004)):

(123) a.(*)Koppu-ni mizu-ga hait-ta.
cup-in water-Nom go.in-Past
'Water came into the cup./*Water has been poured in the cup'
b.* Boosi-ni sima-ga hait-ta.
Hat-in stripe-Nom go.in-Past
'Stripes came into the hat.'

Note also that the simple-state denoting *–ta* can only be combined with a change-of-state verb, but not with an action verb, an adjective or a stative verb. Hence, an adjective and a stative verb suffixed by *-ta* always denote a state in the past, as in (124a, b):

(124) a. Hana-no nagakat-ta si-go-nichi-mae <adjective>
nose-Gen long-Past four-five-day-ago
'the 4 or 5 days ago when my nose was long, . . .'
(Ryunosuke Akutagawa (1916) *Hana*, p. 27)
b. watasi-no i-ta tiimu <stative verb>
I-Gen be-Past team
'the team which I belonged (implying that I do not belong it now)'
(Marin Minamiya (2016) *Booken-no Sho*, p. 95)

Thus, there turn out to be three past-tense forms distinguished syntactically in terms of whether it really denotes a past eventuality or present perfect or simple state. Depending on these choices, we assume that the combination of

[38]See also Larson and Yamakido (2008) for the claim that the Japanese adjectives and adjectival nouns that inflect for tense, such as A–*i, or* AN-*na such as utukusi-i tori* 'beautiful bird' and *kirei-na uchi* 'clean house' are not covert relative clause constructions, as is implied by the claim often made in the Japanese linguistics that these morphemes represent tenses, copulas, or tensed forms of copula. Rather, they argue, following Samilan (1994), that the morphemes *–i* and *-na* are Ezafe morphemes, a kind of Case morphology. They defend this hypothesis by the fact that non-predicating AP constructions like (ia, b) do not allow a paraphrase by means of relative clause in English:

(i) a. huru-i tomodati
old friend 'longtime friend (cf. #friend who is longtime)'
b. kanzen-na baka
complete fool 'complete fool' (cf. #fool who is complete)'

Larson and Yamakido's (2008) claim is fully compatible with our analysis in (120a). See also note 34.

V/A+*ta* has the syntactic structure of TP, Higher AspP, or the minimal projection of a lexical V/A, respectively, as in (125a–d):

(125) a. $[_{TP}\ [_{vP}\ [_{aP}\ [_{AP}$ A (naga)] a (ku)] v (ar)] T (ta)] (= past state)
b. $[_{TP}\ [_{vP}\ [_{VP}$ V (i)] v (ϕ)] T (ta)] (= past state)
c. $[_{H\text{-}AsoP}\ [_{vP}\ [_{VP}$ mizu-no V (hair)] v (ϕ)] H-Asp (ta)] (= present perfective)[39]
d. $[_{VP}$ sima-no $[_{V}$ hair-ta]] (= simple present state)

Only (125a, b) with A or stative/action V combined with *–ta* projects up to TP, (125c) with change-of-state V combined with *–ta* projects up to H-AspP, and a combination of V+*ta* denoting a simple present state as in (125d) only projects up to VP.

Given the distinction between *Stem+ru* (which can always be VP) and *Stem+ta* (which can be VP, H-AspP or TP), it is impossible to say that the input of a combination of Genitive subject and *Stem+ru/ta* is automatically qualified as positive evidence for the GSC as TP. In fact, my database seems to show that a language-learning child is sensitive to the aspectual difference:

Table 16. The frequency change of the GSC in the past tense morphology.

Genitive Subjects with Past Tense Predicates							the rate of decrease
	1890s~1910s	1920s~1930s	1940s~1950s	1960s~1970s	1980s~1990s	2000s~2010s	
characters	906197	750616	1966381	2479676	4831846	5927059	
all the GSC with a past tense predicate	413	254	543	448	820	567	
PER MIL	455.751	338.389	276.142	180.669	169.707	95.663	79.010
statives with a past tense	59	49	112	104	157	130	
PER MIL	65.107	65.280	56.957	41.941	32.493	21.933	66.312
non-statives with a perfective *–ta*	191	98	222	203	406	255	
	210.771	130.559	112.898	81.866	84.026	43.023	79.588
non-statives with a simple past tense	163	107	209	141	257	182	
PER MIL	179.873	142.550	106.287	56.862	53.189	30.707	82.929
ratio of stative past tense to all the past tense predicates	14.286	19.291	20.626	23.214	19.146	22.928	

Table 16 shows the number of tokens and frequency of the GSCs with a past tense morpheme as a whole and those with a past tense morpheme with each of the three different aspectualities: the frequency of the GSC with a past tense morpheme, which has been decreasing in total in the last 120 years, has been more steeply decreasing with the past tense morpheme that denotes a past eventuality or present perfective than with the past tense morpheme that denotes simple present state. It also shows that the ratio of the GSCs with a past tense morpheme denoting simple present state to those with a past tense morpheme as a whole tends to be increasing in the 120 years.

[39]See also Murasugi (2011) for the possibility that the V+*ta* form in Japanese is a root infinitive or "surrogate verbs that look like finite verbs, but actually nonfinite, in both child and adult grammar." (p. 121) Murasugi argues that the surrogative infinitives are chosen in Japanese because the value for the Stem Parameter (Hyams 2008) is fixed in Japanese as [-Stem], which means that a verbal stem does not constitute a well-formed word. See also Takahashi (1973), Kinsui (1989), and Ogawa (2004) for discussions relevant to the overt tense morphemes in relative clauses in Japanese. See also note 33 for the apparent tense inflection on adjectives.

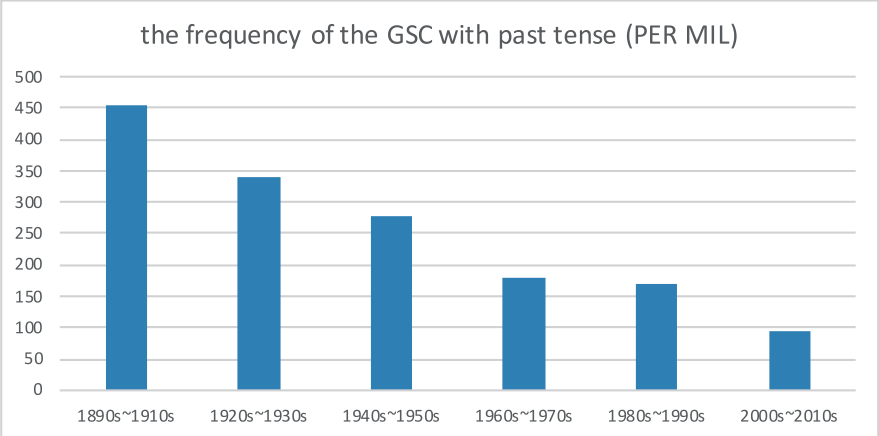


Fig. 25. The GSCs in the past tense.

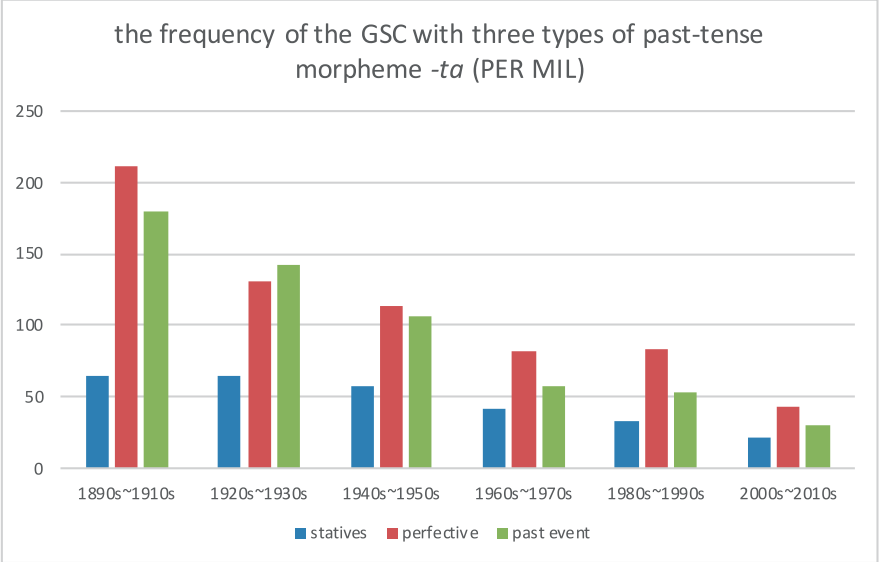


Fig. 26. The GSCs with a past tense in which *–ta* refers to simple past, present perfective, and simple present state.

Figure 25 shows a change in the frequency of the GSCs of which the predicate has a past tense morpheme as a whole, from which it is clear that the GSCs with a past tense morpheme has been monotonously decreasing in the last 120 years. Figure 26 shows a change in the frequency of each of the GSCs with the three types of past tense morpheme, from which it turns out that the GSCs in which the past tense morpheme denotes a past event and the present perfective aspect has been steeply decreasing, whereas the GSCs in which the past tense morpheme denotes a simple state has been decreasing only slowly. As a result, the ratio of the GSCs in which the past tense morpheme denotes a simple state to those with a past tense morpheme as a whole tends to be increasing in the 120 years.

It is clear from the discussion that even if we focus our attention to the GSC with a past tense, the contrast between a stative predicate and a non-stative one is clear, with the former increasing in its ratio and the latter decreasing both in its ratio and frequency. This tendency is identical to what we have seen through all the GSCs without distinguishing whether the predicate is in the past or non-past tense. This means that neither the frequency nor the ratio of the GSC with a past tense morpheme does not *necessarily* constitute positive evidence for a language learner to know that the GSC is TP.

If it does *not* indeed constitute positive evidence, it means that even if there are a certain amount of inputs of the GSC with a past tense among child-directed speeches, they do not help her to identify the GSC as TP (or CP). In fact, if frequency has some impact on acquisition and if the frequency of the GSC with a past tense morpheme competes with that of another construction (for example, the NSC with a past tense morpheme), the increasingly lower grequency of the GSC with the past tense morpheme may prevent a child from fixing the GSC parameter as TP. We will return to this issue in Sect. 6.2.

6. Language Change and Language Acquisition

In this section, we will make a preliminary discussion of the important question of how a language-learning child can acquire the syntactic size of the GSC from positive evidence available for them and why younger generations aquire a smaller structure.

In the previous section, we have discussed how the system of Case-marking on the subjects if adnominal or pseudo-adnominal clauses in Japanese look totally different not only between the 10th and 19th century but also between the late 19th century and the early 21st century. We have shown that the change in the distribution and frequency of the GSC have changed between the last 120 years or so, in the following respects:

(126) a. The GSC with an overt complementizer, which shows the CP status of the GSC, was sporadically found in the early 20th century, but has almost totally disappeared in the 2010s. <Figure 12>
b. The GSC of which the head noun is a formal noun appeared in Edo Era as a replacement of the pseudo-adnominal clauses which had been prevalent in the pre-Meiji Eras, and its frequency has been sharply decreasing, which could also be evidence against the GSC being CP. <Figure 13>
c. The GSC of which the subject is not adjacent to the predicate shows its CP status, but its frequency the GSC has been sharply decreasing. <Figure 14>
d. The GSC of which the subject co-occurs with an Accusative object shows the CP status of the GSC, but its frequency has been sharply decreasing. <Figure 15>
e. The GSC with a nominal predicate shows the CP status of the GSC, but its frequency has been sharply decreasing after the 1950s. <Figure 16>
f. The GSC with an adjective or a stative verb needs only VP or AP, and the frequency of such a stative predicate has little changed in the last 100 years, but because of the decline in the frequency of the other GSC constructions, the ratio of the stative predicates to all the GSCs has been increasing in the last 100 years. <Figure 17, Figure 20, Table 16>
g. Despite (126f), the frequency of the GSC with an individual-level adjective and a Genitive Subject, which shows the TP status of the GSC, has been sharply decreasing throughout the last 120 years. <Figure 17>
h. The GSC with a transitive selmelfactive eventive verb requires TP, and its frequency has been sharply decreasing. <Figures 18 and 20>
i. The GSC with an unaccusative eventive verb requires vP/TP, but its frequency has been sharply decreasing. <Figure 21>
j. The GSC with a passivized verb requires vP/VoiceP, but its frequency has been sharply decreasing. <Figure 22>
k. Among the six semantic types of predicates, the adjectives have been most likely to co-occur with a Genitive subject, after which five types of predicates are aligned in terms of frequency, as follows:
adjective > stative verb > resultant state/habitual = verbs with resultant state > semelfactive event > nominal predicates <Figure 23>
l. The frequency of the GSC with a past tense predicate has been decreasing, but it does not necessarily provide positive evidence for determining whether the GSC is TP or smaller, because one tense morphology does not correspond to one semantics, but, for example, the single past tense morphology means a past event, a present perfective event, or a simple present state, depending on contexts, and that the nonpast tense morphology also means a simple present state, a habitual/repetitive event, or a future semelfactive event.

We argued that all the properties in (126) except for (126l) can be qualified as positive evidence for a language learner to identify the syntactic size the GSC as one of (53) to (56) in the last 100 years. According to my database, all of the GSCs in these constructions are decreasing their frequency and ratio, and only the stative predicates (adjectives, verbs) are increasing their ratio to all the GSCs, because of its slower decline. In a sense, the relatively higher frequency of the GSCs with a stative predicate and the fact that its ratio has been increasing are both outstanding among all the construction-specific descriptions in (126). If the GSC with stative predicates, which is of the highest frequency among all, are available for a child as the most salient positive evidence, they will be more likely to fix the syntactic size of the GSC as VP/AP than any larger syntactic size, independently of the Subset-Principle-based way of fixing the microparametric value. Thus, we need to identify when the inputs of the GSC with other predicates than statives became unavailable as positive evidence, due to their low enough frequency.

Independently of the frequency issue, we have also assumed a Subset-Principle-based view that the default syntactic size of the GSC is VP/AP and that only when there is positive evidence that needs a larger syntactic size available for children do they fix the value of the GSC parameter as (53) to (55). Given the Subset Principle and the fact that the other types of the GSC has been decreasing but not yet disappeared, we need to claim that the steeply diclining type of the GSC does not help a child to fix the value of the parameter in the "larger" value such as D-vP, D-TP, or D-CP, even if there is a certain amount of input data relevant to them. Therefore, in such a context of language change, we need to ask where is

the threshold in terms of frequency below which a language learner cannot use the relevant constructions as positive evidence for fixing their microparametic value. A possible answer to this question is discussed in this section.

6.1 Usage-based models

The Usage-Based Model of Cognitive Linguistics (Langacker 1987, 2000; Bybee 1985, 2001, 2015; Tomasello 2003, 2006; Croft and Cruse 2004) and Construction Grammar (Fillmore Kay and O'Connor 1988; Goldberg 1995, 2006) assume that there is no innately given language-specific knowledge and any linguistic structure of a native language for a language learner is built up based on the basis of the usage of his or her native language which abound as input data in their circumstances, and the learning mechanism includes semantic generalization, analogy, metaphor, metonymy, image schema, semantic bleaching, and so on. Given the usage-based model, it is usually assumed that not only a language-learning child but also an adult is sensitive to the increase in the frequency of a construction and can extend and/or generalize the construction, increase the variety of the subconstructions, or replace one construction by another rather flexibly; as a result, language can change; there is basically no grammar-based constraint against what expression is possible and what is not, but it is our cognitive ability and the frequency of each usage that constrains or expands its variety. If a certain usage raises its frequency, and if there is no blockade that prevents the extension of its usage in our general cognitive capacity, then the usage is predicted to spread across the language community, and can sometimes undergo a further semantic change in a relatively short period of time.

Such a model of language change is in affinity with any semantic change for which a cognitive basis is available. However, as we have fully argued so far, the diachronic change in the GSC is not a generalization or expansion of a construction but a specialization, and moreover, the change is not a semantic one but a syntactic or LCS-based one (such as the declination of the GSC with an overt complementizer, a transitive verb with an Accusative object, or unaccusative eventive verb). As far as the change is a specialization and it is syntactic in nature, the cognitive linguistics or construction grammar would have nothing to say about it, since they do not assume syntactic categories. In fact, even if they assume a few basic syntacitic categories, they would have to leave it unexplained why the change in (126a–e) took place earlier and more radically than the change in (126h–j), or why (126h) took place earlier and more radically than the change in (126j), and so on, since the generalization is based on a hierarchy of functional categories that they do not assume at all. Hence, the Usage-Based Model has nothing to say about what we are concerned about here.

6.2 Principles-and-parameters framework

On the other hand, in the generative linguistics, we have a sufficient basis on which any syntactic change has taken place or can take place. Universal Grammar (UG) is assumed to be innately endowed for all the human beings genetically with a small number of parameters of which the values are underspecified at first, and their values are fixed in the course of language acquisition. Since the advent of the P&P Theory (Chomsky 1981), a vast amount of language variations have been discovered and a large number of possible parameters have been proposed to explain the variations, where the locus of parameters have been limited to morphology and the lexicon (Travis (1984); Fukui (1986); Kuroda (1988); Kayne (1994, 2001)). Since the introduction of the minimalist program of linguistic theory, some more attempts have been made so as to reduce the number and type of parameters (Chomsky (2017); Rizzi (2017)), but the discovery of a large number of cross-linguistic generalizations and typological variations thereafter also have made another trend in which the number of parameters has been more and more increasing (Longobardi and Guardiano (2009); Kayne (2001, 2005, 2010); Baker (2017); Duguine, Irurtzun, and Boeckx (2017); Karimi and Palmarini (2017); Longobardi (2017); Stowell and Massam (2017), among others).

Such an approach to language variation has enhanced our understanding of the nature of language variations that are prevalent in the world. It is not the case, however, that there is no problem. One potential problem is that a generative syntactic approach is generally not as fine-grained as being able to explain any diachronic change, which is often said to be "gradual." Thus, English changed from a V-to-I language to a language without V-to-I raising but with *do*-support, and a generative syntactic account of this fact is that the parameter on Infl/T changed its value from "strong" to "weak." Such a parametric change would have to be instantaneous and drastic, with the effect that the word order of a language changed drastically between two adjacent generations. However, such a hypothetical change does not accord with the linguistic fact. In fact, as noted above, a writer that lived in the midst of a language change, such as William Shakespeare used both the form before change and the one after change in consecutive lines of a single work, as shown in (4). Generally speaking, at a superficial level, a language change seems to take the form of A $\rightarrow$ A&B $\rightarrow$ B. However, such a layered situation as A&B is hardly explained in generative syntactic framework.

As another potential problem, any explanation of language change in generative syntax has to face the "logical problem of language change," as stated below:

(127) The logical problem of language change (Roberts (2007: 451)):
In the context of the idea that language change arises through the language acquisition process, the problem of why acquirers would converge on a system different from that which produces the primary linguistic data they are exposed to: if that system generates the data, how are acquirers led to postulate a distinct system?

(127) states that there is an apparent mismatch between the primary linguistic data a system produces and a system that would be built on the primary linguistic data, which should be identical but is actually not in the process of language change.

In order to resolve this apparent mismatch in a coherent way, the only logical way possible is to assume that not all of the primary linguistic data generated by the parent generation is what the grammar of their native language can generate grammatically: given that the parent generation has already fixed a value of every parameter for their native language when they were children, and once the values were fixed, the I-language that they each have will not change through any language contact or any other factors that could trigger language change, even if their utterances (or E-language) could change through it.[40] Nevertheless, even if an adult could generate a set of linguistic expressions that are not compatible with the I-language of their own grammar, it is still "UG-compatible": a man with a different setting of a parameter would generate such an E-language. In such a way the adults' E-language could continue to change while they are alive, even if their I-language will not change once fixed. Nevertheless, from the viewpoint of a language-learning child, s/he cannot judge whether some of the primary linguistic data they are exposed to can be generated by the adults' I-language (referred to here as PG or "Particular Grammar") or whether they are UG-compatible but not PG-compatible. Hence, when children are exposed to such a mixed input, there occurs the possibility that they are going to fix the value of a parameter in a different way from that of the parent generation. If such a process continues to occur successively, a single language can change in a discernible way in a hundred years or so, as we have observed about the GSC.

In fact, Snyder (2017) argues that a similar thing happened in the history of English where it changed from a language with a V-to-I movement to a language without it but with *do*-support. Moreover, the syntactic change in English was also triggered by the loss of an inflectional morphology: subject-verb agreement. In this respect, at the outset of this article, it was stated that the diachronic change taking place about the GSC, which is also generally understood to be related to he loss of the adnominal inflection, is comparable to what happened in English in the transition from the Late Middle English to Early Modern English.

Now, let us introduce Snyder's (2007) view of language acquisition, which he calls "Grammatical Conservatism (GC)" and a modified version of it proposed by Snyder's (2017), which he calls "Grammatical Conservatism revised (GCr)."

Snyder's (2007) original idea of "Grammatical Conservatism" is partly based on Roeper's (2007) idea that children are sensitive to classes of categories, which means "that they do not make sweeping generalizations for all elements within the same category, for example, all nouns or all verbs, but are conservative learners and only extend the analysis in question from one class or subcategory to another, given positive evidence in the input (or lack of counterevidence)" (Lightfoot and Westergaard (2007: 411)). It is also based of his own observation that in the process of language acquisition, "[r]ather than a steady stream of commission errors, followed eventually by adultlike use of the target structure, the only error-types that occurred with any regularity were omission errors, right up to the point when the fully adultlike structure began to appear" (Snyder (2017: 236)). Hence, Snyder was led to propose that children should have an innate grammar, and that they are subject to "Grammatical Conservatism," as formulated in (128):

(128) Grammatical Conservatism (GC): Children do not make productive, spontaneous use of a new syntactic structure until they have both determined that the structure is permitted in the adult language and identified the adults' grammatical basis for it. (Snyder (2011: 236))

However, a serious counterexample to this view was the logical problem of language acquisition, which no generative linguist could avoid if they want to explain the relation between language change and language acquisition. More specifically, a change from Late Middle English (LME) to Early Modern English (ENE), which was a change from a V-to-I language to a different language using the periphrastic *do* forms in making questions or negation, as in (129):

(129) a. John left not. (LME: OK; EME: *)
b. John did not leave. (EME: */OK; EME: OK)

The emergence of *do*-support is attributed to a language contact with Cornish (McWhorter (2009)). Anyway, it is assumed that *do*-support is synchronically considered a *last resort* operation, which is applied only when there is no other way to save the structure. This means that if V-to-I were available to host a dangling affix on Infl, no *do*-support could apply (Chomsky (1991)), so the grammar that can generate (129a) and the one that can generate (129) are mutually incompatible. Hence, when the shift from (129a) to (129b) was in progress, we need to assume that "children acquired a grammar with a form of *do*-support on the basis of input from adults who did not themselves have such a grammar" (Snyder (2017: 237)), which is a clear counterexample to (128).

Therefore, Snyder (2017) proposes a modified version of GC, as formulated below:

[40]In fact, such a view of the grammar-utterance mismatch is advanced in Snyder (2017).

(130) Grammatical Conservatism, revised (GCr):
Children do not make productive, spontaneous use of a new syntactic structure until they have recognized, in the input, a highly specific hallmark for each of the structure-building options that the structure requires.

Given GCr, all the children have to do is recognize the distinctive hallmark of a particular grammatical operation, before they adopt that operation as part of their own grammar, where "recognizing a distinctive hallmark" means "realizing that the latest input sentence has an unambiguous parse, and that this parse required the give operation." The unambiguous parse made does not have to be fully compatible with the adult's grammar. Hence, the children can acquire a PG slightly different from the PG obtained by their parent generations.

When the two grammatical options coexist in the learner's linguistic environment, how can they choose one option as they grammar? And in that case, why is it that more and more children come to adopt a new form, and an older form comes to be obsolete? For these questions, Snyder argues as follows, where the notion of "frequency" is used crucially (the underscore is mine):[41]

(131) Crucially, when the learner's input contains conflicting data, the GCr learner can be expected to adopt the grammatical option corresponding to the first type of evidence encountered. By adopting that side in the conflict, the learner will presumably be blocked from adopting the alternative choice, whatever it might be. The evidence that reaches the learner is used more frequently by the child's caretakers. Hence, it is precisely when two types of sentences are grammatically *incompatible* that the low frequency of one may lead to its obsolescence. We should expect to see a dwindling number of speakers who acquire the earlier type of grammar, but those speakers will genuinely have a grammar of the older type.
(Snyder (2017: 241))

In other words, Snyder claims that if and only if there are two options Grammar-A and Grammar-B available and when they are incompatible with each other, children are more likely to adopt an option of which the type frequency is higher.

Snyder emphasizes the notion of "grammatically *incompatible*" here because the low frequency of a certain construction does not always lead to obsolescence and he wants to distinguish what took place between the LME and ENE from the fact that in Norwegian, a mixed V2 language, children can correctly learn that no V2 takes place in exclamatives, despite the fact that the exclamative constitutes only 0.4% of parents' child-directed utterances (Lightfoot and Westergaard (2007: 410); Snyder (2017: 240)).

Snyder's conception about the relation between frequency and language acquisition in the context of ongoing language change is straightforwardly applicable to the case of language change in the GSC we are discussing. In face of the fact that the GSC is decreasing its frequency in every construction in which a Genitive subject occurs, the idea that easily comes to my mind is the possibility (i) that there is another construction that competes with the GSC in each construction, (ii) that the GSC is pushed away by the competing construction because a language-learning child is more likely to encounter the competing construction first, rather than the GSC, because of its lower frequency, (iii) that a dwindling number of children are acquiring the grammar that produces the GSC in the particular construction, and (iv) that the microparameter of which the default value is D-VP/AP is less and less likely to be reset to another value that would allow a larger syntactic size of the GSC such as (53) to (55).

Along these conjectures, there are at least three questions to be asked, as in (132):

(132) a. What kind of grammar does the grammar that produces the GSC in a particular construction competes with for frequency?
b. Where is the threshold of frequency below which the GSC in each construction will not be available for a child as positiver evidence for the GSC parameter?
c. When the dwindling of the GSC in each construction is ongoing, how does an adult native speaker judges about the acceptability of the GSC that cannot be generated by the PG they have but could be generated by a PG their parent or grandparent generations could have?

We are at present not in a position to be able to give a definitive answer to any one of these questions, but in what follows, I will present a tentative answer to these questions one by one, so as to trigger a deeper research of the issue of the relation between language change and language acquisition.

[41]Incidentally, what follows is Westergaard's (2014) conception about frequency and language acquisition, which is very similar to Snyder's (2017): "grammar competition should not be the initial hypothesis of a child on exposure to variation, but rather a *last resort*, to be entertained only when children fail to find a distinguishing property between the options … for example in cases where there is free variation in the target grammar" (ibid.: 34). Hence, she supposes that it is only when there is free variation in the target grammar that "children seem to be good at statistical learning, producing the two options with similar frequencies as in the adult data from early on."

6.2.1 What is the competing construction for each type of the GSC?

There are two possible answers to the title of this subsection. The first is "the Nominative Subject Clause (NSC)" and the second is "another GSC with essentially the same meaning and a different morphosyntactic form." In the former case, we predict that the GSC competes with the NSC in terms of frequency and when the former begins to be lower than the latter, the latter is chosen as the unmarked option for the construction in question, so that the former begins to dwindle further. In the latter case, we predict that the GSC competes with a certain type of predicate competes with the GSC with another type of predicate and when the former begins to be lower than the latter in frequency, the latter is chosen as the unmarked option for the construction in question, so that the former begins to dwindle further.

In Sect. 5.3.3, where we first introduced Snyder's (2017) view about the relation between frequency and language acquisition, I suggested the second possibility in explaining why the GSC with a passivized verb has been declining, while the expression "∼*no ok-are-(tei-)ru/ta* N" has recently been gaining higher frequency. There I argued that this is because the counterpart using an unaccusative verb has basically the same meaning and requires a simpler structure, which is preferable in terms of a principle of economy; the expression "∼*no ok-are-(tei-)ru/ta* N" does not conform to this tendency because *oku* 'put' does not have an unaccusative counterpart.

Another support for the second possibility comes from the GSC with an overt complementizer. For example, we feel that the existence of the overt complementizer in (133a) is severely degraded because the complementizer-less counterpart as in (133b) is available:

(133) a.* Taro-no kita toiu jijitu-wa nai.
Taro-Gen came Comp fact-Top Neg
'There is no fact that Taro came.'
b.? Taro-no kita jijitu-wa nai.
Taro-Gen came fact-Top Neg
'There is no fact that Taro came.'

It is highly probable that (133a) was acceptable for those native speakers who lived 120 years ago, but as a result of the clause shrinking, (133a) has become unacceptable for those who adopt the value of the GSC parameter as in (54) to (56).

However, the second possibility cannot be generalized so as to compete the GSC in every construction with another construction that is more frequent, whereby disfavoring a grammar that generates the GSC. Not every subtype of the GSC can compete with a more frequenct than another subtype of it. For example, the GSCs with an unaccusative eventive verb or a semelfactive eventive verb have been decreasing their frequency, but we cannot fine another type of GSC with which they can compete.

Hence, as a more general answer to the question (132a), we adopt the first possibility: the GSCs that occur in a certain construction competes with its NSC counterparts, and if the former is less frequent than the latter, the latter is chosen as the grammatical option for the learner, and the former begins to die out (or possibly, begins to be shoehorned into a storage of idiomatic expressions).

If this possibility is on the right track, we predict that if we compare the frequency of the GSCs with each of the six types of predicates with their NSCs, the frequency of the NSC begins to outnumber the frequency of the GSC from those predicates which require a larger syntactic structure (or a higher functiona head) and are less stative, since the diachronic fact shows that the GSCs that require a higher functional head have been less frequent and disappeared or are disappearing at an earlier time in the 20th century, while the NSC has been gaining its frequency in the same period.

In order to check the validity of this prediction, we chose 3 books each from those published in two decades and compared, in each of them, the frequency of the GSCs with each of the six types of predicates with their Nominative counterparts, respectively. It then turned out that the prediction was exactly borne out.

Consider Table 17 (and also compare it with Table 15). In Table 17, the greened blocks indicate that the frequency of the GSC/NSC is higher than that of the corresponding NSC/GSC in the same period. For example, in the 1900–1920s, the frequency of the GSC is higher than that of the NSC for all the predicates other than the nominal one, though the GSC with the nominal predicate is almost as frequent as the NSC counterpart. Thereafter, for the more eventive predicates the frequency of the NSCs tend to begin to outnumber the frequency of the GSC counterparts in earlier times. Thus, with the verbs denoting a semelfactive event and verbs denoting a repetitive or habitual event, the NSC outnumbered the GSC in the 1930–1940s; with the verbs, denoting a resultant state, the NSC outnumbered the GSC in the 1950–1960s; with the stative verbs, the NSC outnumbered the GSC in the 1970–1980s; and with the adjectives, the adjectives, the GSC outnumbers the NSC even in the 1990–2000s. This shows the same pattern as the distribution of the GSC and the NSC among *Tenseijingo*, which we showed in Table 15, which differs from Table 17 in that it is a synchronic collection rather than a diachronic one.

Table 17. The frequency of the GSC and NSC with each of the six types of predicates that has changed every two decades.

publication years	1900s~1920s	1930s~1940s	1950s~1960s	1970s~1980s	1990s~2000s
average year of publication	1914.8	1937.333	1959.5	1981	1999.333
average year of the birth year of the authors	1880.667	1899.667	1912	1929.333	1936
volumes	3	3	3	3	3
the number of characters	376952	296056	151827	468707	331626
Genitive Subject adnominal clauses (GSC)					
hypothesized syntactic size	CP	TP/vP	vP/VP	vP/VP	AP
adjectives	365	122	162	161	122
stative verbs	160	65	113	126	69
verbs denoting a resultant state	144	57	38	35	16
verbs denoting a repetitive or habitual event	64	10	34	22	11
verbd denoting a semelfactive event	235	82	69	28	11
nomianl predicates	7	3	8	0	0
past tense	218	80	77	76	34
Nominative Subject adnominal clauses (NSC)					
hypothesized syntactic size	CP	CP	CP	CP	CP
adjectival predicates	47	47	75	66	51
stative verbs	54	63	70	91	114
verbs denoting a resultant state	54	47	44	57	58
verbs denoting a repetitive or habitual event	23	30	41	50	49
verbd denoting a semelfactive event	176	149	160	172	140
nomianl predicates	8	10	19	25	15
past tense	132	115	93	124	143

Now, given our argument in Sect. 5.3.4.1, the minimal syntactic size necessary for containing each of the six types of semantic predicates is as in (117). A qualification is that we have classified the complex stative verbs such as (134), which are a combination of a transtive/unergative verb and a stative verbal suffix, into stative verbs, and the complex adjectives such as (135), which are a combination and a transtive/unergative verb and an adjectival predicate:

(134) a. Taro-no yom-e-ru hon
Taro-Gen read-can-Nonpast book
'the book which Taro can read'
b. Taro-no tabe-sugi-ta kudamono
Taro-Gen eat-excess-past fruit
'The fruit which Taro ate too much'

(135) a. Taro-no tabe-tai kudamono
Taro-Gen eat-want fruit
'the fruit which Taro wants to eat'
b. kodomo-no tabe-nikui tabemono
child-Gen eat-hard food
'the food which it is hard for children to eat'

c. kodomo-no tabe-nai yasai
child-Gen eat-not vegetable
'the vegetable which children do not eat'

Hence, let us slightly modify (117), as in (136):

(136) a1. the minimal GSC with adjectives: [$_{AP}$ DP-Gen A]
a2. the minimal GSC with complex adjectives: [$_{AP}$ DP-Gen … [$_{VP}$ (DP-Gen) V]]
b1. the minimal GSC with stative verbs: [$_{VP}$ DP-Gen V]
b2. the minimal GSC with complex stative verbs: [$_{vP}$ DP-Gen … [$_{VP}$ (DP-Gen) V]]
c. the minimal GSC with verbs denoting habitual/repetitive events:
[$_{vP}$ DP-Gen … [$_{L\text{-}AspP(habitual/repetitive)}$ … [$_{VP}$ V (Obj)]]]]]
d. the minimal GSC with verbs denoting resultant states:
([$_{TP}$) … [$_{vP}$ (DP-Gen) … [$_{L\text{-}AspP(telic\&focus)}$ … [$_{VP}$ V (Obj)]]]]](])
e. the minimal GSC with verbs denoting semelfactive events:
[$_{TP}$ … [$_{H\text{-}AspP}$ … [$_{vP}$ (DP-Gen) … [$_{L\text{-}AspP}$ … [$_{VP}$ V (Obj)]]]]]
f. the minimal GSC with nominal predicates:
[$_{CP}$ … [$_{TP}$ DP-Gen [$_{H\text{-}AspP}$ … [$_{vP}$ … [$_{DP}$ (*t*) [$_{VP}$ NP]]]]]]

Hence, if the GSC and the NSC in an adnominal clause compete in terms of frequency, it is reasonable to claim, for example, that the GSC with a semelfactive eventive verb ceases to be positive evidence for the GSC as TP, when its frequency becomes lower than that of the NSC with a semelfactive eventive verb; the GSC with a verb denoting habitual/repetitive event ceases to be positive evidence for the GSC as vP when its frequency becomes lower than that of the NSC with a verb denoting habitual/repetitive event, and so on.

6.2.2 The threshold for a low frequency input to be positive evidence

Given what we have said so far, we are ready to answer the question in (132b):

(132) b. Where is the threshold of frequency below which the GSC in each construction will not be available for a child as positive evidence for the GSC parameter?

Given the syntactic assumption in (136), Snyder's (2017) general hypothesis about frequency and acquisition in (131), and our assumption that the GSC in a construction competes with its NSC counterpart in terms of their frequency, let us propose when and how each GSC construction with a different micro-cue ceased to be positive evidence for fixing the value of the microparameter in (53) to (55), as in (137):

(137) Each GSC construction is qualified as positive evidence for reseting the value of the microparameter from (56), the default value, to (53) to (55), only if:
a. it has a salient syntactic property for the existence of a functional category; and
b. it competes with its NSC counterpart in terms of frequency and outnumbers it.

As for (137a), what follows are some of the (potential) correspondences between the micro-cues and the minimal syntactic structure necessary for it to occur:

(138) a. CP: an adnominal inflection, an overt complementizer, the nominal predicates, a pair of Genitive subject and an Accusative object, a Nominative subject, etc.
b. TP: verbs denoting a semelfactive eventive predicate, past tense with a certain eventive interpretation, TP-adverb, etc.
c. vP/VoiceP: a passivized verb, an unaccusative eventive verb, verbs denoting a habitual/repetitive event, verbs denoting a resultant state, a complex stative verb, etc.
d. VP: a non-derived stative verb.
e. AP: an adjective (either complex or simplex)

Given these construction types and the comparison by construction between the GSC and the corresponding NSC, it is clear that the positive evidence for suggesting a larger syntactic size of the GSC has been gradually decreasing in both quality and quantity, and as of the year 2018, essentially only the GSC with an adjectival predicate can be qualified as such positive evidence. Hence, the GSC parameter for those who were born in the last decade or so will be led to fix it as the default value in (56), with the effect that only the GSC with an adjectival predicate can be acquired as the free alternation with the NSC counterpart, with all other types of the GSC being overridden by the NSC counterparts. This conclusion is also compatible with a result of the three large-scale Internet-based surveys on the acceptability of various

types of GSCs and NSCs made in Niikuni, Wada and Ogawa (2017) and Ogawa, Niikuni and Wada (2017, 2018a, b).

In the end of Sect. 5, we left open the issue of whether the past tense on a predicate is qualified as positive evidence for the GSC as TP. However, Table 17 shows that the GSC with a past tense *could* be positive evidence for the GSC as TP as far as its satisfies both the conditions in (137) in the 1890–1910s, but not in the 1920–1930s, where the frequency of the GSC with a past tense, as well as the GSC with a verb denoting a semelfactive event, were already lower than that of the NSC counterparts, respectively. Hence, given (137) and Table 17, we have to say that the two constructions were no longer qualified as positive evidence for the GSC being TP. If the GSC with a Genitive subject and an individual-level predicate, which also constitutes positive evidence for the GSC as TP, also became lower in frequency than its NSC counterpart, the GSC began to shrink into a smaller category than TP around the period.

6.3 Acceptability judgment on phenomena in which diachronic change in ongoing

Now, let us discuss the third question we posed in (132c):

(132) c. When the dwindling of the GSC in each construction is ongoing, how does an adult native speaker judges about the acceptability of the GSC that cannot be generated by the PG they have but could be generated by a PG their parent or grandparent generations could have?

To the best of my knowledge, there is no previous research about this kind of question, and there is no previous report that gave an answer to this question about any diachronic change that took place in as short as 100 years or so.

However, it is not the case that there is no hint of answering this question. And using the hint, we can present a hypothesis that can answer the question in (113c), which will be sent out for empirical justification or falsification.

In the tradition of generative linguistics (before the advent of the minimalist program), UG was assumed to be a rich modular system in which a number of theories such as Government Theory, Case Theory, Binding Theory, Bounding Theory and so on, interact with each other to filter out a derivation that violates one or more principles and/or filters. In this system, not only was there a various degree of deviance that a derivation resulted in when a principle or filter was violated, but also there was an effect of a severer deviance obtained by an accumulation of more than one violations. First, consider (139) and (140):

(139) a.?? What did you read [a report that John bought *t*]?
b.??What do you wonder [whether John saw t]?
(140) a. ?*Which book did John go to class [after he read *t*]?
b.?*who did [friends of *t*] hit Bill?
(Lasnik and Saito (1984: 11–12))

In (139a, b), the movement of a *wh*-phrase crosses two bounding nodes, one NP and one S in (139a) and two Ss in (139b), and violates Subjacency: more specifically, the former violates the Complex NP Constraint, while the latter violates *Wh*-Island Constraint; in either case, however, a Subjacency violation leads to a mild deviance. On the other hand, in (140a, b), the movement a *wh*-phrase takes place out of a non-complement domain and violates Condition on Extraction Domain (CED), which results in a severer deviance. This minimal pair shows the possibility that a single violation of different constraints leads to a different degree of deviance.

Second, consider (141):

(141) a.??What do you believe [the claim that John bought *t*]?
b.* Why do you believe [the claim that John left *t*]?
(Lasnik and Saito (1984: 22))

In both (141a) and (141b), Subjacency is violated because a *wh*-phrase is extracted across two bounding nodes. In addition, in the LF representation of (141b), the Empty Category Principle (ECP) is also violated, because a trace of movement needs to satisfy the ECP, which is met if it is properly governed, where proper government is satisfied if it is lexically governed or antecedent-governed; the trace of *what* in (141a) can be lexically governed as it is a complement of a verb; the trace of *why* in (141b) cannot be lexically governed, and hence it needs to be antecedent governed, but cannot, as there is a barrier between the matrix Comp and the original trace. Thus, while (141a) violates only Subjacency, (141b) violates both Subjacency and the ECP, leading to a severer deviance.

Among these two examples, what is more relevant for our hypothesis to be tested is the latter. Now that language change generally takes place unidirectionally and gradually, it is naturally expected that different native speakers of which the Particular Grammar has a four-way different value of the GSC parameter will react against the same sentence that can (not) be generated from their grammar with a different level of acceptability.

More specifically, consider the following situation: suppose that a native speaker faces the following sentence (= (14b)), which contains a Genitive subject and an overt complementizer, and hence requires the GSC as CP:

(142) Yo-**no** akeru **toiu** koto-ga soo hayaku kite-wa naranai
night-Gen break **Comp** fact-Nom so early come-Top must not
'the situation in which a day breaks must not come so early, . . . '

This sentence cannot be generated by any one of the grammars of which the GSC parameter has been fixed with the value of TP (= (54)), vP (= (55)), or VP/AP (= (56)). In this sense, those who are alive now should judge (142) as more or less degraded. However, the distance of the unmarked structure generated by their PG differs from each other, depending on which value of the GSC parameter they have chosen. For instance, for those whose unmarked structure of the GSC is VP/AP (i.e., Dialect D speaker), the sentence (142), which requires CP, is deviant from their unmarked structure by three functional categories, but for those whose unmarked structure of the GSC is TP (i.e., Dialect B speaker), (142) is deviant from their unmarked structure by only one functional category. Now, if the degree of deviance from one's unmarked structure is measured out by the number of additional functional categories needed for them to generate, and if violations are cumulative so that the degree of deviance from one's unmarked structure is proportional to the degree of unacceptability, then a Dialect D speaker is predicted to judge (142) as far worse than a Dialect B speaker.

Now, let us formulate what we have just said as a condition on the relation between the degree of deviance from their PG and their acceptability judgment, as in (143):

(143) The Markedness Condition on Acceptability Judgment:
The larger the degree of deviance of a sentence is from the unmarked structure that can be generated by the grammar of a native speaker, the less acceptable he or she is likely to judge the sentence to be.

Given (143), the three types of predicates co-occurring with a Genitive subject will show a three-way distinctive levels of acceptability, especially for the youngest age groups for which unmarked structure for the GSC is VP/AP. Moreover, we also predict that the same youngest age group will, for example, judge a GSC which needs a CP structure (such as (139)) as worse than a GSC which needs a TP (such as (144)):

(144) Nimotu-ga/no todoita jikoku-wa yuugata-no yoji-goro datta.
Package-Nom/Gen arrived time-Top evening-Gen four-o'clock-about was
'The time at which the package arrived was around 4 o'clock in the evening.'

In fact, Niikuni, Wada and Ogawa (2017) and Ogawa, Niikuni and Wada (2017, 2018a, b) have made several large-scale Web-based surveys targeting hundreds of participants who are uniform in their birth place and residence and differ only in the age groups they belong to, and obtained a result that more or less justifies the hypothesis in (143). Recall our discussion in Sect. 5.3.4.1. Also, Ogawa, Niikuni and Wada (2017) tested whether the following three types of GSCs which differ in terms of its minimal syntactic size necessary, are judged differently by three different age groups:

(145) a. PA sentence (which requires a D-AP structure):
Hoppeta-ga/no akai hito-wa, okugai-ni ita-yooda.
cheek-Nom/Gen red person-Top, outdoor-at stayed-seem
'People/A man whose cheek is red seem(s) to have been outdoors.'
b. PDA sentence (which requires a D-TP structure):
Yuuyake-ga/no akai koto-wa, kangaetemiru to fusigi dearu.
sunset-Nom/Gen red fact-Top, on.reflection if strange is
'On reflection, the fact that the evening glow is red is strange.'
c. COP sentence (which requires a D-CP structure):
Keiba-ga/no syumi-dearu oji-wa kyuujitu-ni-wa ie-ni inai.
horse.race-Nom/Gem hobby-is uncle-Top holiday-in home-at is-not
'My uncle whose hobby is betting on horse races is out on vacation.'

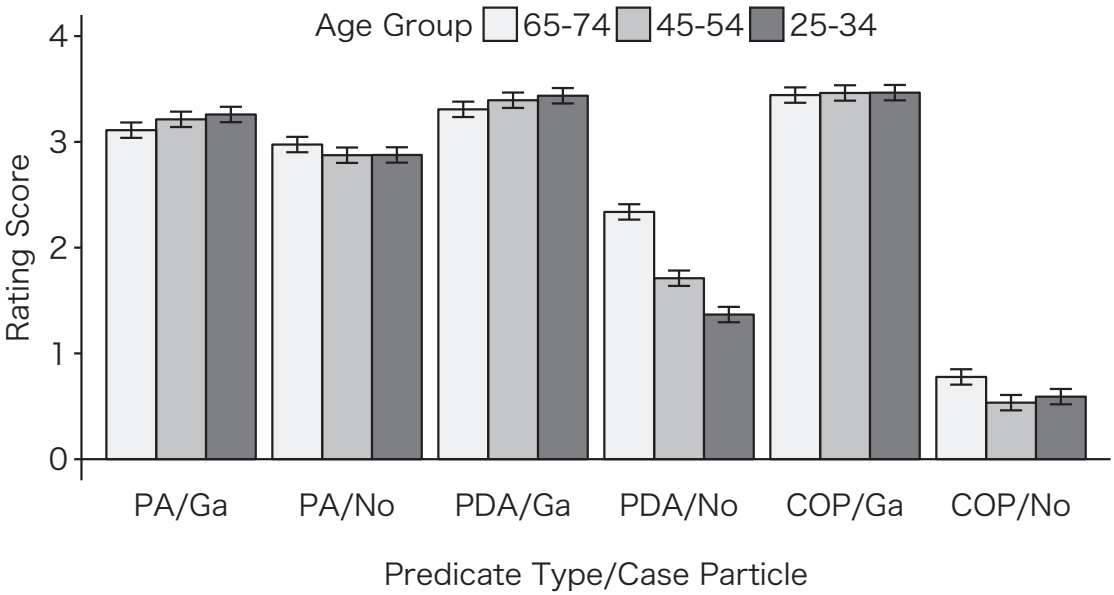


Fig. 27. Acceptability of GSC with three different syntactic types for three different age groups.

So far, we have suggested a hypothesis about how native speakers who differ only in the value of a single parameter tend to make different judgements against a sentence deviant from their PG, and showed that the hypothesis seems to be well-justified empirically, as far as the GSC parameter is concerned. This hypothesis is also a hypothesis about how a language change can proceed gradually without inducing miscommunication between native speakers of different age groups. In this sense, if we could have made a similar survey targeting hundreds of people who lived in the early 17th century and who belonged to three different age groups, we would have obtained a similar result of intergenerational variation as to the (un)acceptability of the V-to-I movement and the (un)acceptability of *do*-support. Although such a survey is impossible without a time-machine, the same procedure could be applied to other linguistic phenomena in which a syntactic change is in progress now. The hypothesis in (143) is in this sense an empirical hypothesis, and hopefully it can be validated by future research.

7. Gradual Language Change and Generative Syntax

Before concluding this article, I will make a brief comment about a critique from outside about the relation between a general fact about language change and the general framework of the P&P theory. On one hand, the well-known fact is that a language change tends to proceed gradually rather than abruptly. On the other hand, given the binary value of a parameter, where the positive and negative values of a parameter lead to the presence and absence of a single phenomenon, respectively, a theory of UG would predict that language change would take place abruptly and radically. Hence, those who criticize the P&P theory (for example Bybee (2015: 241–247)) argues that it cannot explain any fact about language change (see also note 2).

Such a criticism might be unavoidable for the traditional framework that postulated a set of *macroparameters* which are only binary-valued. However, since the advent of the minimalist program, a theory of parameters has evolved considerably, as we summarized in Sect. 2, and the *microparametric* syntax to language variations (Kayne 2001, et seq) and the (micro-)cue-based approach to language change and language acquisition (Lightfoot 2006, 2017; Lightfoot and Westergaard 2007; Westergaard 2014) have brought a number of fruitful results. Moreover, the latest syntactic approaches to grammaticalization are also not so coarse as Bybee (2015) takes it to be (cf. Simpson and Wu (2001); Ogawa (2014a, b); Oxford (2015), among many others).

Although we will not repeat much of what we have already said in the previous sections, in this section, we will make a brief review of how successfully the generative syntax can explain the gradual nature of language change, and why a non-syntactic approach cannot deal with the same set of data and/or generalizations.

Note first that we are assuming the universal functional hierarchy in a clause as follows (cf. Chomsky (1995); Rizzi (1997); Collins (2005), Travis (2010), among others):

(146) $[_{CP}\ [_{TopP}\ [_{FocP}\ [_{TP}\ [_{H\text{-}AspP}\ [_{VoiceP}\ [_{vP}$ SUBJ $[_{L\text{-}AspP}\ [_{VP/AP}$ (OBJ) V/A]]]]]]] C]

Along with these functional categories, we are assuming that the NSC always projects up CP, since Nominative Case checking needs feature inheritance from C to T (Chomsky (2001); Miyagawa 2011). Similarly, the GSC also continued to be CP from the classical Japanese to about 100 years ago. Due to the decline of the adnominal inflection on C,

however, the GSC ceased to be CP and began to shrink toward a smaller syntactic projection headed by V/A. Assuming that the clause shrinking proceeds by truncating functional categories from top to bottom, CP is first eliminated, then FocP, TP, H-AspP, VoiceP, vP, and L-AspP are eliminated in this order. We claimed that this change is a by-product of the interaction of some *economy* principle on structure building and another change in the selectional property of the Genitive-Case-licensing functional head D: D selected CP first, but then it began to select TP, vP, and VP/AP in this order, as shown in (53) to (56), respectively. We argued that this change took place because the positive evidence for the existence of the higher functional categories in the GSC began to be lost earlier than the existence of the lower ones, according to the functional hierarchy in (146). This claim also implies that the microprameter for the GSC is not binary-valued but at least quadruple-valued (cf. Manzini and Wexler (1987)); in fact, it may be more fine-grained if, along with the three core functional categories C, T and v, Foc, H-Asp, Voice, L-Asp, and many others may be involved in the selection by D. If we deny the binary-valued nature of the microparameter and assume a fine-grained functional hierarchy like (146), then the diachronic syntactic change as we argued about the GSC can be described not as a sudden and abrupt change but as a slow and gradual change. Hence, one of the criticization against generative syntax will be obliterated.

Second, independently of the GSC issues, the binary-valued nature of parameters has been controversial since 30 years ago, as Manzini and Wexler (1987) proposed the five-valued parameter on the binding domain and claimed that any parameter can be more than two-valued, as far as the larger and smaller sets of sentences (or, more generally, phrases) generated by each value of the parameter satisfy the Subset Condition. In fact, in a recent approach to language change and language acquisition which Lightfoot and Westergaard (2007) refer to as a "micro-cue" approach, there can be more than two micro-cues (or treelets) for language-learning children to select one from and fix as a component of their languages. Given either the multiple-valued "microparametric" syntax or the "micro-cued" syntax or a combination of them (cf. also Mathieu and Truswell (2017)), our proposal of multi-valued microparameter on the syntactic size of the GSC is not a mere stipulation for describing the gradual change observed in the GSC but is along the recent trends of generative syntax, where generative syntax is no longer a theory that cannot predict a real tendency about diachronic language change.

Third, and most importantly, generative syntax assumes three or four lexical categories (N, V, A (, P)), a rigid extended projection that is built upon one of these lexical categories, and a limited number of functional categories which are universally aligned in a particular order, as part of the innately given knowledge of language (cf. the cartography by Rizzi (1997); Cinque (1999, 2006)). Only by adopting such a discontinuous relation between two or more syntactic categories can we explain a diachronic change along a cline defined in terms of it.

On the other hand, cognitive linguistics, construction grammar, and any other version of the Usage-based Model do not make a categorical definition of a single category nor do they assume any hierarchical (asymmetric) relation between lexical and functional categories or between more than one functional categories. Instead, they tend to assume that there is gradient (or cline) between one category and another in such a way that some word is "more typically X-like," some word has a high degree of "Y-ness," and so on, where X and Y are names of category labels. To show one example of arguments along these lines, Aarts (2007: 110) proposes the gradient of "prepositionality" in the following way:

(147) More typically prepositional > less typically prepositional:
Strandable preposition > 'particles > adverb-like 'there, now, etc.' >
Marginal prepositions > subordinators

Moreover, Aarts proposes the notion of Intersective Gradience (IG), which "involves two form class categories α and β, and obtains where there exists a set γ of elements characterized by a subset of α-like properties and a subset of β-like properties." (p. 124) This notion also covers part of the previously proposed notions such Ross' (1972) notion of "subsquish," Maling's (1983) notion of "transitive adjectives," Anderson's (1997) notion of a property associated with a category "leaked down" into the next "most P-full class," and so on (p. 156–158), but differ from the previous analyses in that Arts tries to gain a numerical judgment on how typically it is prepositional or adjectival.

In such a gradient theory, although a single lexical item and a relation between two or more lexical items may be finer-characterized than in generative syntax, it cannot explain accurately the common synchronic nature of the syntactic structure in which they occur could not be captured accurately, nor can it explain why a diachronic *syntactic* change occurred in the way it did. For instance, if a gradient theory simply states, at an observatory level, that a word that occurs in construction X is 60% prepositional and 40% adjectival (or non-prepositional), then one cannot explain why the word that occurs in the construction X shows such a property, because it simply describes the fact as it seems to be. Such an approach would prevent an explanation of why the word has come to have such a categorial property as a result of language change, or why the word that did not occur in the construction before has come to occur in the construction. For example, it is well-known that both *near* and *like* were more adjective-like some 400 years ago, and even in the last 100 years, *near* has decreased its syntactic properties as an adjective, as shown by the fact that they became unable to co-occur with a preposition to or they became less likely to occur in the synthetic and analytic comparative forms, and so on. Ogawa (2014a) has given a syntactic explanation of how such a reanalysis and

grammaticalization from Adjective to Preposition took place on *near*. However, such a syntactic process of diachronic change would not be explained in the Usage-based Model, without falling into the problem of tautology, as the model uses frequency as one of the primitives for characterizing a category or a construction itself. Hence, even if it could describe *how* a diachronic change took place, it cannot explain *why* such a change took place, or what is the syntactic basis of the diachronic change. This, I argue, is a serious problem with any theory that precludes syntactic categories and syntactic projections from grammar.

All in all, the diachronic syntactic change in the GSC as we discussed in this article will not only support generative syntax but also pose a serious challenge against any theory of language change and/or language acquisition that does not postulate an innately given knowledge of grammar, syntactic categories and microparameters of which the values are underspecified. Although there is no doubt that a change in the frequency of certain expressions can become a trigger for language change, any falsifiable linguistic theory need to ask not only *how* such a change in frequency took place, but also *why* such a change in frequency took place, or more generally, a better linguistic theory would be able to predict how such a change tend to take place and what the future syntactic form of a construction would be like. I believe that in the fields of diachronic change too, a finer description of the "how" and a falsifiable explanation of the "why" is only available under generative syntax.

8. Conclusion

In this article, we chose a syntactic phenomenon in Japanese called "Nominative/Genitive Conversion" (NGC) and characterized both its synchronic nature and the process of its diachronic development/declination as a material for defending the generative syntactic approach to language change and acquisition. More specifically, we showed how the Nominative Case morphology gradually has extended its syntactic distribution and increased its frequency, and conversely has narrowed the syntactic domain in which the (competing) Genitive Case morphology on the subject can occur. Although the Genitive subject was originally more frequently available than the Nominative subject both in a noun phrase and in an adnominal or pseudo-adnominal clause, it ceased to occur in an adnominal clause as freely as the Nominative subject, and in the last 50 years or so it has gradually been shoehorned into D-VP/AP structure (and D-NP structure),[42] as a result of the GSC having been shrinking from D-CP to D-VP/AP in the last 120 years. We argued that this syntactic change has been still in progress as a result of the change in the value of a microparameter on the GSC, and that the microparametric change has been taking place in the course of language acquisition by children, who are sensitive enough to the frequency of the use of Nominative/Genitive Case morphology in a variety of adnominal constructions that differ minimally from each other in the presence or absence of functional categories.

The diachronic change we have observed about the GSC, we may refer to as "stativization," as the more eventive predicates co-occuring with a Genitive Subject are more steeply declining and disappearing earlier. However, we argued that the diachronic change is not semantic but syntactic in nature, and the fact that the predicates with which a Gentive subject can occur seem to be narrowed down to more stative ones is a mere result of the syntactic size of the GSC becoming smaller and smaller.

We also argued that the positive evidence for fixing the value of the GSC parameter is not limited to various overt morphemes on the verbal functional layer but also the "competition" in frequency between the GSC and the corresponding NSCs. The idea of "competition" between grammatically incompatible phenomena was originally proposed by Snyder (2017) as a way to explain a language change that took place in English some 400 years ago (i.e., a change from a V-to-I language to a *do*-support language). I used his idea and proposed that the GSC competes with the NSC because they are grammatically incompatible with each other but share the same semantics. I believe that this is a natural application of Snyder's original idea, as the Nominative Case morphology and the Genitive one cannot occur with a single NP simultaneously. And what has been taking place in the last 100 years is that in an environment where there was a free choice between the two morphemes, the more frequently used one is gaining more popularity and pushing away the other.

As each competition that has occurred between *ga* and *no* has nothing to do with semantics, we also argued that the diachronic change in the GSC is a purely syntactic change that can be explained by UG and (micro-)parameters which can in principle have more than two values, but not by Cognitive Linguistics or any other Usage-based Model. Alongside, we have denied the rigidly-binary-valued nature of parameters, which has been generally been believed in many fields of generative syntax, along the lines Manzini and Wexler (1987) argue. We have argued that our argument may be well compatible with Lightfoot's (2006, 2017) and Lightfoot and Westergaard's (2007) (micro-)cue analyses of language change and language acquisition, and therefore, provide another support for their analyses.

At the same time, given the "diachronic clause shrinking" hypothesis, all the previous analyses of the NGC in Japanese which tried to identify the structure of the GSC as unambiguously CP or a (defective) TP, including

[42]Inversely, a Genitive Case morphology on a non-clausal noun phrase has spread its type frequency and token frequency, as the subject of a pure noun could be makred far more frequently in the Nominative Case some 1000 years ago, though such a use has now been limited to a fixed expression like *wa-ga-kuni* 'our country,' *wa-ga-machi* 'our town.' Probably, the shrinking of the GSC and the narrowing of the distribution of the Genitive subject went on side by side with the establishment of *no* as the Genitive Case morphology, whereby the Nominative morphology and the Genitive one has made their division of labor more and more clearly in the history of Japanese.

Watanabe (1996), Hiraiwa (2002), Miyagawa (1993, 2011, 2013), must be falsified as a synchronic explanation of the NGC, though I believe that they all capture some aspect of the GSC that once held at a point in diachronic language change.

Last but not least, generative syntax has largely evaded the issue of frequency and language acquisition, but our argument in this article clearly shows that a generative syntactic explanation of diachronic change cannot go around the issue. I believe that it is a move toward a better analysis that Westergaard (2014) and Snyder (2017) have begun to discuss the difficult issue from the viuewpoint of generative syntax and that much of my own work hinges on their insightful ideas.

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Appendix

The list of the 130 books from which data were extracted, the author, the title of the book, the author's birth place, the publication year, the year of the author's birth (the yellowed slots below show that the birthplace of the author is in a non-metropolitan prefecture; the greened slots show that it is a augumented version of an older publication; the blued slots show that the author is female.)

	books for education and/or cultivation（45 volumes）				
	Author's name (or Translator's name)	Birth place (raised place)	Book title	birth year of the author	Year of publica-tion
1	Kyoshi Takahama	Ehime	*Haiku-wa Kaku Kaishi Kaku Ajiwau*	1874	1918
2	Shuzo Kuki	Tokyo	*"Iki"-no Kouzou*	1888	1930
3	Kunio Yanagida	Hyogo	*Kagyuu-Kou*	1875	1930
4	Genzaburo Yoshino	Tokyo	*Kimitachi-wa Dou Ikiru Ka?*	1899	1937
3	Kunio Yanagida	Hyogo	*Kagyuu-Kou* (Revized Version)	1875	1942
5	Kyosuke Kindaichi	Iwate	*Nihongo-no Hensen*	1882	1940~ 1949
6	Shioji Hasegawa (translator)	Nara	*Kikuto Katana,* Ruth Benedict	1911	1948
7	Shigeo Sakurai (translator)	Tokyo	*Gunshu Sinri, by* Gustave Le Bon	1907	1952
8	Masataka Takagi (translator)	Tokyo	*Ningen-wa Doko-made Doobutu Ka?*, by Adolf Portmann	1913	1961
9	Konosuke Matsushita	Wakayama	*Michi-o Hiraku*	1894	1968
10	Takeo Doi	Tokyo	*"Amae"-no Kouzou*	1920	1971
11	Michitaro Tada	Kyoto	*Shigusa-no Nihon Bunka*	1924	1972
12	Takao Suzuki	Tokyo	*Kotoba to Bunka*	1926	1973
13	Shigehiko Toyama	Aichi	*Festina Lente*	1923	1981
14	Shigehiko Toyama	Aichi	*Shikou-no Seirigaku*	1923	1983
15	Hisashi Inoue	Yamagata	*Shika-ban Nihongo Bunpou*	1934	1981
16	Naoki Inose	Nagano	*Showa 16-nen-no Haisen*	1946	1983
17	Maskoto Nagao	Mie	*Jinko Chino to Ningen*	1936	1992
18	Nobuhiko Ochiai	Tokyo	*Kettei-ban 2039-nen-no Shinzitu*	1942	1993
19	Atuko Suga	Hyogo	*Chizu-no Nai Michi*	1929	1994
20	Yo Henmi	Miyagi	*Mono Kuu Hitobito*	1944	1994
21	Miyako Takagi	Kyoto	*Seimei-no Geemu*	1952	1994
22	Yuji Tarumi (translator)	Osaka	*Idenshi-no Kawa,* by Richard Dorkins	1942	1995
23	Haruhiko Kindaichi	Tokyo	*Nihongo-o Hansei-site-mimasen Ka?*	1913	2002
24	Rensei Baba	Tokyo	*Novel-Sho-no 100 Nen*	1940	2002
25	Shinji Sanada	Toyama	*Hougen-no Nihon Chizu Kotoba-no tabi*	1946	2002
26	Takashi Saito	Shizuoka	*Dokusho-Ryoku*	1960	2002
27	Takeshi Yoro	Kanagawa	*Ichiban Daiji-na Koto*	1937	2003

28	Tatsuru Uchida	Tokyo	*Machiba-no Kyoiku-ron*	1950	2000~ 2006
29	Ken'ichiro Mogi	Tokyo	*Ishikito-wa Nani Ka?*	1962	2003
30	Hiroyuki Agawa	Hiroshima	*Shokumi Buubuu-roku*	1920	2004
31	Masahiko Fujiwara	China	*Kokka-no Hinkaku*	1943	2005
32	Junko Sakai	Tokyo	*Miyako to Miyako*	1966	2006
33	Takashi Okada	Kagawa	*Nounai-Osen-kara-no Dasshutsu*	1960	2007
34	Sin'ichi Fukuoka	Tokyo	*Sekai-wa Wakete-mo Wakaranai*	1959	2009
35	Hideho Kindaichi	Tokyo	*Kotoba-no Koto-Bakkasi*	1953	2010
36	Eisuke Hasegawa	Tokyo	*Hatarakanai Ari-ni Igi-ga Aru*	1961	2010
37	Kazuhisa Todayama	Tokyo	*"Kagakuteki Shikou"-no Lesson*	1958	2011
38	Marie Kondo	Tokyo	*Jinsei-ga Tokimeku Katazuke-no Mahou*	1984	2011
39	Yoshiharu Habu	Saitama	*Chokkan-Ryoku*	1970	2012
40	Naoki Kugihara	Fukuoka	*Hito-wa Naze Syuudan-ni Naru to Namakeru No-Ka?*	1952	2013
41	Kenji Asai	Aichi	*Kyoto Nazotoki Machi-Aruki*	1945	2014
42	Sota Kimura	Kanagawa	*Terebi-ga Tutaenai Kenpou-no Hanashi*	1980	2014
43	Naoki Hyakuta	Osaka	*Dai-Hougen*	1956	2015
44	Yuichi Goza	Tokyo	*Ounin-no Ran*	1980	2016
45	Jun Nara	Tokyo	*Jinkou-Cjinou-o Koeru Ningen-no Tsuyomi To-wa?*	1982?	2017
	Novels and Essays		(57 volumes)		
1	Ichiyo Higuchi	Tokyo	*Nigorie, Takekurabe*	1872	1895
2	Soseki Natsume	Tokyo	*Sansiro*	1867	1908
3	Naoya Shiga	Miyagi (Tokyo)	short pieces of his fictions in the 1910s, including *Abashiri-made*	1883	1904~ 1909
4	Ryunosuke Akutagawa	Tokyo	short pieces of his fictions in the 1910s, including *Rashomon*	1892	1915~ 1919
5	Naoya Shiga	Miyagi (Tokyo)	short pieces of his fictions in the 1910s, including *Kinosaki-nite*	1883	1910~ 1919
6	Ryunosuke Akutagawa	Tokyo	short pieces of his fictions in the 1920s, including *Inu to Fue*	1892	1920~ 1924
7	Naoya Shiga	Miyagi (Tokyo)	short pieces of his fictions in the 1920s, including *Amagaeru*	1883	1920~ 1926
8	Kenji Miyazawa	Iwate	*Ginga-tetsudou-no Yoru*	1896	1931
9	Ranpo Edogawa	Mie	*Shounen Tanteidan*	1894	1937
10	Osamu Dazai	Aomori	*Tsugaru*	1909	1944
11	Kenji Takahashi (translator)	Tokyo	*Haru-no Arashi,* by Hermann Karl Hesse	1902	1950

12	Kenji Takahashi (translator)	Tokyo	*Sharin-no Shita*, by Hermann Karl Hesse	1902	1951
13	Hyakken Uchida	Okayama	*Ahou Ressha*	1889	1952
14	Hanako Muraoka	Yamanashi	*Kurisumasu Kyaroru*, by Charles John Huffam Dickens	1893	1952
15	Hyakken Uchida	Okayama	*Daini Ahou Ressha*	1889	1953
16	Hiroyuki Agawa	Hiroshima	*Ohayaku Gojyosha Negaimasu*	1920	1952~ 1958
17	Seicho Matsumoto	Hiroshima (Fukuoka)	*Ten to Sen*	1909	1958
18	Hiroyuki Agawa	Hiroshima	*Sora-tabi, Guna-tabi, Kisha-no Tabi*	1920	1960
19	Junnosuke Yoshiyuki	Okayama	*Suna-no Ue-no Shokubutugun*	1924	1964
20	Morio Kita	Tokyo	*Dokutoru-Manbou Tochuu-gesha*	1927	1966
21	Masuji Ibuse	Hiroshima	*Kuroi Ame*	1898	1966
22	Shigeru Ekuni	Tokyo	*Ahou Ryokou*	1934	1971~ 1972
23	Morio Kita	Tokyo	*Manbou Shuyuken*	1927	1976
24	Shunzo Miyawaki	Saitama	*Jikokuhyou Niman-kiro*	1926	1976
25	Kyotaro Nishimura	Tokyo	*Sindai-tokkyuu Satsujin-Jiken*	1930	1978
26	Shunzo Miyawaki	Saitama	*Kisha-tabi 12-ka-getsu*	1926	1979
27	Shunzo Miyawaki	Saitama	*Jikokuhyou Showa-Si*	1926	1980
28	Kyotaro Nishimura	Tokyo	*Shuchaku-Eki Satsujin-Jiken*	1930	1980
29	Naoki Tanemura	Shiga	*Kishatabi-Nisshi 1982/3*	1936	1985
30	Shunzo Miyawaki	Saitama	*Satsui-no Fuukei*	1926	1985
31	Shunzo Miyawaki	Saitama	*Indo Tetsudo-Ryokou*	1926	1990
32	Yasutaka Tsutsui	Osaka	*Bungakubu Tadano-Kyoju*	1934	1992
33	Momoko Sakura	Shizuoka	*Sarunokosikake*	1965	1992
34	Naoki Tanemura	Shiga	*Ekimae-Onsen Kisha-no Tabi*	1936	1993
35	Yuka Murayama	Tokyo	*Tensi-no Tamago*	1964	1993
36	Kyotaro Nishimura	Tokyo	*Sendai-Eki Satsujin-Jiken*	1930	1995
37	Eiko Kadono	Tokyo	*Maho-no Takkyuubin*	1935	1995
38	Shunzo Miyawaki	Saitama	*Yooroppa Tetsudo-Ryokou*	1926	1996
27	Shunzo Miyawaki	Saitama	*Zikokuhyou-Showa-Si* (the enlarged edition)	1926	1997
39	Jiro Asada	Tokyo	*Metoro-ni Notte*	1951	1997
40	Keigo Higasino	Osaka	*Himitsu*	1958	1998
41	Banana Yoshimoto	Tokyo	*Furin to Nanbei*	1964	2000
42	Shunzo Miyawaki	Saitama	*Noru Tabi, Yomu Tabi*	1926	2001
43	Risa Wataya	Kyoto	*Insutooru*	1984	2001

44	Masashi Sada	Nagasaki	*Bizan*	1952	2004
45	Kazumi Taniguchi	Kanagawa	*Rookaru-sen Hitori-Tabi*	1958	2004
46	Junko Sakai	Tokyo	Joshi To Tetsudo	1966	2004
47	Naomi Yano	Hokkaido	*Onna-Hitori-no Tetsudou-tabi (Higashinihon-hen & Nishinihon-hen)*	1967	2008
48	Toko Miyawaki	Tokyo	*Miyawaki Shunzo-ga Aishita Reeru-no Hibiki-o Otte*	1968	2008
49	Shin Ashihara	Mie	*60-sai-kara-no Seishun-18*	1946	2009
50	Mizuki Tsujimura	Yamanashi	*Tsunagu*	1980	2010
51	Jun'ichi Sugiyama	Tokyo	*Boku-wa Noritetsu Odekake-Biyori*	1967	2009~ 2013
52	Kazumi Tanigawa	Kanagawa	*Waribiki-Kippu-de Meguru Rookaru-sen-no Tabi*	1958	2013
53	Kaori Fujino	Kyoto	*Tsume To Me*	1980	2013
54	Takahiro Shindo	Miyazaki	*Himitsu-Kessha-ni Gochuui-o*	1988	2013
55	Kenji Asai	Aichi	*50-sai-kara-no "Seishun-18-Kippu"-no Tabi*	1945	2014
56	Takashi Noda	Aichi	*Tetsu-wa Konna Tabi-o Siteiru*	1952	2014
57	Naoki Matayoshi	Osaka	*Hibana*	1980	2015
	Autobiography, Biography		(28 volumes)		
1	Yukichi Fukuzawa	Osaka	*Fukuou Jiden*	1835	1897
2	Tadayoshi Sakurai	Ehime	*Shogun Nogi*	1879	1928
3	Kiyoshi Miki	Hyogo	*Dokusho To Jinsei*	1897	1931~ 1941
4	Kotaro Takamura	Tokyo	*Sakka-no Jiden (9)*	1883	1940~ 1955
5	Konosuke Matsushita	Wakayama	*Yume-o Sodateru (Watashi-no Rirekisho 1956)*	1894	1956
6	Taro Okamoto	Kanagawa	*Geijutu To Seishun*	1911	1956
7	Hideki Yukawa	Tokyo (Kyoto)	*Tabibito*	1907	1960
8	Soichiro Honda	Shizuoka	*Yume-o Chikara-ni (Watashi-no Rirekisho 1962)*	1906	1962
9	Kyosuke Kindaichi	Iwate	*Watashi-no Aruite-kita Michi*	1882	1968
5	Konosuke Matsushita	Wakayama	*Yume-o Chikara-ni (Watashi-no Rirekisho 1976)*	1894	1976
10	Sin'ichiro Tomonaga	Tokyo	*Waga Shi, Waga Tomo*	1906	1976
11	Tetsuko Kuroyanagi	Tokyo	*Madogiwa-no Totto-chan*	1933	1979~ 1991
12	Yoshimasa Murasaki	Yamaguchi	*Saru-Mawashi Sennnen-no Tabi*	1933	1983
13	Eiji Toyoda	Aichi	*Ketsudan*	1913	1985

14	Shunzo Miyawaki	Saitama	*Watashi-no Tochuu-Gesha-Jinsei*	1926	1986
15	Morio Kita	Tokyo	*Manbou Kazoku Koukai-ki*	1927	1986
16	Nobuhiko Ochiai	Tokyo	*Amerika Yo!, Amerika Yo !*	1942	1987
17	Haruhiko Kindaichi	Tokyo	*Wa-ga Seishun-no Ki*	1913	1994
18	Hiroyoshi Ishibashi	Chiba	*Sekai-Saidai-no Kishou-Jouhou-Gaisha-ni Natta Hi*	1947	1995
19	Naoko Takahashi	Gifu	*Kaze-ni Natta Hi*	1972	2001
20	Sen'ichi Hoshino	Okayama	*Mayotta Toki-wa Me-ni Deru!*	1947	2002
21	Toko Miyawaki	Tokyo	*ChiChi MiyawakiShunzo-e-no Tabi*	1968	2006
22	Hideki Matsui	Ishikawa	*Fudou-Shin*	1974	2007
23	Hiroshi Konno	Shizuoka	*Kougaku-bu Hirano Kyoju*	1940	2011
24	Tadao Ando	Osaka	*Shigoto-o Tukuru (Watashi-no Rirekisho 2011)*	1947	2011
25	Hideho Kindaichi	Tokyo	*Kindaichi-ke, Nihongo Hyakunen-no Himitsu*	1953	2014
26	Marin Minamiya	Kanagawa	*Bouken-no Sho*	1996	2016
27	Koutaro Ould Maeno	Akita	*Batta-o Taoshi-ni Afurika-e*	1980	2017
28	Hiroko Yamashita	China (Osaka)	*Ame-Agari-ni Saku Hikmawari-noyouni*	1992	2014