

Grammaticalization and Semantic Typology: Time-relationship Adverbs in Japanese, Korean, English and German

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Abstract

This paper discusses constraints on *grammaticalization*, a primarily diachronic process through which lexical elements take on grammatical functions. In particular, it will argue that two constraints on this process, namely *Persistence* and *Layering*, explain the different distributional patterns of time-relationship adverbs in Japanese, Korean, English and German. Furthermore, it will suggest that the distributional difference between Japanese and Korean time-relationship adverbs is not an isolated phenomenon but is a reflection of the overall semantic typological differences between the two languages in the sense of Hawkins (1986).

1 Introduction

Grammaticalization is an important process in the framework of Cognitive Linguistics because it highlights the flexible nature of boundaries between lexical and grammatical categories, and this flexibility, in turn, reflects interdependence of structure and use. However, relatively little attention has been paid to how this process is constrained. Although some authors (e.g. Hopper 1991) point out general characteristics of this process, some of which can obviously be regarded as constraints, they fail to address the issue of how such constraints operate to yield different systems in various languages.

This paper argues that time-relationship adverbs such as *mada* ("still, (not) yet") and *moo* ("already, (not) any longer") in Japanese or their (partial) counterparts *acik* or *pelsse* in Korean are constrained by the same principles of grammaticalization, *layering* and *persistence*, although individual languages manifest apparently different distributional patterns.¹

The organization of this paper is as follows. In section 2, we will look into basic distributional patterns of time-relationship adverbs in Japanese and Korean and present a preliminary semantic analysis of them. In section 3, the above-mentioned two basic principles of grammaticalization are introduced and in section 4, we will observe how these principles operate to produce different distributions between the two languages. In section 5, it will be argued that the same principles can also explain different distributions in English and German time-relationship adverbs. In section 6, we will suggest that the distributional difference between Japanese and Korean is a reflection of the overall semantic typological differences between the two languages in the sense of Hawkins (1986). Section 7 will summarize the major findings of this study and present the conclusion.

2 Time Relationship Adverbs in Japanese and Korean

2.1 Japanese

In Japanese, *mada* and *moo* serve the function of relating two points of time and thus expressing the continuity or change of events or states:

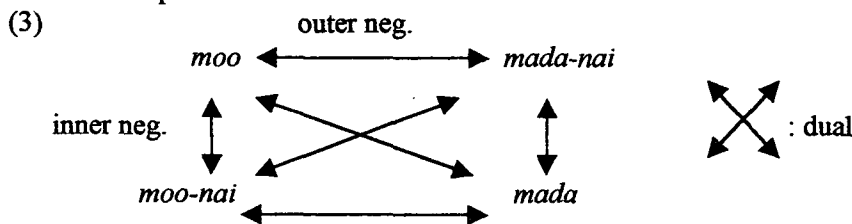
¹ We use the term time-relationship adverbs in the sense of *time-relationship subjuncts* in Quirk et al. (1985). We therefore exclude from our consideration *time-relationship adjuncts* such as *by that time*, *up to that time* and so on.

- (1) a. Boku-wa *mada* kare-ga sukida
 I-Top² still he-Acc like
 ‘I still like him.’
 b. Boku-wa *mada* kare-ni at-ta koto ga nai
 I-Top yet him-Dat meet-Perf Comp Nom Neg
 ‘I haven’t met him yet.’
 c. Kare-ni wa *moo* at-ta
 he-Dat Top already meet-Perf
 ‘(I) have already met him.’
 d. Kare-ni wa *moo* awa-nai
 he-Dat Top anymore meet-Neg
 ‘(I) don’t meet/see him anymore.’

Applying the analysis proposed by Löbner (1989) and adopting the notation used in Krifka (2000), we assume that the meanings of adverbs in (1a-d) can be represented as in (2a-d) respectively:³

- (2) a. MADA(t, Φ): assertion: Φ holds at t $\Phi(t)$
 presupposition: Φ was true before t $\exists t' \ll t [\Phi(t')]$
 b. MADA-NAI(t, Φ): assertion: Φ does not hold at t $\neg \Phi(t)$
 presupposition: $\neg \Phi$ was true before t $\exists t' \ll t [\neg \Phi(t')]$
 c. MOO(t, Φ): assertion: Φ holds at t $\Phi(t)$
 presupposition: $\neg \Phi$ was true before t $\exists t' \ll t [\neg \Phi(t')]$
 d. MOO-NAI(t, Φ): assertion: Φ does not hold at t $\neg \Phi(t)$
 presupposition: Φ was true before t $\exists t' \ll t [\Phi(t')]$

$\Phi(t)$ is true iff Φ is true throughout the interval t and $t' \ll t$ expresses that the interval t' has begun before t and abuts t . Applying also the analysis by Löbner (1989), the semantic relationships among these expressions are represented as follows:



The “outer negation” is the negation of the operator while the “inner negation” is that of the operand. *Moo* and *mada* are “dual”. Two operators are dual “iff the inner negation of one is equivalent to the outer negation of the other” (Löbner 1989: 172).

2.2 Korean

In Korean, *acik* and its emphatic form *acikto* correspond to *mada* in Japanese and can be used in both affirmative and negative sentences. On the other hand, several adverbs correspond to *moo* in Japanese. *Pelsse* and *imi* can be used in affirmative sentences, whereas *icey*, *teisang*, and *tenun* are used in negative sentences:

- (4) a. *Acikto* pi-ka o-ko issta
 still rain-Nom come-Ger exist:Decl
 ‘It is still raining.’

² The following abbreviations are used in the glosses of this paper. Acc: Accusative Comp: Complementizer, Cop: Copula, Dat: Dative, Decl: Declarative Ger: Gerund, Loc: Locative, Neg: Negation, Nom: Nominative, Perf: Perfect, Pol: Politeness, Pres: Present, Top: Topic. Yale Romanization is used except authors’ names in the references.

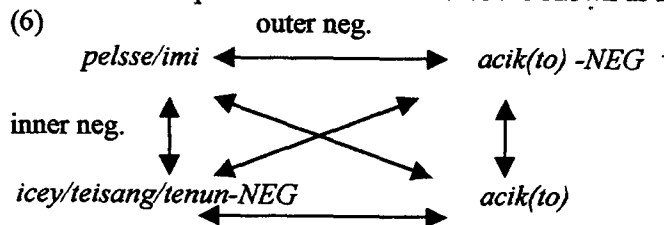
³ The main concern of Löbner (1989) is how different uses of these adverbs are related in meaning. To inquire further into the matter would lead us into that specialized area of formal semantics, so we will not pursue this issue in this paper.

- b. *Acik an po-yo*
 still Neg see-Pol
 ‘(I) cannot see yet.’
- c. *Ku kes-un imi/pelsse kkuthna-ss-ta*
 that thing-Top already end-Past-Decl
 ‘That has already ended.’
- d. *Ku-nun icey/teisang/tenun yeki-ey sal-ci anh-nun-ta*
 he-Top already here-Loc live-COMP Neg-Pres-Decl
 ‘He doesn’t live here anymore.’

The meanings of the adverbs can be represented as follows:

- (5) a. ACIK(t, Φ): assertion: Φ holds at t $\Phi(t)$
 presupposition: Φ was true before t $\exists t' \prec t [\Phi(t')]$
- b. ACIK-NEG(t, Φ): assertion: Φ does not hold at t $\neg \Phi(t)$
 presupposition: $\neg \Phi(t)$ was true before t $\exists t' \prec t [\neg \Phi(t')]$
- c. IMI/ PELSSE (t, Φ): assertion: Φ holds at t $\Phi(t)$
 presupposition: $\neg \Phi(t)$ was true before t $\exists t' \prec t [\neg \Phi(t')]$
- d. ICEY/TEISANG/TENUN -NEG(t, Φ): assertion: Φ does not hold at t $\neg \Phi(t)$
 presupposition: Φ was true before t $\exists t' \prec t [\Phi(t')]$

The semantic relationships between these adverbs are shown as in (6):



2.3 Comparison

In Japanese, two words *mada* and *moo* are used in combination with the negative operator to cover the semantic field of temporal continuity of/ change in events. In Korean, while *acik(to)* can combine with the negative operator to express the inner-negation of *acik(to)*, *pelsse/imi* cannot combine with the negative operator as *acik(to)* does. Consequently, *icey/teisang/tenun* need to be used in order to express the inner negation of *pelsse/imi*. We will argue that whether a time-relationship adverb can combine with negation or not is determined by the grammaticalization pathway it has taken and that explanatory principles of grammaticalization determine the distribution of time-relationship adverbs in individual languages.

In the next section, we introduce the notion of grammaticalization and two of its basic principles.

3 Grammaticalization

3.1 What is Grammaticalization ?

Grammaticalization (also called *grammaticization*) is a process in which a lexical unit or structure assumes a grammatical function.⁴ It has been studied from both historical and synchronic perspectives. In the former perspective, grammaticalization is a subset of linguistic changes; in the latter perspective, it is seen as “primarily a syntactic, discourse pragmatic phenomenon, to be studied from the point of view of fluid patterns of language”(Hopper and Traugott 1993: 2).

⁴ For detailed explorations into the mechanisms of grammaticalization, see Bybee et al. (1994) and Heine et al. (1991).

A typical example of grammaticalization is the development of an auxiliary *be going to* from a progressive form of the movement verb *go* in construction with a purposive infinitival complement. As pointed out by Hopper and Traugott (1993:2-4), this example illustrates morpho-syntactic and semantic-pragmatic consequences of grammaticalization, such as pragmatic inference, reanalysis, phonological reduction, and abstraction of meaning:

- (7) a. John *is going to* marry Mary.
 b. John *is going to* like Bill.
 c. John *is gonna* like Bill.

Grammaticalization begins in a very local context such as (7a), in which *go* co-occurs with a non-finite purposive complement, meaning something like *John is leaving/ traveling to marry Bill*. The change in meaning is triggered by a pragmatic inference: if John is leaving in order to marry, the marriage will be in the future. As this inference is conventionalized, [*John is going [to marry Mary]*] is reanalyzed as [*John [is going to] marry Mary*]. This reanalysis also affects the verb immediately following *be going to*. Consequently, the verbs which were originally incompatible with a purposive meaning become possible, as in (7b). As the expression *be going to* starts to be used quite often, it begins to be felt as one word, as evidenced by its phonological reduction in (7c). In this process, the original meaning of *go* has been mostly lost, and more abstract and subjective meanings have been added.

3.2 Constraints on Grammaticalization

Grammaticalization does not proceed randomly and can be constrained in several ways. Hopper (1991) proposes five principles of grammaticalization and one of them, namely *Persistence* can be interpreted as a constraint on grammaticalization. It is defined as in (8):

- (8) *Persistence*. "When a form undergoes grammaticization from a lexical to a grammatical function, so long as it is grammatically viable some traces of its original lexical meanings tend to adhere to it, and details of its lexical history may be reflected in constraints on its grammatical distribution." (Hopper (1991:22))

An illustration of this principle is the development of accusative markers in West African languages. In Gã, for instance, an accusative marker derived from a verb meaning 'take' is prevented from marking an object if the co-occurring verb has an effective meaning as in *lay an egg*, or if the object of the verb is experienced rather than affected as in *see the girl*.

This principle closely correlates with another principle of grammaticalization, i.e. *Layering*, which is defined in (9):

- (9) *Layering*. "Within a broad functional domain, new layers are continually emerging. As this happens, the older layers are not necessarily discarded, but may remain to coexist with and interact with the newer layers." (Hopper (1991:22))

When two or more units are available serving similar functions due to the principle of Layering, it is often the case that each unit has some uniqueness derived from "its lexical history," as predicted by the principle of Persistence. The differing lexical histories of the units in a grammatical domain may correlate with the differences in syntactic function and/or pragmatic inference (implicature) among the units in question.

We will argue that such correlation between the lexical sources of grammaticalized items and their syntactic/pragmatic behaviors is observable in the systems of time-relationship adverbs in Japanese and Korean, and that the differing conditioning factors of the correlation are responsible for the emergence of the differing systems.

In the next section we will observe how these principles interact to produce different adverbial systems in Japanese and Korean.

4 Grammaticalization of Time-relationship Adverbs

We propose that the difference between Japanese and Korean time-relationship adverbs is caused by the differential grammaticalization pathway of the adverbs in each language. The highly abstract nature of temporal concepts encoded by time-relationship adverbs (as contrasted with spatial concepts, for

instance) makes it plausible to hypothesize that they developed from lexical units with more concrete meaning, and are subject to the constraints reflecting their lexical origin.

The principle of Persistence predicts that the original meaning of the grammaticalized words or phrases constrain the distribution of these adverbs. More precisely, if the original words or phrases have the lexical meaning expressing concrete situations, the adverbs grammaticalized from them are likely to be excluded from the context incompatible with their original meaning. On the other hand, if the original lexical meaning of these words or phrases is highly abstract, the adverbs grammaticalized from them are likely to have less distributional restrictions. We will look into the origin of each time-relationship adverb and see how the constraints on grammaticalization contribute to the formation of different adverbial systems in Japanese and Korean.

In Japanese, *mada* (“still, (not) yet”) and *moo* (“already, (not) anymore”) both evolved from words related to time concept. *Mada* was originally *imada*. *Imada* is composed of *ima* “now” plus a particle *da*, which had the meaning equivalent to “even.” *Mada*, then, originally had the meaning of “even now” or “up to now” and was already in use in both affirmative and negative sentences from around the tenth century (Nihon Daiziten Kankookai (ed.) 1972, vol. 18: 361). *Moo* is considered to have derived from an old Japanese noun *ma*, which also had the meaning of “now” (Nihon Daiziten Kankookai (ed.) 1972, vol.19: 240).

In Korean, it is safe to assume that *acik*, (“still, (not) yet”) is derived from a word expressing time concept in the light of native speakers’ judgments and the meaning of the phrase *acik kkaci* “until now”. The origin of *imi* (“already”) is still not entirely clear, but according to Oosaka Gaikokugodaigaku Tyoosengo Kenkyusitsu (1986: 1574), *pelsse* (“already”) is derived from an adjective *ppaluta*, which means “fast”. *Icey* (“(not) anymore”) can also be used as a temporal noun meaning “now”. This nominal use is presumably the origin of its adverbial use, as we saw in the cases of *mada* and *moo* in Japanese. *Teisang* and *tenun* (“(not) anymore”) are both evidently related to “amount”. *Te* in both words means “more” and *isang* means “more than”. Thus, *teisang* originally means “more than more” and *tenun* is the topicalized form of *te*.

We argue that *pelsse* cannot fall within the scope of clausal negation because its original meaning, which is related to concrete situations, is incompatible with the irrealis meanings encoded by negative sentences.⁵ On the other hand, time-relationship adverbs derived from more abstract concepts such as time or amount are free of such semantic restrictions on their distribution. This is the case with *mada* and *moo* in Japanese, and *ajik*, *icey*, *teisang* and *tenun* in Korean, which are also derived from an abstract concept of amount, cannot occur in affirmative sentences because of the principle of Layering: there is nothing in their original meaning that prohibits their use in affirmative sentences, but the existence of *pelsse* forces them into negative sentences.

⁵ It is not unusual for a lexical item to be restricted in distribution in its grammaticalized use:

(i) Akanboo-ga {(a) umareru/(b) umareta} -*tokoro* -wo mini-itta

baby-Nom be born: Pres/be born: Past- place -Acc see-go :Past

(a) ‘(We) went to see a baby as she was born.’ (less common) ‘(We) went to see the place where babies were born.’

(b) ‘(We) went to see the place where a baby had been born.’

In (i), the Japanese noun *tokoro* (> ‘place’), can be interpreted as grammaticalized complementizer when the tense of the co-occurring verb is non-past and ensures simultaneous interpretation, as in (a). However, this ‘complementizer’ interpretation is not available when the tense of the co-occurring verb is past, as in (b).

From this perspective of grammaticalization, it is thus not surprising to find a time-relationship adverb like Korean *pelsse*, which shows co-occurrence restrictions with negative operator, even if its etymologically related adjective *ppaluta* is not inherently incompatible with negation, a point which puzzled an anonymous reviewer.

5 English and German

5.1 English⁶

In English, *already*, *still*, *yet* and *anymore* serve the function of relating two points of time and thus expressing continuity or change of events or states. *Already* and *still* are usually used in affirmative sentences and normally do not lie within the scope of clausal negation.

- (10) a. I *already* like him. ['I have by this time come to like him.']
 b. I *still* like him. ['I continue to like him.']
 c. *He can't *already* drive.
 d. ?He can't *still* drive. (Quirk et al. 1985: 580)

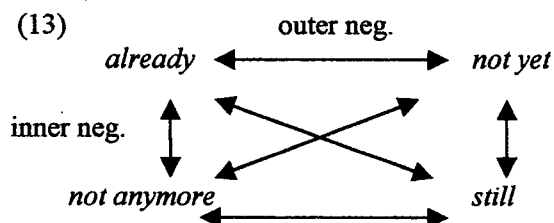
Still can precede negation, but *already* cannot occur in negative sentences even if it precedes negation:

- (11) a. I *still* haven't spoken to him.
 b. *I *already* haven't spoken to him. (Quirk et al. 1985: 580)

On the other hand, *yet* and *anymore* usually fall within the scope of clausal negation:

- (12) a. I haven't spoken to him *yet*.
 b. I do not see him *anymore*.

In general, *still* and *already* occur in affirmative sentences, and *yet* and *anymore* occur within the scope of clausal negation. *Still* and *yet* share the meaning of "continuation", whereas *already* and *anymore* share the meaning of "change". We can summarize the distribution of the four English time-relationship adverbs as follows:



The time-relationship adverb *still* originated from the adjective *still*, which means "not moving" (Terasawa ed. (1997:1351). In OED², the first attested example of the adjective *still* was in Beowulf, and the manner adverb *still*, which means "at rest, motionless" began to be used around 1000 A.D., mostly with certain verbs such as *stand*, *sit*, or *lie*. The time-relationship adverb *still* appeared around the sixteenth century.

Already evolved from the adjective phrase *all ready* with the meaning "quite ready or prepared". This adverb appeared in the fourteenth century and began to be written as one word in the fifteenth century (OED²).

Still and *already* have one property in common with respect to their origins: both of their original units expressed the meaning describing *observable* situations. In the case of *still*, we can check whether something is moving or at rest simply by looking at the object. In the case of *already*, whether someone or something is ready is also observable.

The origin of *yet* is less transparent. In the light of the meaning of the related German word *jetzt* "now," or the meaning of a set phrase *as yet* "up to the present time," we can assume that the adverb *yet* was derived from a word with the meaning of "now." *Yet* was already used as a time-relationship adverb in Old English. The use of *yet* in this sense in affirmative sentences is labeled dialectal or archaic in OED² and Quirk et al. (1985).

Anymore, which is sometimes written as *any more*, evidently derived from the phrase *any more*. In Old and Middle English, only *more* was used to serve this function, just like *mehr* in German. *Anymore*, written as one word, began to be used around the seventeenth century. But even in nineteenth century texts, we can still find sentences in which *more* was used alone as a time-relationship adverb (OED²).

⁶ For detailed analyses of English time-relationship adverbs, see Horn(1970), Ota(1980), and van der Auwera(1993).

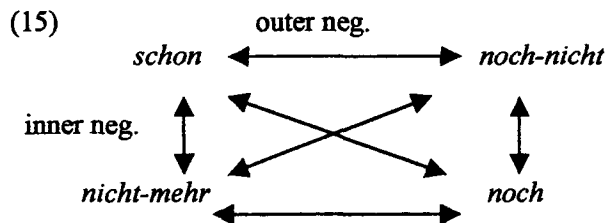
Yet and *anymore* also share a property with respect to their origins. The original lexical meanings of *yet* and *anymore*, which respectively encode time and amount, are more abstract and less situation-bound compared to the original meanings of *still* and *already*. Similar to Japanese and Korean, the English adverbs grammaticalized from words with more lexical content tend to be more severely restricted to those sentences that are semantically compatible with their original lexical meanings.

5.2 German⁷

In German, *noch*, *schon*, and *mehr* are used as time-relationship adverbs:

- (14) a. Sie wohnt *noch* hier.
 she lives still here
 "She still lives here."
 b. Er ist *noch* nicht zurück.
 he is still Neg back
 "He is not back yet."
 c. Er hat *schon* gegessen.
 he has already eaten
 "He has already eaten."
 d. Ich bin nicht *mehr* jung.
 I am Neg more young
 "I am not young anymore."

As is clear from (14a,b), *noch*, which corresponds to *still* and *yet* in English, can be used both in affirmative and negative sentences. *Schon*, which corresponds to *already*, can be used only in affirmative sentences as in (14c). In negative sentences, *mehr*, which serves the function of *anymore*, is used. We can summarize the distribution as in (15), which is the same diagram given in Löbner (1989: 172):



According to Kunimatsu et al. (1998), *noch* was derived from *nu*, which means "now", and *schon* was ultimately derived from *schön*, which means "beautiful". *Mehr* is evidently a cognate word of *more*. In German, too, the time-relationship adverb originating from a word describing concrete situations (i.e. *schon*) can occur only in affirmative sentences and those derived from abstract concepts such as time or amount (i.e. *noch* and *mehr*) can occur in negative sentences. What distinguishes German from English is that the principle of Layering is at work only in the left line of inner-negation relation. In the right line of inner-negation, *noch* can occur both in affirmative and negative sentences. The left domain in German is therefore like that of English, and the right domain is like that of Japanese. But the principles governing the distribution of these adverbs are the same throughout these three languages.

6 Grammaticalization and Semantic Typology

We have seen above that two principles constraining grammaticalization, i.e. Persistence and Layering are responsible for the manner in which time-relationship adverbs are distributed in Japanese, Korean, English and German.

Our next question is, then, whether there is some systematic correlation between the typological profile of a language and the manner in which grammaticalization is manifested and constrained therein.

⁷ For the detailed analysis of German time-relationship adverbs, see Löbner (1989).

Crucially relevant in this respect is a theory of Comparative Semantic Typology proposed by Hawkins (1986). Based on a detailed comparison of morpho-syntactic and semantic structures in English and German, Hawkins argued that the two languages show a systematic contrast in terms of form-meaning correspondence. Specifically, English consistently tends toward greater surface structural ambiguity, whereas German shows a more rigid one-to-one form-meaning correspondence. One of the co-authors extended Hawkins' insights to morpho-syntactic structures in Japanese and Korean and presented a hypothesis that the contrast between Japanese and Korean parallels that between English and German (Horie 1998, Horie and Kang 2000, Horie and Sassa 2000). That is, Japanese tends toward greater surface structural ambiguity and polyfunctionality than Korean, which shows a more rigid one-to-one form-meaning correspondence. This contrast is manifested in such grammatical domains as case-marking particles, complementizers, tense-aspect systems, and inflectional forms of predicates. We shall argue that this contrast in overall semantic typology between Japanese and Korean is also reflected in the emergence of differing systems in the domain of time-relationship adverbs.

The greater versus lesser polyfunctionality of grammaticalized morphemes is at least partially manifested by the contrast between Japanese time-relationship adverbs and their Korean counterparts. The former consist of two adverbs *mada* and *moo*, which respectively cover two semantic poles (see Figure in (3)) contrasting in terms of affirmation or negation. In contrast, the Korean time-relationship adverbs exhibit a lesser degree of polyfunctionality in that only two of the four semantic poles are covered in a similar manner by the adverb *acik* (see Figure in (6)).

The contrast between English time-relationship adverbs and their German counterparts apparently contradicts the overall semantic typological difference proposed by Hawkins (1986). That is, in this particular grammatical domain, English appears to exhibit a lesser degree of polyfunctionality than does German in that the four semantic poles are respectively encoded by four different adverbs (see Figure in (13)). As shown in (15), German shows a distributional pattern similar to Korean (cf. (6)) in that two of the four semantic poles are covered by the adverb *noch*.

How can we account for these apparently contradictory distributions between English and German? It may be simply that English has its own idiosyncratic preference for specific coding of the relevant temporal notions in this particular domain of grammar. However, we conjecture that a different kind of cognitive principle underlies the distributional difference between English and German. As extensively discussed by Dwight Bolinger (e.g. Bolinger 1977), English is known to exhibit a variety of semantic oppositions by employing different grammatical morphemes such as *to*-infinitive and bare infinitive or *to*-infinitive and *gerund*, as illustrated in (16) and (17):

- (16) a. I saw John *be obnoxious*. (“percept”)
- b. I saw John *to be obnoxious*. (“concept”)
- (17) a. He started *to behave obnoxiously*. (“potentiality”)
- b. He started *behaving obnoxiously*. (“reification”)

While English encodes various semantic oppositions by means of contrastive pairs of forms as in (16) and (17), such tendency is less prominent in German. We argue that such tendency toward maximal coding of semantic oppositions accounts for the fact that the four semantic poles are coded by different time-relationship adverbs in English.

7 Conclusion

We have argued that two principles constraining grammaticalization, i.e. Persistence and Layering, are responsible for the manner in which time-relationship adverbs are distributed in Japanese, Korean, English and German. The adverbs originating from words or phrases which describes concrete situations can be used almost exclusively in affirmative sentences because their original lexical meanings are incompatible with “irrealis” situations (e.g. “non-occurrence of expected change” or “termination of some activity or state”) encoded by negative sentences. This accounts for the distributional restrictions imposed on *pelsse* in Korean, *still* and *already* in English, and *schon* in German. On the other hand, the adverbs evolving from words or phrases expressing more abstract concepts like “time” or “amount” are

not inherently restricted in distribution. If there are no other adverbs to compete with them in a given language, these adverbs are free to occur both in affirmative and negative sentences. This is the case with *mada* and *moo* in Japanese, *acik(to)* in Korean and *noch* in German. But if there are other adverbs being used that derive from situation-bound words or phrases, the principle of Layering comes into play and the adverbs derived from abstract concepts are consequently restricted to negative sentences. This is the case with *icey*, *teisang*, and *tenun* in Korean, *yet* and *anymore* in English, and *mehr* in German. Thus the principles of Persistence and Layering together can explain the apparently different distributions of time-relationship adverbs in these four languages.

We have also suggested that the overall semantic typology of a given language in the sense of Hawkins (1986) closely correlates with the degree of polyfunctionality manifested by the time-relationship adverbs in that language, as in the case of Japanese and Korean. We have further hinted the possibility that a different kind of cognitive principle, i.e. tendency toward maximal coding of semantic oppositions, may be operative in this particular domain of grammar in languages like English.

Further cross-linguistic investigation into the grammaticalization patterns in different domains of grammar and their correlation with the overall semantic typology/cognitive principles is next on our agenda.

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