Classifying nominalization in cross-linguistic perspective: Introduction to special issue I

Kazuhiro Kawachi[1], Prashant Pardeshi[2], Yu Li[3], and Maho Naito[4]

1. INTRODUCTION

This special issue presents a collection of articles reporting on the use of classifying nominalizers—especially so-called classifiers and gender markers—in deriving grammatical nominalizations in various languages, as framed within the nominalization theory proposed in Shibatani (2009, 2017, 2018a, 2018b, 2019, 2021, 2023; Shibatani and Ferreira this issue). Each article examines whether classifying nominalizers are used obligatorily, optionally, or not at all with different types of structures to derive grammatical nominalizations functioning as the head of a noun phrase or as a nominal modifier, and tests one of Shibatani's hypotheses concerning their distribution across these structure types. According to Shibatani's (2021, 2023) hypothesis, which specifically concerns classifying nominalizers including classifiers and gender markers, these markers are more likely to occur obligatorily with structures that rank higher on the implicational hierarchy 'NUM ((cardinal) numerals) > DEM (demonstratives) > GEN (genitive noun phrases) > ADJ (adjectives) > V-based NMLZ (verb-based nominalizations such as relative clauses)' than those lower on the scale, while their function remains the same,[5] and are more likely to occur with a given type of structure when it is used as the head of a noun phrase (noun-phrase use, or NP use) than when it is used to modify a nominal (modification use). While this hypothesis has diachronic implications for the development of the use of classifying nominalizers (Shibatani and Shigeno 2013), most of the articles in this issue focus primarily on the synchronic distribution of these marking patterns.

This issue comprises two comparative studies—one on Dravidian languages in India and the other on Tukanoan languages in South America—and fifteen investigations of individual languages: four in Africa, nine in Asia, and two in Europe. For two of the nine Asian languages (Marathi and Zauzou), two dialects were investigated.

This collection makes a meaningful contribution to typological research on nominal classification. It fills gaps in data concerning the marking of different types of structures with classifying nominalizers, which serve to nominalize the structures and classify their

[1] Faculty of Business and Commerce, Keio University, 4-1-1 Hiyoshi, Koohoku-ku, Yokohama, Kanagawa 223-8521, Japan. email: kawachi@keio.jp
[2] Research Department, National Institute for Japanese Language and Linguistics, 10-2 Midoricho, Tachikawa, Tokyo 190-8561, Japan.
[3] School of Chinese Language and Literature, Wuhan University, A218 Zhenhua Building, Wuhan, Hubei, China.
[4] Department of Linguistics, Graduate School/Faculty of Arts and Letters, Tohoku University, 27-1 Aoba-ku, Kawauchi, Sendai, Miyagi 980-8576, Japan.
[5] In this hierarchy, numerals are restricted to cardinal numerals, and Shibatani does not include ordinal numerals in it. Nevertheless, it would be interesting to see how ordinal numerals are marked with classifying nominalizers, similar to or differently from cardinal numerals and other types of structures. Some of the articles include data on ordinal numerals as well. As for verb-based nominalizations, each article presents data on relative clauses at least, and some articles include data also on complement clauses and other language-specific verb-based nominalizations such as verb participles.

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denotations. It also enables language-internal and cross-linguistic comparisons within a unified framework, namely, Shibatani's Dynamic Functional Typology. The significance of these contributions is evident in the following respects. First, the reports on modern languages, which are primarily based on speaker elicitations, provide information on whether the use of classifying nominalizers is obligatory, optional, or disallowed—information that is often difficult to obtain from the existing literature. Second, all reports include data on the NP use of grammatical nominalizations, which are rarely documented even in comprehensive reference grammars. Third, many of the articles describe classifying nominalizers in relatively understudied languages, thereby expanding the empirical foundation of typological research. Fourth, some reports examine languages that possess more than one type of classifying nominalizer—whether different types of classifiers, different types of gender markers, or both—enabling systematic comparisons of their distribution and function within the same language. Fifth, because all the articles adopt a common analytical framework, they facilitate consistent cross-linguistic comparisons of the use of classifying nominalizers with different types of structures.

Before moving to the next section, a word of caution about terminology is necessary. Shibatani (also Shibatani and Ferreira this issue) argues that so-called classifiers and gender markers do not constitute discrete categories, traditionally defined in terms of referent categorization for counting (e.g., Greenberg 1974, Allan 1977) and agreement with a head noun (e.g., Corbett 1991), respectively. Instead, classifier marking and gender marking can be treated as a unified phenomenon forming a continuum, with gender markers being more grammaticalized than classifiers (Craig 1986, Grinevald 2000, 2002, Grinevald and Seifart 2004).[6] First, the use of classifiers is not limited to numerals but often extends to structures such as demonstratives and genitive noun phrases, and even to adjectives and verb-based nominalizations (e.g., Guoli Zauzou in Li and Miyagishi this issue, Jiangmo Zauzou in Miyagishi and Li this issue, Assamese in Bez this issue). Second, numerals are not exclusively associated with classifiers; in many languages with grammatical gender, they are also typically accompanied by gender markers. Third, in some languages, gender is not expressed through agreement at all. Fourth, what appears to be agreement frequently emerges across noun phrase components involving classifiers. Finally, there are languages whose classifying nominalizers cannot clearly be categorized as either classifiers or gender markers. For example, as shown by Shibatani and Ferreira (this issue), and by François (2017: 322–325) in his discussion of 'gender classifiers' in Hiw, an Oceanic language of northern Vanuatu (ISO 639-3: hiw), some markers express humanity, gender, and number simultaneously. Another example is Swedish, which has traditionally been characterized as having gender. It distinguishes between common and neuter, but common gender results from the merger of the previously distinct feminine and masculine genders, and animates tend to be categorized as common. Thus, the Swedish system is more like an animacy-based classifier system. We follow the view that certain classifying nominalizers defy clear classification as either classifiers or gender markers. Nevertheless, most of the articles in the present issue continue to use the terms 'classifiers' and 'gender

[6] So-called classifiers and gender markers also each differ in the degree of their grammaticalization. Classifiers can function as nominals or can form a closed class. Gender markers may be based on biological gender and apply only to human or animate referents or may be extended to inanimate referents.

markers' as traditionally employed, recognizing them as useful descriptive labels. These could alternatively be replaced by more specific terms, such as 'shape-based or animacy-based/humanhood-based classifying nominalizers' and 'biological gender-based classifying nominalizers', or simply 'inanimate classifiers' (e.g., shape, size, consistency, arrangement, function) and 'animate classifiers' (e.g., human/non-human, female/male), respectively. Thus, in this issue, the terms 'classifiers' and 'gender markers', when used, should be understood as implicitly prefaced by 'so-called', even when this qualifier is not explicitly stated.

2. BACKGROUND: OVERVIEW OF SHIBATANI'S NOMINALIZATION THEORY AND HIS HYPOTHESES

Traditionally, the term 'nominalization' has been used in two senses. In one sense, it refers to a morphological process of derivational affixation, through which nouns are formed from words in other parts of speech, especially verbs (e.g., *sing* → *singer*). In the other sense, it refers to a syntactic process involving the use of a form that combines with an element that may or may not contain a noun to constitute a noun phrase (e.g., *the enemy's destruction of the city*).[7] Both processes involve verb-based or predicate-based nominalization.

By contrast, Shibatani's nominalization theory distinguishes between two types of nominalization: verb-based and nominal-based. This theory not only takes nominal-based nominalization into account but also places particular emphasis on it. Table 1 summarizes Shibatani's conception of nominalization with English examples. According to him, whether verb-based or nominal-based, nominal structures derived through the process of nominalization can serve two functions: NP use, in which a nominalization serves as the head of a noun phrase (e.g., (1)), and modification use (Mod use), in which a nominalization modifies a nominal (e.g., (2)). (Both verb-based and nominal-based nominalizations in NP use are characterized as 'noun phrases without nouns' by Dryer 2004.[8]) Nominalizations in either use have denotations similar to nouns. The denotation of a nominalization (e.g., 'four entities') is metonymically associated with that of its base structure (e.g., 'four' as the denotation of *yi³¹*), and in modification use, it restricts the denotation of the nominals that it modifies (e.g., *nia⁵³ni³³* 'cats').

Guoli Zauzou

(1) ŋu⁵⁵ yi³¹ ko³³ na³³
1SG four CLF:animal like
'I want four (animal entities).' (adapted from Li and Miyagishi this issue: 139)

(2) ŋu⁵⁵ nia⁵³ni³³ yi³¹ ko³³ na³³
1SG cat four CLF:animal like
'I want four cats.' (Li and Miyagishi this issue: 139)

[7] The distinction between the two processes is not clear-cut, as the syntactic process can also involve the morphological process (e.g., *destruct* → *destruction* in *the enemy's destruction of the city*).

[8] 'Nouns' in 'noun phrases without nouns' refers to so-called 'head nouns', which are absent, for example, in a genitive noun phrase in noun-phrase use (e.g., *John's*). See Dryer (2004) for his arguments against the traditional analyses that assume the existence of a head in a noun phrase.

Table 1. Illustration of Shibatani's conception of nominalization with English examples (based on Shibatani 2019: 39)

Type/subtype of nominalization			Noun-phrase use	Modification use
Verb-based	Lexical nomi-naliza-tion	Event nominal-ization	*(the) [flight] (lasted three hours), (the) [employment] (of Bill)*	*[flight] schedule*
		Argument nominal-ization	*(a) [cook], (a) [judge], (an) [employer], (an) [employee]*	*[employee] benefits*
	Gram-matical nomi-naliza-tion	Event nomi-naliza-tion	*[[(that) John employed Bill]*$_{NMLZ}$*]*$_{NP}$, *[[(John('s) employing Bill]*$_{NMLZ}$*]*$_{NP}$, *[[to employ Bill]*$_{NMLZ}$*]*$_{NP}$	*[the fact [(that) John employed Bill]*$_{NMLZ}$*]*$_{NP}$
		Argument nomi-naliza-tion	*[[what broke John]*$_{NMLZ}$*]*$_{NP}$, *[[what John broke]*$_{NMLZ}$*]*$_{NP}$	*[(the one) [who employs Bill]*$_{NMLZ}$*]*$_{NP}$, *[(the one) [who(m) John employs]*$_{NMLZ}$*]*$_{NP}$, *[(the one) [which broke John]*$_{NMLZ}$*]*$_{NP}$, *[(the one) [which John broke]*$_{NMLZ}$*]*$_{NP}$
Nominal-based	Lexical nominalization		*[childhood]*	*[childhood] memories*
	Grammatical nominalization		*I bought [[three]*$_{NMLZ}$*]*$_{NP}$/ *[[those]*$_{NMLZ}$*]*$_{NP}$/ *[[those three]*$_{NMLZ}$*]*$_{NP}$	*I bought [[three]*$_{NMLZ}$ *cars]*$_{NP}$ /*[[those]*$_{NMLZ}$ *cars]*$_{NP}$/ *[[those]*$_{NMLZ}$ *[three]*$_{NMLZ}$ *cars]*$_{NP}$
			[John's/His]$_{NMLZ}$*]*$_{NP}$ *(is ...)*	*[[John's]*$_{NMLZ}$ *book]*$_{NP}$
			[cotton]$_{NMLZ}$*]*$_{NP}$	*[[cotton]*$_{NMLZ}$ *shirt]*$_{NP}$

There are two types of verb-based nominalization: lexical and grammatical. Lexical verb-based nominalization converts a non-nominal element—such as a verb or an adjective—into a noun, whereas grammatical verb-based nominalization typically produces a complex nominal structure headed by a nominalized verb form, possibly accompanied by its argument nominals.

Both lexical and grammatical verb-based nominalization can be further divided into event and argument types. Event nominalization derives a nominal denoting an event, or related notions such as a fact or proposition metonymically associated with that event. Argument nominalization, by contrast, produces a nominal denoting one of the verb's arguments or other entities metonymically linked to the verb's meaning.

Nominal-based nominalization can also be lexical or grammatical. Lexical nominal-based nominalizations are nouns formed from other nouns. Grammatical nominal-based

nominalizations are nominals derived from base structures such as numerals, demonstratives, and genitive noun phrases, with their denotations coming from these structures.

Shibatani's theory focuses primarily on grammatical nominalizations, encompassing both nominal-based and verb-based types. He proposes two main hypotheses. The first posits that nominalization markers develop diachronically from nominal-based to verb-based nominalizations, and from NP use to modification use. This argument is supported by the observation that there are more attested marking patterns for nominal-based nominalizations than for verb-based ones, and more for NP use than for modification use. In contrast to traditional analyses, which treat grammatical nominalizations in modification use as basic and those in NP use as derivative (often through omission of a head noun), Shibatani's analysis begins with NP use.

Table 2. Shibatani's (2023: 21) typology of nominalization

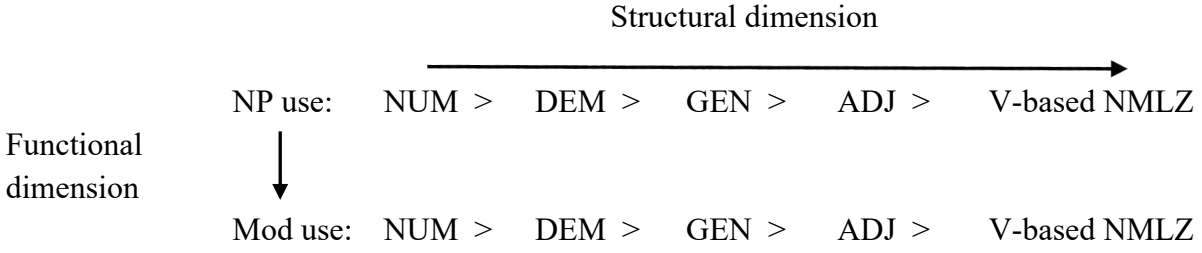
<table>
<tr><td rowspan="8">Nominalization</td><td rowspan="6">Non-classifying</td><td colspan="2">No marking</td></tr>
<tr><td rowspan="5">Marking</td><td>Verbal/nominal inflection</td></tr>
<tr><td>Derivational affix</td></tr>
<tr><td>“conjunction”, “relativizer”, “subordinator”</td></tr>
<tr><td>Adnominal particle</td></tr>
<tr><td>Suprasegmental feature</td></tr>
<tr><td rowspan="3">Classifying</td><td colspan="2">No marking</td></tr>
<tr><td rowspan="2">Marking</td><td>Less grammaticalized (aka “(numeral) classifier system”)</td></tr>
<tr><td>More grammaticalized (aka “gender system”, “noun-class system”)</td></tr>
</table>

Shibatani (2021, 2023) recently developed an additional hypothesis concerning classifying nominalizers. He distinguishes between two types of nominalization—non-classifying and classifying—as shown in Table 2. Classifying nominalizers include classifiers and grammatical gender markers, encompassing noun-class markers. Like Craig (1986), Grinevald (2000, 2002), and Grinevald and Seifart (2004), Shibatani views these markers as forming a continuum—from less grammaticalized classifiers, which are semantically associated with the properties of noun-phrase referents, to more grammaticalized genders, which are largely conventionalized with individual lexical items (aside from their association with biological gender), with noun classes occupying an intermediate position. Shibatani further explores this continuum in the context of nominalization, observing that classifiers and gender markers exhibit similar cross-linguistic patterns in marking structures in order to nominalize them. For illustrative examples from both classifier-marking and gender-marking languages that demonstrate this parallelism, see Shibatani (2023) and Shibatani and Ferreira

(this issue). Classifying nominalizers nominalize a base structure to derive a nominalization and categorize its denotation according to the language's classification system (e.g., 'three feminine-class entities'). (By contrast, non-classifying nominalizers only nominalize a base structure to derive a nominalization, without categorizing its denotation.)

Using the implicational hierarchy shown in Figure 1 (the Shibatani hierarchy), Shibatani proposes a hypothesis about the synchronic distribution of classifying nominalizers: (i) along the structural dimension, classifying nominalizers are more likely to occur obligatorily with structures that rank higher on the implicational hierarchy than with those lower on the hierarchy, while their function remains the same; and (ii) along the functional dimension, they are more likely to occur obligatorily with a given type of structure when it serves as the head of a noun phrase (NP use) than when it is used to modify a nominal (modification use).

Figure 1. Hierarchy constraining classifying nominalizer marking (adapted from Shibatani 2023: 35)



Shibatani also hypothesizes about the diachronic development of classifying nominalizers: their use extends from numerals downward (i.e., rightward in the figure) to other types of structures along the structural dimension, and from NP use to modification use along the functional dimension.[9] This hypothesis is based on the observation that classifying nominalizers are more commonly and obligatorily applied to structures higher on the hierarchy than to those lower down, and that they are more likely to be obligatorily used with a given structure in NP use than in modification use.

Thus, this hypothesis not only addresses the synchronic distribution of classifying-nominalizer marking along the implicational hierarchy, but also carries diachronic implications for how such marking develops across both the structural and functional dimensions of the hierarchy. Notably, the proposed patterns of development are expected to apply not only to so-called numeral classifiers, which are prototypically used with numerals, but also to other kinds of classifiers and to gender markers.

Shibatani's (2021, 2023) hypothesis is grounded in his analysis of data from a wide range of languages. However, only a small number of in-depth studies on grammatical nominalizations in individual languages have so far been conducted within his framework (e.g., Shirai 2022, Pardeshi and Shibatani 2023). To evaluate this hypothesis more fully, it must be tested against data from a broader range of languages. To this end, the articles in the present issue present data from both individual languages and well-defined language families, examining which types of structures are marked with classifying nominalizers and whether

[9] The diachronic development of nominalization marking using non-classifying nominalizers—from noun-phrase use to modification use—was proposed earlier by Shibatani and Shigeno (2013).

such marking is obligatory or optional. All contributions provide synchronic analyses of marking patterns involving classifying nominalizers, with some also addressing their diachronic development. Diachronic analysis is particularly important, as Shibatani's hypothesis concerns not only synchronic marking patterns but also their historical development. For such investigation, comparisons among dialects and closely related languages are especially valuable—a perspective adopted by several of the contributions, Shibatani and Ferreira inter alia.

3. LANGUAGES DOCUMENTED AND CONTRIBUTORS IN THE PRESENT ISSUE

Table 3 summarizes the contents of this issue, listing the names of the languages (or language families) or dialects documented in this issue, along with their genetic and geographical information, ISO 639-3 codes, and the names of the contributors. Article 1 investigates a language family in which the traditional typological distinction between classifiers and gender markers is called into question. Articles 2–7 and 13 describe languages traditionally identified as having classifiers. Articles 8–12 report on languages with what are commonly termed gender markers (in the case of Swahili in Article 11, noun-class markers). Articles 14–17 examine languages that possess both classifiers and gender markers.

Table 3. Languages documented in the present issue and their contributors

Article	Language, language family, dialect	Country/ countries	ISO 639-3	Contributor(s)
1	Tukanoan languages	Colombia, Brazil, Ecuador, and Peru	Tuyuka: tue, Tukano: tuo, Kotiria: gvc, Retuarã-Tanimuka: tnc	Masayoshi Shibatani and Marília Ferreira
2	Vietnamese (Austroasiatic)	Vietnam	vie	Masaaki Shimizu and Trang Phan
3	Northern nDrapa (Qiangic, Tibeto-Burman)	China	zhb	Satoko Shirai
4	Guoli dialect of Zauzou (Ngwi, Tibeto-Burman)	China	zal	Yu Li and Tetsuya Miyagishi
5	Jiangmo dialect of Zauzou (Ngwi, Tibeto-Burman)	China	zal	Tetsuya Miyagishi and Yu Li
6	Lan Hmyo (Hmongic/Miao)	China	hml	Yoshihisa Taguchi
7	Gouliang Miao (a sub-dialect of Xiangxi Miao) (Hmongic/Miao)	China	muq	Fang Wu and Hongyong Liu
8	Swedish (North Germanic)	Sweden and Finland	swe	Tatjana Ilic and Kazuhiro Kawachi
9	Slovene (South Slavic)	Slovenia	slv	Prashant Pardeshi and Andrej Bekeš
10	Bari (Eastern Nilotic)	South Sudan	bfa	Shuichiro Nakao

Table 3. Languages documented in the present issue and their contributors (continued)

Article	Language, language family, dialect	Country/ countries	ISO 639-3	Contributor(s)
11	Kimakunduchi dialect of Swahili (Bantu, Niger-Congo)	Tanzania	swh	Makoto Furumoto
12	Sidaama (Highland East Cushitic)	Ethiopia	sid	Kazuhiro Kawachi
13	Assamese (Indo-Aryan)	India	asm	Gitanjali Bez
14	Southern Marathi and Pune Marathi (Indo-Aryan)	India	mar	Manasi Kelkar and Prashant Pardeshi
15	Sinhala (Indo-Aryan)	Sri Lanka	sin	Tetsuya Miyagishi
16	Konkani (Indo-Aryan)	India	kok	Prashant Pardeshi and Govind Mopkar
17	Dravidian languages	India (also, Sri Lanka and Pakistan)	Arebase (Arebhashe): —, Kannada: kan, Beary: —, Malayalam: mal, Koraga: kfd/vmd, Tamil: tam, Tulu: tcy, Telugu: tel	Niranjan Uppoor

4. FINDINGS REGARDING SHIBATANI'S HYPOTHESIS ABOUT CLASSIFYING NOMINALIZERS

4.1 Summaries of the findings of each report

This subsection briefly summarizes the findings of each contribution with respect to Shibatani's hypothesis on the use of classifying nominalizers to derive grammatical nominalizations. As the summaries presented here are necessarily concise and somewhat generalized, readers should consult the individual articles for more detailed information.[10]

1. According to Shibatani and Ferreira, in Tukanoan languages like Tuyuka, the obligatory use of classifying nominalizers applies to grammatical nominalizations in their NP use, regardless of any semantic or syntactic factor, with the exception of genitives with human

[10] As mentioned in Footnote 5, some of the reports include data on not only cardinal numerals but also ordinal numerals, but these summaries deal primarily with cardinal numerals. Also, depending on the report, verb-based nominalizations may be limited to relative clauses or may include other types of verb-based nominalizations. In the summaries, the term 'verb-based nominalizations' is used even when it refers only to relative clauses.

possessums, which take no classifier marking. In contrast, for grammatical nominalizations in their modification use, classifying nominalizers are obligatory only when the referent is animate, or when it is inanimate and the marker appears postnominally. When the referent is inanimate and the marker is prenominal, its use is optional. The marking patterns, however, are different in other Tukanoan languages, where both animate and inanimate classifiers pattern alike, indicating that there is no motivation for distinguishing the former as gender and the latter as classifiers.

2. According to Shimizu and Phan, Vietnamese has two core classifiers. These classifiers obligatorily appear on numerals in both their NP and modification uses. They must also occur with demonstratives, adjectives, and verb-based nominalizations in their NP use, although they cannot be used with other types of structures than numerals in their modification use. However, classifiers are only optionally used with genitive noun phrases in their NP use. Therefore, the distribution of Vietnamese classifiers slightly deviates from Shibatani's prediction along the structural dimension, though it supports his prediction along the functional dimension.
3. Shirai shows that in Northern nDrapa, classifiers must follow basic numerals in both NP and modification uses, but do not occur with other types of structures—such as demonstratives, genitive noun phrases, non-reduplicated adjectives, or verb-based nominalizations—in either use. Nevertheless, there are exceptions: loan numerals representing large numbers may modify nouns without a classifier, and classifiers can be attached to adjectives that are nominalized through reduplication.
4. According to Li and Miyagishi, classifiers in the Guoli dialect of Zauzou are obligatorily used with numerals, demonstratives, and adjectives, and optionally with verb-based nominalizations (relative clauses) in NP use. In modification use, they are obligatory with numerals and optional with adjectives and verb-based nominalizations, with inter-speaker variation on demonstratives (some speakers consider it optional). However, classifiers cannot by themselves mark genitive noun phrases in either NP or modification use; instead, the genitive enclitic *=ze*^{55} is required when the possessum is implicitly identified, with a classifier possibly co-occurring with it. When the possessum is overtly expressed, the genitive enclitic is optional in alienable possession, where a classifier may co-occur with it, but is prohibited in inalienable possession.
5. Miyagishi and Li show that in the Jiangmo dialect of Zauzou, the two types of classifying nominalizers—classifiers and pluralizers—are generally used obligatorily to derive grammatical nominalizations in both NP and modification uses, with two exceptions: pluralizers cannot be used with numerals, and neither type is obligatory with genitive noun phrases. Classifier marking on genitives is optional in NP use and prohibited in modification use, while pluralizer marking on genitives is optional in both uses. In genitive constructions, the genitive enclitic is required when the possessum is implicitly recognized, in which case a classifier may optionally co-occur with it, but is optional when the possessum is overtly expressed.
6. Taguchi shows that in Lan Hmyo, classifiers are obligatorily used with numerals and demonstratives, and optionally used with adjectives and verb-based nominalizations (relative clauses), but they are not used with genitive noun phrases, when these structures

occur in NP use. In contrast, in modification use, classifiers are used only with numerals, but not with demonstratives, genitive noun phrases, adjectives, or verb-based nominalizations.

7. Wu and Liu demonstrate that Gouliang Miao, a sub-dialect of Xiangxi Miao, deviates from Shibatani's hypothesis regarding the distribution of classifying nominalizers along the structural dimension, though it supports the hypothesis concerning their distribution along the functional dimension. This language exhibits interaction between classifiers and several non-classifying nominalizers. In the absence of a non-classifying nominalizer (i.e., the genitive marker and two dedicated nominalizers), classifiers are obligatorily used with numerals, demonstratives, genitives, and verb-based nominalizations (relative clauses) in both NP and modification uses, but they are not permitted to nominalize adjectives—representing a deviation from Shibatani's hypothesis along the structural dimension. When a non-classifying nominalizer is present, a classifier may optionally be used in genitive noun phrases, adjectival phrases, and verb-based nominalizations in both NP and modification uses.
8. Ilic and Kawachi show that in Swedish—which has traditionally been described as having gender (with a common/neuter distinction) but is more accurately characterized as an animacy-based classification system—its classifying nominalizers are of two types: different common/neuter forms (or suffix forms) and different common/neuter forms of singular articles. The common/neuter distinction is made by the former for demonstratives, but only restrictedly or not at all for other types of structures. With the latter, the common/neuter distinction is not made for cardinal numerals or genitive noun phrases, though it occurs obligatorily with demonstratives, adjectives, and verb-based nominalizations (relative clauses), thus showing a gap in genitive noun phrases in its own hierarchy pair. (For ordinal numerals, the distinction is made only in indefinite noun phrases.) Although the two types together mark all five types of grammatical nominalizations, the restriction of genitive marking to first- and second-person possessor pronouns (with singular possessum referents) still leaves a gap in the combined hierarchy pair. The Swedish data thus challenge Shibatani's hypothesis along the structural dimension while remaining compatible with it along the functional dimension.
9. Pardeshi and Bekeš show that in Slovene, gender markers are obligatorily attached to demonstratives, genitive noun phrases, and adjectives in both NP and modification uses. On numerals, gender marking is limited to 'one' through 'four' and neutralized for 'five' and above, and on verb-based nominalizations, it is obligatory with relative clauses formed with the declinable relativizer *kateri* or participles, but is not made with those formed with the indeclinable relativizer *ki*, in both uses. Thus, the gender marking in this language supports Shibatani's hypothesis along both the structural and the functional dimensions.
10. According to Nakao, Bari marks gender on demonstratives, genitive noun phrases, most types of adjectives, and verb-based nominalizations in their NP and modification uses, but does not mark gender on cardinal numerals in either use (though ordinal numerals allow optional gender marking in NP use only). Therefore, the distribution of gender

marking in this language contradicts Shibatani's hypothesis along the structural dimension, though it is compatible with it along the functional dimension.

11. Furumoto reports that in the Kimakunduchi dialect of Swahili, noun-class marking obligatorily occurs on all types of structures on the Shibatani hierarchy—numerals, demonstratives, genitive noun phrases, adjectives, and verb-based nominalizations (relative clauses)—in both NP and modification uses, though noun-class marking on numerals in both uses is restricted to 'one', 'two', 'three', 'four', 'five' and 'eight'. Therefore, the data approximately support Shibatani's hypothesis along both the structural and the functional dimensions.
12. Kawachi shows that Sidaama has two types of classifying nominalizers that distinguish between feminine and masculine gender. One is an enclitic used to form singular noun phrases and the other consists of allomorphs of the nominative, the genitive, and the dative-locative case suffixes. The enclitic marks gender obligatorily on genitive noun phrases and verb-based nominalizations (relative clauses) in NP use and optionally on these structures in modification use. It is optionally used for emphasis on cardinal numerals, and does not attach to adjectives (except those with the comparative/superlative suffix) in either use. (The enclitic obligatorily marks gender on ordinal numerals in NP use and optionally in modification use.) Thus, the enclitic shows gaps in cardinal numerals and adjectives in its own hierarchy pair. In contrast, the case suffixes obligatorily mark gender on cardinal numerals and adjectives in both NP and modification uses, but not on genitive noun phrases in either use, despite their obligatory occurrence on adjectives, showing a gap in their own hierarchy pair. Both types of markers are analyzed as incorporated into demonstratives. Therefore, both individually and collectively, the two types of gender markers support Shibatani's hypothesis along the functional dimension, but deviate from it along the structural dimension. Although the two types together cover all five types of grammatical nominalizations, the optional gender marking on genitive noun phrases in modification use still leaves a gap in the combined hierarchy pair.
13. Bez demonstrates that classifier marking across nine regional dialects of Assamese supports Shibatani's hypothesis along both the structural and functional dimensions. In NP use, all investigated dialects exhibit obligatory classifier marking on numerals and demonstratives. Marking on genitive noun phrases, adjectives, and verb-based nominalizations is also obligatory when the referent is definite, but is absent with indefinite referents. In modification use, obligatory classifier marking is restricted to numerals, which are marked across all dialects. Demonstratives are obligatorily marked in the Mongoldoi and Udalguri dialects, but optionally marked in the other dialects. Genitives are optionally marked in the Barpeta and Eastern varieties, and are not marked in the remaining dialects. Adjectives and verb-based nominalizations receive no classifier marking in modification use in any dialect.
14. Kelkar and Pardeshi show that Southern Marathi (Thanjavur Marathi) and Pune Marathi (Standard Marathi), both of which have classifier and gender markers, generally require the classifier to be attached to numerals in NP use. Although Southern Marathi must also use the classifier with most numerals in modification use, Pune Marathi does not permit

its use in this function. In neither variety can the classifier be used to derive any other type of grammatical nominalization, whether in NP or modification use. On the other hand, gender marking is mostly obligatory on the numeral 'one' (though not on other numerals), demonstratives, genitive noun phrases, adjectives, and verb-based nominalizations in Pune Marathi, whereas in Southern Marathi, gender is marked on these structures only under certain conditions (for example, on adjectives with human referents) and is not distinguished on genitives. Therefore, the gender marking in Southern Marathi does not support Shibatani's hypothesis along the structural dimension, although that in Pune Marathi, as well as classifier marking in both varieties, does. Both the classifier and gender marking, however, support Shibatani's hypothesis along the functional dimension.

15. According to Miyagishi, Sinhala has three classifiers and a pair of gender markers. Each classifier must appear on numerals in both their NP and modification uses. Two of the classifiers must also occur on demonstratives, adjectives, and verb-based nominalizations, but only in their NP use (not in their modification use), and may optionally be used with genitive noun phrases in NP use. In this respect, the distribution of these two classifiers does not perfectly support Shibatani's hypothesis along the structural dimension, though it confirms it along the functional dimension. The third classifier cannot be used with demonstratives, genitive noun phrases, adjectives, or verb-based nominalizations in either NP or modification use. The gender markers must appear on numerals in both NP and modification uses, as well as on demonstratives in NP use. Additionally, they are so far attested (on the internet) only on genitive noun phrases with first-person pronoun possessors in NP use. Notably, the numeral for 'one' independently makes a gender distinction regardless of the type of structure it occurs with.
16. Pardeshi and Mopkar, who describe the patterns of marking with one sortal classifier and three gender markers in Konkani, show that while the use of the classifier is restricted to numerals other than 'one' in both NP and modification uses, the gender marker occurs obligatorily and almost obligatorily to derive grammatical nominalizations in NP and modification uses, respectively. However, gender marking is limited to the numerals from 'one' to 'four'—the numeral for 'one' must carry the gender marker, but not the classifier, while the numerals for 'two', 'three', and 'four' take the gender marker alone, the gender marker together with the classifier, or the classifier alone. This conforms to Shibatani's hypothesis along both the structural and the functional dimensions.
17. Uppoor reports that gender marking in eight Dravidian languages—Arebase, Beary, Kannada, Koraga, Malayalam, Tamil, Tulu, and Telugu—supports Shibatani's hypothesis along the functional dimension. In these languages, gender marking in grammatical nominalization is obligatory across all five categories—numerals, demonstratives, genitives, adjectives, and verb-based nominalizations—in NP use, except in Malayalam, where genitives cannot be gender-marked. For modification use, gender markers occur on numerals, obligatorily in Arebase, Kannada, Koraga, and Tulu, and optionally in Beary. They appear only optionally on demonstratives in Arebase, Koraga, and Tulu, but not in the other five languages. In Malayalam, Tamil, and Telugu, gender marking cannot occur on any category in modification use. Gender marking in

seven of the eight languages also supports Shibatani's hypothesis along the structural dimension. In addition to being obligatory across all five categories in NP use, when these categories occur in modification use, gender marking—where possible—is largely restricted to numerals. With respect to classifier marking, it is typically found with numerals in NP use, while its occurrence with other categories remains to be investigated. In modification use, classifier marking is restricted to numerals.

4.2 General findings

Importantly, one part of Shibatani's hypothesis applies consistently to all the languages investigated in this data report collection—namely, the hypothesis along the functional dimension. In each language, classifying nominalizers occur with equal or greater likelihood and obligatoriness with a given type of structure in NP use than in modification use. Classifying nominalizers are never attested with a wider range of structures in modification use than in NP use. Among the languages reported in this issue, none contradicts this pattern, making it, at least so far, an absolute universal. This finding challenges the traditional view that the primary function of grammatical nominalizations is to serve as noun modifiers structurally dependent on a head noun, rather than as full noun phrases in their own right.

The data from many of the languages investigated also confirm Shibatani's hypothesis along the structural dimension. However, the use of classifying nominalizers in ten languages exhibits patterns not predicted by the hypothesis.[11] Setting aside the unusual absence of classifying nominalizer marking on numerals in Bari (Nakao this issue) and the requirement to use nominalizers on adjectives in addition to classifying nominalizers in Gouliang Miao (Wu and Liu this issue), the most common deviation—found in eight languages—involves genitive noun phrases, where the use of classifying nominalizers is optional, disallowed, or of questionable acceptability, despite their obligatory or optional use with adjectives: Lan Hmyo (Taguchi this issue), Malayalam (Uppoor this issue), Southern Marathi (Kelkar and Pardeshi this issue), Sidaama (Kawachi this issue), Sinhala (Miyagishi this issue), Swedish (Ilic and Kawachi this issue), Vietnamese (Shimizu and Phan this issue), and Zauzou (both the Guoli (Li and Miyagishi this issue) and Jiangmo dialects (Miyagishi and Li this issue)).

The exact reason for the frequent gap in genitive noun phrases is not entirely clear at this point. Nevertheless, there seem to be two contributing factors. Both are functionally motivated, though neither is universal. One factor, which depends on a language's morphological inventory, is the avoidance of a redundancy of the nominalizing function. Some languages possess a genitive marker that functions as a non-classifying nominalizer, which may obviate the need for a classifying nominalizer on genitives (e.g., Lan Hmyo in Taguchi this issue, Vietnamese in Shimizu and Phan this issue, Zauzou in Li and Miyagishi this issue and Miyagishi and Li this issue). The other factor, which follows from possessive relations, is the avoidance of a redundancy of category specification. Unlike other types of structures, genitives always involve two entities, a possessor and a possessum. The identifiability of the possessum relative to the possessor can make specification of the possessum's category redundant.

[11] The severity of these violations varies across languages. Minor violations, typically involving optional marking, tend to be limited to either noun-phrase or modification use (usually the former), whereas more serious violations, involving the complete absence of marking, often appear in both uses.

Typically, the possessum in a possessive construction is definite (Haspelmath 1999) and thus likely identifiable to the addressee, so its category need not be specified (for example, Swedish, where category is marked through definiteness, avoids what Ilic and Kawachi (this issue: 229) call 'a redundancy in definiteness marking'), whereas the possessor may be unidentifiable and is often marked for its category; further specification of the possessum's category on the possessor noun can increase cognitive load. Nevertheless, when the possessor is clearly identifiable, the possessum may be less so, and marking the possessum's category on the possessor pronoun can be informative, as with marking only on first- and second-person possessor pronouns (with singular possessum referents) in Swedish (Ilic and Kawachi this issue: 217).

5. REMAINING ISSUES AND PROSPECTS FOR FUTURE RESEARCH

Based on the data reported in this collection, several issues remain that are specific to individual languages or particular types of languages, and these will need to be addressed in future research. Some of these issues involve accounting for deviations from Shibatani's predictions or the application of his hypothesis to one type of noun phrase but not to another. Classifier and gender marking may be analyzed as a unified phenomenon, with the two types of markers forming a continuum rather than being entirely distinct or unrelated. Nevertheless, it would be worthwhile to investigate whether certain phenomena—such as specific types of deviations from Shibatani's hypothesis—are more likely to occur with one type of classifying nominalizer or with another type and if so, why this is the case.

A first issue is that there are languages with the singular-plural number distinction in which marking with a relatively small number of categories distinguished by classifying nominalizers is restricted to the singular and does not apply to the plural (e.g., Sidaama in Kawachi this issue, Swedish in Ilic and Kawachi this issue). This pattern appears to be explainable: a singular referent can be readily identified, whereas plural referents may consist of individuals of different genders, making marking with a classifying nominalizer more complex or ambiguous. This raises the question of whether a similar restriction to the singular is also possible in languages with a large number of classifying nominalizers.

Second, in some languages with a gender marking system (e.g., Romance languages, Slavic languages), only the numeral 'one' or lower numerals have gendered forms or receive gender marking, while higher numerals do not (e.g., Sidaama in Kawachi this issue, Sinhala in Miyagishi this issue, Konkani in Pardeshi and Mopkar this issue, Marathi in Kelkar and Pardeshi this issue). The likely motivation is the same as for the first issue: whereas plural referents may include individuals of different genders, the gender of a singular referent is more easily identifiable. Although there are instances where lower numerals receive special treatment in terms of classifier form selection (e.g., the use of *tsu* in Japanese for numerals 'one' to 'nine'), this pattern seems to be more common in languages with a small number of classifying nominalizers (so-called gender languages) than in those with a large number (so-called classifier languages). The reason for this discrepancy warrants further investigation.

Third, in some languages, the use of a particular classifying nominalizer is largely restricted to definite referents (e.g., the noun phrase enclitic in Sidaama in Kawachi this issue, definite gender markers in other Afroasiatic languages). Among various types of grammatical

nominalizations, a noun phrase consisting solely of a demonstrative or containing a demonstrative is inherently definite.[12] Similarly, a noun phrase composed only of a genitive noun phrase or an ordinal numeral in NP use or one containing such a structure in modification use is typically interpreted as definite. If a classifying nominalizer functions as a definiteness marker, its occurrence in a noun phrase may be optional. It may appear for added emphasis when the definiteness is already contextually clear, or it may be omitted to avoid a redundancy of definiteness marking. As discussed in Section 4.2, some languages exhibit a gap in the implicational hierarchy with respect to genitive noun phrases. This may be explained by the principle that definiteness in such constructions is already assumed, rendering further marking unnecessary (Ilic and Kawachi this issue). Notably, definiteness appears to correlate more strongly with languages that have a small number of classifying nominalizers than with those that have a larger number, although the precise relationship between definiteness and the number of classifying nominalizers remains unclear. This issue remains open for future research.

Fourth, there is a question of whether gender marking that participates in grammatical nominalization and the existence of different gender forms of grammatical nominalizations (e.g., different gender forms of 'one' in some languages, for example, Sidaama) should be treated as the same type of phenomenon or different types of phenomena. In some languages, a gender marker occurs as part of a grammatical nominalization. For example, in many Afroasiatic languages, the feminine-masculine distinction is encoded in elements of demonstratives, which trace back to the Proto-Afroasiatic distinction between *t* (feminine) and *k* (masculine). The question is whether this should be viewed as an obligatory gender distinction expressed by demonstratives or as a case where no additional marking is made beyond what is already inherent in the demonstratives.

A related issue concerns whether grammatical nominalizations in any language with classifying nominalizers have distinct forms for the different categories of its classification system. In some languages with a small number of classifying nominalizers, all members of the (often, singular) demonstrative set have different category forms. Such fusion is possible because demonstratives form a closed class and only a few categories need to be distinguished. By contrast, no language appears to have a demonstrative set with distinct forms for each category of a large inventory of classifying nominalizers, presumably because too many categories would have to be fused into a closed paradigm.

Fifth, some languages have distinct (typically, two) types of classifying nominalizers. These may consist of two kinds of classifiers (e.g., general vs. specific, or more grammaticalized vs. more nominal-like), two types of gender markers, or a combination of classifiers and gender markers. Based on the data discussed in the present study, languages with two types of classifying nominalizers that exhibit different morpho-syntactic properties—specifically Sidaama and Swedish—each show deviations from Shibatani's hierarchy (in both languages, the two marker types express the same distinction—feminine vs. masculine and

[12] Even though demonstratives are inherently definite, they do not show a gap in the languages examined in the present issue, unlike genitive noun phrases. This may be because demonstratives direct the addressee's attention to a referent, so that specifying its category aids identification rather than being redundant. However, this question remains open for future research.

common vs. neuter, respectively—which descends from a single earlier system). However, taken together, they may better conform to his hypothesis, with the two types of markers in each language covering different, discontinuous segments of the hierarchy. This raises the question of whether the range of each type of marker should be analyzed individually, or whether the usage of all markers should be considered collectively. A further issue is whether such joint coverage of the hierarchy is possible only for marker types making the same distinction, as in Sidaama and Swedish, or also for combinations of markers expressing different distinctions—a classifying nominalizer system consisting of two kinds of classifiers or one made up of classifiers and gender markers—where it is less clear that their ranges can be meaningfully combined at all.

Sixth, there are cases in which it is unclear whether a construction should be analyzed as a noun phrase consisting of a grammatical nominalization in modification use plus the noun that it modifies or as two juxtaposed noun phrases made up of a noun phrase—one consisting of a grammatical nominalization in NP use and the other containing only a noun. Identifying the constituent structure of such noun phrases can be particularly challenging when word order is flexible and dependency relations are not overtly marked (e.g., Kawachi this issue). According to Shibatani's theory, the referent of a noun phrase including one consisting only of a grammatical nominalization in NP use is identified metonymically through the discourse context and Gricean maxim of relevance. It is necessary to explain how a construction that permits both interpretations is processed differently depending on the interpretation assigned.

Seventh, there are languages with classifying nominalizers that are neither classifiers nor gender markers, yet can still be analyzed as grammatical nominalizers. Examples include the pluralizers in the Jiangmo dialect of Zauzou (Miyagishi and Li this issue) and the singular and plural nominalizer particles in Kupsapiiny, a Southern Nilotic language of Uganda. It would be worthwhile to investigate how these types of classifying nominalizers behave similarly to or differently from classifiers and gender markers, and to what extent they can be situated on the continuum between the two types.

Finally, there are grammatical phenomena that seem closely related to classifying nominalization, but are not addressed in the present issue, and therefore it is not clear how they align with Shibatani's hypothesis. For example, beyond the commonly discussed numeral classifiers, there are other types—such as verbal classifiers, possessive classifiers, locative classifiers, and deictic classifiers (Aikhenvald 2000), as well as root classifiers (Grinevald 2024). Possessive classifiers in Oceanic languages, which may reflect the Proto-Oceanic classification of alienably or indirectly possessed items into food, drink, and general possessions (Lichtenberk 1985, Ross 1988), are restricted to genitives (Lichtenberk 2009).

6. CONCLUSION

The Shibatani hierarchy under his framework of Dynamic Functional Typology serves as a useful analytical tool for examining both the synchronic distribution of classifying nominalizers used to derive grammatical nominalizations and the diachronic development of this distribution across languages. The reports in this issue bear this out: the hypothesis along the functional dimension holds without exception in every language investigated, whereas the structural dimension shows recurrent deviations, most notably at genitive noun phrases. As

shown in Section 4.2, the examination of such deviations can uncover their functional motivations. At the same time, although it is not yet clear whether the hierarchy applies equally to systems at different points along the classifier–gender continuum, the hierarchy may prove useful for determining where a particular system is located on that continuum.

ABBREVIATIONS

1	first person
ADJ	adjective
CLF	classifier
DEM	demonstrative
GEN	genitive noun phrase
Mod	modification
NMLZ	nominalization
NP	noun-phrase
NUM	(cardinal) numeral
SG	singular

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