On the Internally Headed Relative Clause in Altaic-type Languages[1]

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Relative clauses such as *the book that I am reading* (in English) occur with the head outside the relative clause; these can be referred to as externally-headed relative clauses. In some languages, the head is inside the relative clause; these can be called internally headed relative clauses. It is argued that internally headed relative clauses (hereafter IHRC) are common in Japanese. Cross-linguistically, it has been maintained that languages with IHRCs are pro-drop languages and have a basic SOV (subject-object-verb) word order. These features are also thought to be features of "Altaic-type languages."[2] The position of IHRCs has been fixed between relative clauses and complements. There are many studies of Japanese and Korean IHRCs but few of Altaic languages. I reviewed some such studies of Modern Japanese, Old Japanese, Korean, and Ewen (Tungusic). In general, it has been claimed that compared with proper relative clauses, IHRCs place certain restrictions on time, place, and aspectual relation between clauses.

For this article, I have researched the range of use of IHRC structures in Turkish (Turkic),[3] Modern Uighur (Turkic), Khalkha Mongolian (Mongolic), Nanai (Tungusic), Korean, and Japanese through elicitation using 13 sentences. At the same time, I have researched the range of use of the [V-PTCP(-FN)-CASE] structure not only in the IHRCs but also in the sentences that appear as complement clauses in standard average European languages (SAE languages).[4] The findings of this study were as follows. First, complement clause-like sentences and IHRC-like sentences have formal and semantic similarity. Second, in participial clauses that have a strong feature of finite verbs, nouns similar to those in normal sentences are likely to appear. Thus, some nouns that will be arguments in the main clause are likely to be added even in relative-like sentences. Third, IHRCs can be easily established and supported by the existence of constructions where a modifying element is separated. Fourth, the meanings of sentences with IHRCs, especially in Japanese, are close to those expressed by adverbial clauses. Fifth, IHRCs with the nominative and accusative are not necessary arguments, but a kind of complement. The ultimate goal of this paper is to clarify the features and theoretical position of IHRCs in these five languages and also explain why some features of pro-drop + SOV and the existence of IHRCs correlate with each other.

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[1] This paper is an English version of Kazama (2017) (the original is in Japanese).

[2] The exact definition of the "Altaic-type" is still open to question. Tentatively, I consider the languages I researched in this paper (Turkish, Uighur, Khalkha Mongolian, Nanai, Korean, and Japanese) to be the "Altaic-type" languages (cf. "Introduction" of the present jounal). On the other hand, from the genetic point of view, Turkic, Mongolic, and Tungusic languages are called "Altaic languages," but the historical relationships between these three groups are not yet clear. The historical origin of Korean and Japanese is considered unknown.

[3] The language family to which a language belongs is referred to in the brackets next to language names.

[4] Standard Average European (SAE) is a concept introduced by Whorf (1941 [1956] to group the modern Indo-European languages of Europe. Whorf argued that these languages were characterized by a number of similarities including syntax and grammar that made them stand out from many other language groups around the world that do not share these similarities; in essence creating a continental sprachbund.

1. Introduction

1.1. What is an internally headed relative clause?

First, I introduce the notion of internally headed relative clauses (IHRCs). The descriptions are based on Yoshimura (2002: 133). IHRCs are clauses such as the following[5]:

(1) a. *taroR=ga   riNgo=ga   sara=no   ue=ni   aQ-ta=**no**=o   tabeta.*
        PSN=NOM   apple=NOM   dish=GEN   top=DAT be-ADN.PST=FN=ACC   ate[6]
        'Taro ate the apple which was on the plate'
        (lit. 'Taro ate which the apple was on the plate')

      b. *keikaN=ga   doroboR=ga   koNbini=kara*
        policeman=NOM   thief=NOM   convinience.store=ABL
        *nigedasite   ki-ta=**no**=o   taiho#sita.*
        running.away   come-ADN.PST=FN=ACC   arrest#did
        'The policeman arrested the thief who ran away from the convenience store'
        (lit. 'The policeman arrested which the thief ran away from the convenience store')

Here, the formal noun *no* semantically corresponds to the noun in IHRCs. This fact can be better understood by comparing the externally headed relative clauses:

(2) a. *taroR=ga sara=no   ue=ni   aQ-ta   riNgo=o   tabeta.*
        PSN=NOM dish=GEN top=DAT be-ADN.PST apple=ACC ate
        'Taro ate the apple which was on the plate'

      b. *keikaN=ga   koNbini=kara   nigedasite   ki-ta*
        policeman=NOM convenience.store=ABL running.away come-ADN.PST

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[5] Yoshimura (2002) and Kuroda (1999) (cf.§1.2.1) did not give an exact definition of IHRC but illustrated IHRC with sentences such as (1).

[6] Due to limitations of space, morpheme analyses other than those of elements concerned in this study are minimized and their glosses are simplified.

doroboR=o   taiho#sita.
thief=ACC   arrest#did
'A policeman arrested a thief who ran away from a convenience store'

Many linguists have considered the construction of IHRCs through the framework of generative grammar, especially since Shigeyuki Kuroda's series of full-dress investigations (cf. §1.2.1). Some points at issue have been argued in the field of generative grammar. The first point is whether the IHRC head is a *noun* (N) or *complementizer* (C). The second is whether IHRCs function structurally as *an argument* or *an adjunct* in main clauses. In the following §1.2, I review previous studies from a typological point of view.

1.2. IHRCs from a typological point of view

1.2.1. Internal correlation between IHRCs and Altaic-type languages

On the correlation between features such as *word-order* or so-called *pro-drop* possibility and the existence of IHRCs, Kuroda (1999 [2005: 294, 296]) states:

> Other than Japanese, there are various languages in the world which have IHRCs. For example, languages of the Nakan or Athabaskan people in North-America, languages of the Hopi people and languages of the Quechua people in South America, etc.
>
> It is said that languages which have IHRCs share some features in common. The first is that, concerning word-order, verbs are placed at the end of sentences. The second is a phenomenon which we; linguists; refer to as a zero pronoun. Languages which have IHRCs are said to have necessarily these two features. In reverse, if a language lacks these two features, it does not have IHRCs. The dependencies between such features should be determined by generative grammar.

Keenan (1985: 161–169) presents some examples of IHRCs in Tibetan (Sino-Tibetan), Diegueño (Yuman), Wappo (Yukian), and Bambara (Niger-Congo) and says that IHRCs exist only in the languages where the basic word order is SOV. In many languages with IHRCs, such as Tibetan, Navajo, and Quechua, IHRCs precede the noun.

If such descriptions of Kuroda (1999) and Keenan (1985) are correct, from a typological viewpoint one can consider this as a feature of so-called Altaic-type languages (Kamei, Kono, and Chino 1996: 28–29). Summarizing above, the existence of IHRCs is a unique

feature of head-final languages. In Altaic-type languages, IHRCs composed of so-called participles[7] are widespread.

1.2.2. Positioning of IHRCs among complex sentences

According to Croft (2001: 322), complex sentences are traditionally classified into four types: relative clauses, complements, adverbial clauses, and coordinate clauses. Croft (2001) developed typological studies on the structural and functional continuity among these four types. In addition, Croft considered IHRCs to be constructions placed midway between complement clauses and relative clauses. However, due to space limitations, the author cannot explain more. Please see Croft (2001: 320−361) for further information on this topic.

1.3. Aim of this study

Studies examining IHRCs in Turkic and Mongolic languages are few. Concerning Tungusic languages, Malchukov (1995) has described Ewen (Tungusic), which will be dealt with in §1.4.4. Some descriptions of IHRCs in "Altaic-type" languages such as Modern Japanese, Old Japanese, Korean, and Ewen will be presented in detail in this paper.

Subsequently, the results of the investigation, which employed an elicitation method, will be shown. It involves five languages, namely Turkish (Turkic), Uighur (Turkic), Mongolian Khalkha dialect (Mongolic), Nanai (Tungusic), and Korean. Note that the Mongolian Khalkha dialect will hereafter simply be referred to as "Mongolian." The ultimate goal of this paper is to clarify the features and theoretical position of IHRCs in these five languages and also to explain why some features of pro-drop + SOV and the existence of IHRCs correlate with each other.

Note that, to investigate Turkic languages, Turkish and Uighur are used. This is for two reasons: First, these two languages are geographically furthest from each another in the Turkic group (the former is spoken in the westernmost and the latter in the easternmost region of Eurasia). In addition, Turkish is greatly influenced by Arabic and Persian. Consequently, the composition of complex sentences may also have been influenced by these languages. Second, these two Turkic languages differ in participial forms. In Turkish, generally speaking, different participles must be used based on whether the concerned adnominal clause modifies a subject noun (*-(y)an/²*; /ˣ shows that there are allomorphs caused by the vowel harmony) or a non-subject noun (*-dik/⁴* / *-tik/⁴*). In Uighur, however, *-GAn* (a italicized consonant and vowel show many allomorphs caused by assimilation) is used in both constructions (note that the elements *-(y)an* in Turkish and *-gan* in Uighur are cognate). Summarizing the above, comparing these two languages (Turkish and Uighur) it

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[7] Generally, the participle in Altaic languages is a verb form, combining both verbal and nominal features. Syntactically, the participle performs a wide range of functions, being used as an attributive modifier (cf. (N2)), as a sentential argument/adjunct (cf. (10)) or in a predicate position (cf. (N1)).

seems that we can determine some rough prospects concerning the IHRC in the whole of Turkic languages.

1.4. Previous studies on IHRCs in Altaic-type languages

In this section, the author reviews descriptions of IHRCs in Modern Japanese, Old Japanese, Korean, and Ewen. Then, the author points out problems with the previous studies. Based on information from previous studies, the author contrasts the IHRCs of the considered languages.

1.4.1. IHRCs in Modern Japanese

Kuroda (1992) states that a relevancy condition is needed to establish IHRCs. In other words, IHRC constructions will be natural only when an identity of time or location or a pragmatically close relationship is recognized.

Concerning these conditions, some descriptions of Mihara (1994: 81–82) are summarized below.

I. Identity of time

(3) a. *tanakasi=wa   okusaN=ga   kinoR   zyosei#zaQsi=o*
     PSN=TOP   wife=NOM   yesterday   women's.magazine=ACC
     kaQ-ta=no=o   *hima#tubusi=ni*   *yoNda.*
     buy-ADN.PST=FN=ACC   killing.time=DAT   read
     ('Mr. Tanaka read which his wife bought yesterday the women's magazine for killing time')

                                                 [internal]

   b. *takanasi=wa   okusaN=ga   kinoR   kaQ-ta*
     PSN=TOP   wife=NOM   yesterday   buy-ADN.PST
     zyosei#zaQsi=o   *hima#tubusi=ni*   *yoNda.*
     women's.magazine=ACC   killing.time=DAT   read
     'Mr. Tanaka read the women's magazine which his wife bought yesterday for killing time'

                                                 [external]

In (3a), with an IHRC, the time when Mr. Tanaka read the women's magazine must be the same as the time that his wife bought. In (3b), with an externally headed relative clause (EHRC), this is not necessarily so.

II. Identity of location

(4) a. *kakarityoR=wa   zimuiN=ga*   *tukue=no   ue=ni   syorui=o*

manager=TOP   office.worker=NOM   desk=GEN   top=DAT document=ACC
oite   *oi-ta=no=o*   *kaigisitu=ni*   *moQte*   *iQta.*
putting   put-ADN.PST=FN=ACC   meeting.room=DAT   bringing   went
'The manager brought the document which the office worker placed on the desk to the meeting room'
('The manager brought which the office worker placed the document on the desk to the meeting room')

[internal]

b. *kakarityoR=wa* *zimuiN=ga*   *tukue=no*   *ue=ni*
manager=TOP   office.worker=NOM desk=GEN   top=DAT
oite   *oi-ta*   *syorui=o*   *kaigisitu=ni*   *moQte*   *iQta.*
putting put-ADN.PST   document=ACC   meeting.room=DAT bringing   went
'The manager brought the document which the office worker placed on the desk to the meeting room'

[external]

In (4a), with an IHRC, the desk from which the manager picked up the document must be the one on which the office worker placed it. In (4b), with an externally headed relative clause (EHRC), it is not necessarily so. For example, it will be grammatical even if an office worker places the document on the manager's desk, then another office worker places it on the general manager's desk, and the manager brings it to the meeting room.

III. Pragmatically close relationship

(5) a. *sakurada=wa*   *goRtoR=ga*   *osoi#kakaQte*
        PSN=TOP   burglar=NOM   assaulting
        ki-ta=no=o   *nezi#huseta.*
        come-ADN.PST=FN=ACC   held.down
        'Sakurada held down the burglar who assaulted him'
        ('Sakurada held down which the burglar assaulted him')
  b.*sakurada=wa*   *musume=ga*   *harubaru*
        PSN=TOP   daughter=NOM   from.far.away
        tazunete   *ki-ta=no=o*   *nezi#huseta.*
        visiting   come-ADN.PST=FN=ACC   held.down
        'Sakurada held down his daughter who visited him from far away'
        ('Sakurada held down which his daughter visited him from far away')

While example (5a) seems to have a natural relationship between the IHRC and the main clause, example (5b) needs context to appear natural.

1.4.2. Subnominalization in Old Japanese
Below is a summary of Yoshimura (2004).

As already seen in §1.4.1, IHRCs in Modern Japanese are formed with the formal noun *no*. According to Shida (1976) and other linguists, it is estimated that such constructions in the modern language were established in the late Muromachi period (1336–1573) or in the early Edo period (1603–1868). In Old Japanese, on the other hand, adnominal forms functioned as nominal arguments by themselves. This fact has been studied in terms of "subnominalization of adnominal forms" (subnominalized phrases).

Ishigaki (1955) classifies subnominalized phrases into concrete and active phrases.

(6) a. *[tomo=no   eNpoR=yori   otodure-taru][8]=o   motenasu.*
         friend=GEN   from.far.away=ABL   come-PTCP=ACC   entertain
         'I entertain the friend who came from far away'
         ('I entertain [which the friend came from far away]')

     b. *[tomo=no   eNpoR=yori   otoduretaru]=o   yorokobu.*
         friend=GEN   from.far.away=ABL   come-PTCP=ACC   be.pleased
         'I am pleased that the friend came from far away'

The subnominalized phrase in (6a) means "**the friend** who came from afar" (i.e. a person), while in (6b) it means "**the fact** that the friend came from afar" (i.e. an event). Ishigaki analyzed the former as corresponding to *mono* "a (material) thing," and the latter as *koto* "an event, an abstract thing" respectively. In addition, he pointed out that some aspectual restrictions were observed in predicates in subnominalized phrases. However, as it is not within the purview of this paper, this will not be dealt with in further detail here.

Kinsui (2001) pointed out that the particle *no* in *no*-clauses in Modern Japanese has a nominal feature coinciding with *mono* "a (material) thing" in the semantic category, while subnominalized phrases in Old Japanese have no such feature. For example, sentences from Modern Japanese in (7) show that the particle *no* in question cannot express "respectivity," "location," or "time."

(7) a. *(gaQkai=de)   [zuibuN   hutoQ-ta]*=no=ga / seNsei=ga*
         conference=LOC   very   be.fat-ADN.PST=FN=NOM / professor=NOM
         haiQte   iraQsyaQta.
         entering   came.HONOR

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[8] Here *[ ]* exhibit the range of the noun clause.

'(In the conference) who / the professor [is very fat] entered'

                                                                    [respectivity]

b. *[tanaka=ga   i-ru]*=no=ni / tokoro=ni   yamada=mo   kita.*
    PSN=NOM   be-ADN.NPST=FN=DAT / place=DAT   PSN=CUM   came
    '[Where / The place where [Tanaka is] came Yamada as well'

                                                                    [location]

c. *[tanaka=ga   paRtiR=ni   ki-ta]*=no=ni / toki=ni*
    PSN=NOM   party=DAT   come-ADN.PST=FN=DAT / time=DAT
    yamada=wa   konakaQta.
    PSN=TOP   did.not.come
    'When / The time when [Tanaka came to the party] Yamada did not come'

                                                                    [time]
                                                                (Kinsui 2001: 2)

Whereas the examples in (8) show that in Old Japanese there is no such constraint and that it can express all three meanings, i.e. "respectivity," "location," and "time."

(8) a. *[mono#obofi   siri-tamaf-u]=wa,*
        thing#understanding   know-HONOR-PTCP=TOP

        sama yoRboR=nado=no medetakarisi koto,

        kokorobase no nadaraka=ni meyasuku,

        nikusimi#gatakarisi koto=nado, ima=zo obosi#ideturu.

        '[Who understands the thing] remembers just now that they had atmospheres and appearance were wonderful, that their personalities were tranquil and they are good-looking, and that they are the people who cannot be hated'

                                            (Kiritsubo 1-101, Genji) [respectivity]

    b. *atago=to ifu tokoro=ni,*

        [ito   ikamesiu   sono   sahoR   si-taru]=ni,
         very   solemnly   that   manner   do-PTCP.PST=DAT

        ofasi tukitaru kokoti, ikabakarika=fa arikemu.

        'How did he feel when he arrived at the place called Atago, [where they were very solemnly doing it]?'

                                            (Kiritsubo 1-100, Genji) [location/time]

    c. *[tuki=no   kaki]=ni,*
        moon=GEN   bright=DAT

        yakata naki kuruma=no afitaru.

        '[In (the night) when the moon is bright], they encounter a car without a roof'

                                            (Makura no Sōshi 93) [time]

When the subnominalized phrases of these examples are translated into Modern Japanese, they will be:

- *monogoto o gozoNzi no kata* — "those who know the affairs" (8a),
- *totemo ogosokana (soRsiki no) sahoR o siteiru toki/basyo* — "the time where / the place when they are behaving in a very solemn manner (of the funeral)" (8b), and
- *tuki ga akarui zikaN* — "the time when the moon is bright" (8c),

none of which pose grammatical problems.

Kinsui (2001: 2) implies that it is possible to assume a formless pronoun pro, which has no semantic constraint at all as to the head of subnominalized phrases in Old Japanese. The aforementioned summary is based on the description by Yoshimura (2004: 57–62).

1.4.3. IHRCs in Korean

Horie (1995) considers constructions with an adnominal form and nominalizer *ges* (*kes* in Horie's transliteration) in Korean to be IHRCs.[9] His method of analysis contrasted these IHRCs with those in Japanese.

As a result, Horie points out that in Korean, IHRCs are less fixed than those of Japanese and that their acceptability varies among native speakers. According to his explanation, this is because the nominalizer *ges* in Korean has a lexical meaning corresponding to *mono* "a (material) thing" and *koto* an "event," even in Modern Korean, unlike *no* in Japanese. Whereas, he points out that, in complement clauses, constructions with an adnominal form and the nominalizer *ges* can be used without problem.

1.4.4. IHRCs in Ewen

Malchukov (1995: 38–39) has considered IHRCs in Ewen, a Tungusic language. His observations are summarized below (note that example numbers have been changed to correspond to this paper):

IHRCs in Ewen are marginal. They are less frequently used than EHRCs, are subject to dialectal variation, and are heavily constrained by additional syntactic conditions. The conditions are: I) the syntactic position of an IHRC and II) the syntactic position of a head noun in relative clauses.

Regarding (I), IHRCs appear only in the subject or direct object position.

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9 The following is an example of IHRC in Korean. Horie (1995: 90) presented:
   Mary-nun [John-i   kil-ul   kenne-nun] kes-ul   ala-ssta.
   Mary-TOP   John-NOM   street-ACC cross-ADN   kes-ACC   learn-PST

[subject]

(9) *asi*   *unta-l-bu*   *aj-ča-n*   *urkə-lə*   *dəči-r.*
   woman-NOM   shoe-PL-ACC   mend-PERF.PTCP-3SG   door-LOC   lie-NONFUT:3PL
   'The shoes which the woman mended are lying at the door'
   ('Which the woman mended the shoes are lying at the door')

[direct object]

(10) *ətikən*   *ǰuu-ga-j*   *oo-ča-wa-n*   *bak-ra-m.*
    old.man-NOM   house-DES-REF.POSS   do-PERF.PTCP-ACC-3SG   find-NONFUT-

1SG

    'I found his house which the old man made'
    ('I found which the old man made his own house')

Regarding (II), internal head nouns in relative clauses are placed only in the direct object position, in most dialects. In the examples above, they are put in the nominative or designative case. In some central dialects (especially in the Oymyakon dialect), they are applied also to the intransitive subject, which is exemplified by attribute raising constructions.

(11) *bəil*   *hər-čə-wu-tən*   *əmu-rə-m.*
    man-PL   go-PERF.PART-ACC-3PL   bring-NONFUT-1SG
    'I brought those who went away'
    ('I brought which the people went away')

According to Malchukov (1995: 38–39), IHRCs in Ewen are very similar to EHRCs concerning their function and are acceptable with almost the same meaning, but they can have more restrictions.

1.4.5. Summary of previous research and problems

As already discussed, there is no semantic distinction in Old Japanese between *mono* "a (material) thing" and *koto* "event" with subnominalized phrases, and they can be used to indicate place or time. This may be because adnominal forms in subnominalized phrases in Old Japanese are a kind of (phrasal) nominalizations with no formal nouns. On the other hand, in Korean, the formal noun *ges* (the nominalizer in Horie 1995) has not been sufficiently grammaticized, with the result that IHRCs are hardly established.

In Old Japanese, *mono* "a (material) thing" and *koto* "an event," are not distinguished. Accordingly, some kinds of complex clauses introduced by complement clauses, and in Standard Average European (SAE) by relative clauses, are also expressed by

subnominalized phrases. This must have something to do with the typological studies of Croft (2001), where IHRCs are placed between complement clauses and relative clauses.

This situation in Old Japanese appears very similar to that of Altaic languages. So-called participial forms in Altaic languages function not only as adnominal attributions but also as nominal arguments in main clauses that take the direct case. In these circumstances, no distinction is made between *mono* "a (material) thing" and *koto* "an event." Therefore, they can indicate a concrete thing, an event, or a time. In other words, both relative clauses and complement clauses in SAE can be expressed by assigning the case to participial forms.

In the next section, taking such a phenomenon into consideration, the author will verify if certain sentences that are expressed differently according to type of clause in SAE— temporal clauses, local clauses, complement clauses, and relative clauses—are truly expressed by similar constructions in Altaic-type languages. The author will verify in more detail if they are expressed by constructions with [a participial form + a case] in Altaic languages and with [an adnominal form + a formal noun + a case] in Korean and Japanese. Through this investigation, the position of IHRCs in these languages should be clarified.

2. Methods and methodology

2.1. Sentences used in investigation

In the research, the 13 sentences below are used:

[1] *watasi=wa   sono   hito=ga   kita   toki=ni   gohaN=o   tabete   ita.*
     I[10]=TOP   that   man=NOM   came   time=DAT   food=ACC   eating   was
     'I was eating a meal when that person came'

                                                                    [temporal clause]

[2] *watasi=wa   sono   hito=ga   maQte   i-ru   tokoro=ni   iQta.*
     I=TOP   that   man=NOM   waiting be-ADN.NPST   place=DAT   went
     'I went to the place where that person was waiting'

                                                                    [local clause]

[3] *watasi=wa   sono   hito=ga   hasiQte   iQ-ta=no=o   mita.*
     I=TOP   that   man=NOM   running   go-ADN.PST=FN=ACC saw
     'I saw that person running away'

                                                        [complement clause / visual]

[4] *kinoR=no   yoru,   watasi=wa*
     yesterday=GEN   evening I=TOP

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[10] The gloss "1SG" is used for conjugational endings and not for personal pronouns such as "I."

karera=ga   syabeQte   i-ru=no=o   kiQta.
they=nom   talking   be-ADN.NPST=FN=ACC   heard
'Last night, I heard them talking'

[complement clause / auditory]

[5] *watasi=wa   sono   hito=ga   kinoR   koko=ni   kita=no=o*
I=TOP   that   man=NOM   yesterday here=DAT   come-ADN.PST=FN=ACC
siQte   iru.
knowing   be
'I know that he came here yesterday'

[complement clause / knowledge]

[6] *watasi=wa   sono   hito=wa   kinoR   koko=ni   kita=to   iQta.*
I=TOP   that   man=TOP   yesterday here=DAT   came=QUOT   said
'I said that that person came here yesterday'

[complement clause / utterance]

[7] *watasi=wa   watasi=ga   kinoR=mo   koko=ni   ki-ta   koto=o*
I=TOP   I=NOM   yesterday=CUM here=DAT   come-ADN.PST thing=ACC
sono   otoko=ni   tuaeta.
that   man=DAT   told
'I told him that I had come here yesterday'

[complement clause / communicating]

[8] *watasi=wa   riNgo=ga   (ano)   sara=no   ue=ni*
I=TOP   apple=NOM   that   dish=GEN   top=DAT
aQ-ta=no=o   tabeta.
be-ADN.PST=FN=ACC   ate
'I ate the apple which was on (a/that) plate'
('I ate which the apple was on (a/that) plate')

[IHRC / subject in subordinate clause / object in main clause]

[9] *ano   hito=ga   ie=ni   kaeQ-ta=no=o   moR itido turete kita.*
that   man=NOM   home=DAT   return-ADN.PST=FN=ACC   again   taking   came
'I brought back that person who went home'
('I brought back which that person went home')

[IHRC / subject in subordinate clause / object in main clause]

[10] *watasi=wa neko=ga ie=ni   haiQte   ki-ta=no=o*   *tukamaeta.*
I=TOP   cat=NOM home=DAT entering come-ADN.PST=FN=ACC caught
'I caught the cat which entered the house'
('I caught which the cat entered the house')
[IHRC / subject in subordinate clause / object in main clause]

[11] *ano hito=ga   kutusita=o nuQ-ta=no=wa*   *tukue=no ue=ni   aru.*
that man=NOM socks=ACC sew-ADN.PST=FN=TOP table=GEN top=DAT be
'The socks which that person sewed/mended are on the desk'
('Which that person sewed/mended the socks are on the desk')
[IHRC / object in subordinate clause / subject in main clause]

[12] *watasi=wa ano   hito=ga   zibuN=no   hoN=o*
I=TOP   that   man=NOM himself=GEN book=ACC
wasurete   iQ-ta=no=o   mituketa.
forgetting go-ADN.PST=FN=ACC   found
'I found the book which that person left behind'
('I found which that person left behind his own book')
[IHRC / object in subordinate clause / object in main clause]

[13] *watasi=wa zibuN=no   kodomo=ga   otoRto=o*
I=TOP   myself=GEN child=NOM   brother=ACC
tatai-ta=no=o   sikaQta.
hit-ADN.PST=FN=ACC   scolded
'I scolded my child who hit his brother'
('I scolded which my child hit his brother')
[IHRC / subject in subordinate clause / object in main clause]

The author chose the 13 sentences above considering the following grammatical conditions: Sentence [1] is temporal and [2] is a local usage of participial forms (note that *ges* "(material) thing / event" in Korean). In sentences [3] to [7], complement clauses are used in SAE. In main clauses, verbs such as *see*, *hear*, *know*, *say,* and *tell* (i.e. verbs with *that*-clause) express perception, knowledge, and linguistic activity and can take *koto,* "an event," as an object. Sentences [8] to [13] are so-called IHRCs. Table 1 shows their syntactic differences:

Table 1   Syntactic construction in IHRC sentences

Sentences	Subordinate	Main	Head in IHRC	Function in MC
[8], [9], [10]	intransitive	transitive	subject	object

[11]	transitive	intransitive	object	subject
[12]	transitive	transitive	object	object
[13]	transitive	transitive	subject	object

2.2. Consultants and Detailed Methodology

I asked for only one consultant for each language. Their profiles are shown in Table 2.

Table 2   Profiles of the consultants

Language	Date of birth	Place of birth
Turkish	1981	Istanbul
Uighur	1991	Shūlè, Kashgar
Mongolian	1991	Ulaanbaatar
Nanai[11]	1935	Naykhin
Korean	1978	Yecheon, Gyeongsangbuk-do

Methodology differed slightly between the two groups (Turkish and Nanai; Uighur, Mongolian, and Korean) due to the use of bridge languages. As the consultants for Turkish and Nanai were not fluent in Japanese, I constructed sentences with participles beforehand and let them judge their acceptability. Where some sentences were judged to be inacceptable, I asked the consultants to make the most natural sentence to express the intended situation. In addition, regarding EHRCs or other aspects, the consultant judged their acceptability. The consultants for Uighur, Mongolian, and Korean spoke fluent Japanese. I asked them to translate the Japanese sentences into (natural) expressions in the language concerned and then to judge the acceptability of each sentence with a construction with a participle and case (an adnominal form, a formal noun *ges*, or a case in Korean). Concerning Japanese sentences, the author himself (born in Tokyo, 1965) judged them by introspection.

3. Results

3.1. Detailed results for each example

Those examples expressed with [a participial form and a case] ([an adnominal form, a formal noun, and a case] in Korean and Japanese) are indicated by [PTCP] at the end. Regarding these examples, only verbs in subordinate clauses are analyzed as morphemes. Those words that include [a participial form (or an adnominal form and a formal noun) and a case (or a reflexive person affix in some examples)] are indicated in bold-face. If the example concerned is an EHRC, it is indicated by [EX] and the others are explained. Due to limitations of space, morpheme analyses other than those of elements concerned in this study are minimized and glosses are simplified. In addition, if there is another example that the consultant made first or that was considered better by him/her, are also shown (in the

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[11] Nanai is an endangered language and does not have any fluent speakers in younger generations.

order of their utterance). Language abbreviations are: J (Japanese), T (Turkish), U (Uighur), M (Mongolian), N (Nanai), and K (Korean). The transliteration of the Cyrillic alphabet in Mongolian followed Umetani (2008) and, in principle, that of Han-Gul (Korean alphabet) followed Kono (1947). In addition, the transliteration of the Arabic alphabet in Uighur was done using a system particular to this paper.

(J1) a. *watasi=wa sono hito=ga **kita=no=ni** gohaN=o tabete ita. [PTCP]
                 (impossible as a temporal clause)

(J1) b. watasi=wa sono hito=ga kita toki=ni gohaN=o tabete ita.
 'I was eating a meal when that person came'

(T1) *ben*   *o*   *adam*   **gel-diğ-i-n-de**   *yemek*   *yiyordum.* [PTCP]
   I   that   man   come-PTCP-3-P-LOC   food   I.was.eating

(U1) *mæn*   *u*   *adam*   **kæl-gæn-dæ**   *tamaq*   *yewatattim.* [PTCP]
   I   that   man   come-PTCP-LOC   food   I.was.eating

(M1) *bi*   *tüünijg*   **ir-e-x-e-d**   *xooloo*   *idež*   *bajsan.* [PTCP]
   I   him   come-E-PTCP-E-DAT   own.food   eating   was

(N1) *mii*   *təi*   *nai*   **{ǰi-dii- / ǰi-čin}-du-ə-ni**   *siaxambi.* [PTCP]
   I   that   man   come-PTCP-DAT-OB-3SG   I.was.eating

(K1) a. *na=num*   *gu*   *saram'i*   *'o-ass-ur*   *ddai bab'ur meggo*   *'iss'essda.*
    I=TOP   that   man   come-PST-ADN   time meal   eating   was

   b. *na=num*   *gu*   *saram'i*   **'o-ass-ur**   **ges-'el**   *bab'ur*   *meggo*
     I=TOP   that   man   come-PST-ADN   FN-DAT   meat   eating

    'iss'essda. [PTCP]
    was

In Korean and Japanese, sentences must be formed using expressions such as *X sita toki* "when S did X" and cannot be formed with the construction [an adnominal form, a formal noun, and a case]. In Altaic languages, on the other hand, they can be expressed by constructions of [a participial form and a case].

(J2) a. *watasi=wa*   *sono*   *hito=ga*   **maQte**   **iru=no=ni**   *iQta.* [PTCP]
                  (impossible as a local clause[12])

(J2) b. *watasi=wa*   *sono*   *hito=ga*   *maQte*   *iru*   *tokoro=ni*   *iQta.*
    'I went to the place where that person was waiting'

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[12] This sentence is acceptable in a concessive meaning such as "I went there though he was waiting."

(T2) a.*ben   o   adamın   **bekle-diğ-i-n-e**   gittim. [PTCP]
      I   that   man   wait-PTCP-3-P-DAT   I.went

(T2) b. ben   o   adamın   bekle-diğ-i   yere   gittim.
      I   that   man   wait-PTCP-3   to.the.place   I.went [EX]

(U2) a.*mæn   u   adæm   **saqlawat-qan-gæ**   bardim. [PTCP]
      I   that   man   wait-PTCP-DAT   I.went

(U2) b. mæn   u   adæm   saqlawat-qan   yærgæ   bardim.
      I   that   man   wait-PTCP   to.the.place   I.went [EX]

(U2) c. mæn   u   adæm   **saqlawat-qan-da**   bardim. [PTCP]
      I   that   man   wait-PTCP-DAT   I.went

                              (impossible as a local clause)

(K) a. bi   tüünijg   jag   xüleež   baj-tal   irsen.
     I   him   just   waiting   be-CVB   came

Example (M2a) is an expression with an adverbial clause.

(M2) b. bi   tüünijg   jag   xüleež   bajsan   gazart   irsen.
     I   him   just   waiting   was   place   came [EX]

(M2) c.*bi   tüünijg   jag   xüleež   **bajx-a-d**   irsen. [PTCP]
     I   him   just   waiting   on.the.being   came

                              (impossible as a local clause)

(N2) a. mii   təi   nai   (mimbiə)   xalači-i(-ni)   boači   ənəxəmbi.
     I   that   man   (me)   wait-PTCP(-3)   to.the.place   I.went   [EX]

(N2) b. mii   təi   nai   (mimbiə)   **xalači-i-či-a-ni**   ənəxəmbi. [PTCP]
     I   that   man   (me)   wait-PTCP-DIR-OB(-3)   I.went

(K2) a. na=num   gu   saram'i   gidarigo   'iss-nun   gos-'ei   gassda.
     I=TOP   that   man   waiting   be-ADN   place-DAT   went [EX]

(K2) b.*na=nun   gu   saram'i   gidarigo   **'iss-num ges-'el**   gassda. [PTCP]
     I=TOP   that   man   waiting   be-ADN   FN-DAT   went

   In Turkish, Mongolian, and Korean, the sentences can only be formed using constructions with a noun of "place" (*yer* in Turkish, *gazar* in Mongolian, and *gos* in Korean) and an adnominal attribute modifying it. In Nanai, as expected, they are expressed by *boa* "place," but constructions with a participial form and a (directional) case are also possible.

(J3) *watasi=wa sono hito=ga* **hasiQte iQta=no=o** *mita.* [PTCP]
     'I saw that person running away'

(T3) *ben*   *o*   *adamın*   **koş-tuğ-u-n-u**   *gördüm.* [PTCP]
      I   that   man's   run-PTCP-3-P-ACC   I.saw

(U3) *mæn*   *u*   *adæmniŋ*   *yügürüp*   **kæt-kin-i-n-i**   *kördüm.* [PTCP]
      I   that   man's   run-CVB   go-PTCP-3-P-ACC   I.saw

(M3) *bi*   *tüünijg*   *güjž*   **baj-x-yg**   *n'*   *xarsan.* [PTCP]
      I   him   running   be-PTCP-ACC   3.POSS   saw

(N3) *mii*   *təi*   *nai*   *tutumi*   **ənə-i-wə-ni**   *ičəxəmbi.* [PTCP]
      I   that   man   running   go-PTCP-ACC-3SG   I.saw

(K3) *na=num*   *gu*   *saram'i*   *darrigo*   **'iss-num**   *ges-'ur*   *bo'assda.* [PTCP]
      I=TOP   that   man   running   be-ADN   FN-ACC   saw

 (J4) *kinoR=no yoru, watasi=wa karera=ga* **syabeQte iru=no=o** *kiRta.* [PTCP]
      'Last night, I heard them talking'

 (T4) *dün*   *akşam,*   *ben*   *onların*   **konuş-tuğ-u-n-u**   *dinledim.* [PTCP]
      yesterday   evening   I   their   talk-PTCP-3-P-ACC   I.heard

 (U4) *tünügün*   *kæč,*   *mæn*   *ularniŋ*   *gæp*   **qilišiwat-qin-i-n-i**
      yesterday   evening   I   their   talk   doing.each.other-PTCP-3-P-ACC
      aŋlidim. [PTCP]
      I.heard

 (M4) *öčigdör*   *oroj*   *ted*   *naryn*   *jar'ž*   **baj-x-yg**   *n'*
      yesterday   evening   they   PL   talking   be-PTCP-ACC   3.POSS
      sonsson. [PTCP]
      heard

 (N4) *čisəəniə*   *dolbo*   *mii*   *ňoanči*   **xisaŋgo-i-wa-či**   *dooiǰixambi.* [PTCP]
      yesterday   evening   I   they   talk-PTCP-ACC-3PL   I.heard

 (K4) *'ejei*   *bam*   *nanum*   *gudur'i*   *marhago*   **'iss-nun ges-'ur**
      yesterday   evening   I   they   talking   be-ADNFN-ACC
      dur'essda. [PTCP]
      heard

 (J5) *watasi=wa sono hito=ga kinoR koko=ni* **kita=no=o** *siQte iru.* [PTCP]
      'I know that he came here yesterday'

 (T5) *ben, o*   *adamın*   *dün*   *buraya*   **gel-diğ-i-n-i**   *biliyorum.* [PTCP]
      I   that man's   yesterday   here   come-PTCP-3-P-ACC   I.know

 (U5) *mæn*   *u*   *adæmniŋ*   *tünügün*   *bu*   *yærgæ*   **kæl-gin-i-n-i**
      I   that man's   yesterday   here   to.the.place   come-PTCP-3-P-ACC
      bilimæn. [PTCP]
      I.know

(M5) *ternij   öčigdör   end   **ir-sn-ijg**   bi   medež   bajgaa.* [PTCP]
      his   yesterday here   come-PTCP-ACC   I   knowing   am

(N5) *mii   təi   nai   čisəəniiə   əusi   {**ǰi-dii-wə-ni / ǰi-čim-bə-ni**}   saariiji.* [PTCP]
      I   that man   yesterday   here   come-PTCP-ACC-3SG   I.know

(K5) *na=nun   gu   saram'i   'ejei   'yogi'ei   **'o-n**   **ges-'ur**   'argo*
      I=TOP   that man   yesterday here   come-ADN   FN-ACC   knowing
      'issda. [PTCP]
      be

In sentences like [3] "see," [4] "hear," and [5] "know," which are expressed with complement clauses in SAE, we can conclude that the construction concerned is the most consistently used in all of the languages.

(J6) a. **watasi=wa sono hito=wa kinoR koko=ni **kita=no=o** iQta.* [PTCP]

(J6) b. *watasi=wa sono hito=wa kinoR koko=ni kita=to iQta.*
          'I said that that person came here yesterday'

(T6) a. *ben, o   adamın dün   buraya   **gel-diğ-i-n-i**   söyledim.* [PTCP]
          I   that man's yesterday here   come-PTCP-3-P-ACC   I.said

(T6) b. *ben, o   adam   dün   buraya gel-di   diye   söyledim.*
          I   that man's yesterday here   come-IND.PST   that   I.said

(U6) a. *mæn u   adæm tünügün   bu   yærgæ   kæl-di   dedim.*
          I   that man's yesterday this to.the.place come-IND.PST   I.said

According to the Uighur language consultant, when a word appears between *kæl-di* "came" and *dedim* "I said," the quotative marker *dæp* is used as seen (U7b) below. In (U6a) above, *dæp* can be deleted in analysis to avoid a continuance of cognate elements (i.e., *dæp dedim*).

(U6) b. **mæn u   adæmniŋ   tünügün   bu   yærgæ   **kæl-gin-i-n-i***
         I   that man's   yesterday this to.the.place come-PTCP-3-P-ACC
         dedim. [PTCP]
         I.said

(M6) a. *bi   tüün-ijg   öčigdör   end   ir-sn   gež   xel-sen.*
          I   he-ACC   yesterday here   come-PTCP   that   say-PTCP

(M6) b. *bi   tüün-ijg   öčigdör   end   ir-sen   **baj-sn-yg**   n'   xel-sen.*[PTCP]
          I   he-ACC   yesterday here   come-PTCP   be-PTCP-ACC   3.POSS   say-PTCP

(M6) c. *bi   tüün-ijg   öčigdör   end   **ir-sen-ijg**   n'   xel-sen.* [PTCP]
          I   he-ACC   yesterday here   come-PTCP-ACC   3.POSS   say-PTCP

In Mongolian, according to the consultant, all three sentences from (M6a) to (M6c) can be used without problem, but the last one sounds casual. Such an expression would be used among peers of a similar age.

(N6) a. *mii tǝi nai čisǝǝniǝ ǝusi ji-či-ni=ǝm*　　　*uŋ-kim-bi.*
　　　　I　that　man　yesterday　here　come-PTCP-3SG=QUOT　say-PTCP-1SG

(N6) b. *mii tǝi nai čisǝǝniǝ ǝusi **ji-čim-bǝ-ni**　　　uŋ-kim-bi.* [PTCP]
　　　　I　that　man　yesterday　here　come-PTCP-ACC-3SG　say-PTCP-1SG

(K6) a. *nanun gu saram'i 'ejei　　'yegi'ei 'o-ass-dago　　　marhaissda.*
　　　　I　　that　man　　yesterday　here　come-PST-QUOT　said

(K6) b.**nanun gu saram'i 'ejei　　'yegi'ei **'o-ass-nun**　　ges-'ur**
　　　　I　　that　man　　yesterday　here　　come-PST-ADN　FN-ACC
　　　　marhaissda. [PTCP]
　　　　said

(K6) c. *nanun gu saram'i 'ejei　　'yegi'ei **'o-n**　　ges-'ur**
　　　　I=TOP　that　man　　yesterday　here　　come-ADN　FN-ACC
　　　　marhaissda. [PTCP]
　　　　said

(K6) d. *na=nun gu saram'i 'ejei　　'yegi'ei **'o-ass-danun**　　ges-'ur**
　　　　I=TOP　that　man　　yesterday　here　　come-PST-QUOT　FN-ACC
　　　　marhaissda. [PTCP]
　　　　said

In (K6d), the fact that "that person came yesterday" seems to be emphasized.

These sentences are also expressed using the quotative marker derived from the verb *say* (T6a, M6a, N6a): *diye* in Turkish, *dæp* in Uighur, *gež* in Mongolian and *=m* in Nanai. However, they can also be expressed with constructions using a participle and case, except in Uighur. In addition, the meanings can be expressed in Korean by constructions with [an adnominal form, a formal noun, and a case]. Only in Japanese can the construction concerned not be used.

(J7) a. *watasi=wa watasi=ga kinoR=mo koko=ni kita koto=o sono otoko=ni tutaeta.*

(J7) b. *?[13]watasi=wa watasi=ga kinoR=mo koko=ni **kita=no=o** sono otoko=ni tutaeta.*
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　[PTCP]

　　　'I told him that I had come here yesterday'

---

[13] At least some Japanese speakers judge this sentence acceptable. This comment is by one of the reviewers of this article.

(T7) *ben   dün   de   buraya   **gel-diğ-im-i**   o   adama*
      I   yesterday also   here   come-PTCP-1SG-ACC   that   to.the.man
      söyledim. [PTCP]
      I.said

(U7) a. *mæn tünügünmu   bu   yærg   **ækæl-gin-im-ni**   u   adæmgæ*
      I   yesterday.also this to.the.place come-PTCP-1SG-ACC   that to.the.man
      eyttim. [PTCP]
      I.said

(U7) b. *mæn tünügünmu   bu   yærgæ   kæl-di-m   dæp u*
      I   yesterday.also this to.the.place come-IND.PST-1SG   that that
      adæmgæ   eyttim.
      to.the.man   I.said

(M7) a. bi *öčigdör   č   bas   end   **ir-sn-ee**   tüünd   xelsen.* [PTCP]
      I   yesterday   also here   here   come-PTCP-REF   to.him   said

(M7) b. *bi öčigdör   č   bas   end   irsen   gež   tüünd   xelsen.*
      I   yesterday also here   here   come-PTCP   that   to.him   said

(N7) a. *mii čisəəniə=dəə   əusi jičimbi=əm   təi   naiči*
      I   yesterday=also   here come-PTCP-REF.SG=QUOT   that   to.the.man
      uŋkimbi.
      I.said

(N7) b. *mii čisəəniə=dəə   əusi **ji-čim-bi**   təi   naiči*
      I   yesterday=also   here come-PTCP-REF.SG   that   to.the.man
      uŋkimbi. [PTCP]
      I.said

(K7) a. *na=nun   nai=ga   'ejeido   'yegi'ei {'o-ass-dago   / 'o-ass-'ess-dago}*
      I=TOP   I=NOM   yesterday here   come-PST-QUOT / come-PST-PST-QUOT
      gu   saram'eigei   marhaissda.
      that   to.the.man   said

(K7) b.*na=num nai=ga   'ejedo   'yegi'ei **'o-ass-nun**   **ges-'ur** *gu*
      I=TOP   I=NOM   yesterday here   come-PST-ADN   FN-ACC   that
      saram'eigei   marhaissda. [PTCP]
      to.the.man   said

(K7) c. *na=num   nai=ga   'ejeido   'yegi'ei **'o-n**   **ges-'ur** *gu*
      I=TOP   I=NOM   yesterday here   come-ADN   FN-ACC   that
      saram'eigei   marhaissda. [PTCP]
      to.the.man   said

(K7) d. *na=num nai=ga 'ejeido   'yegi'ei **'o-ass-danun** **ges-'ur** *gu*
      I=TOP   I=NOM   yesterday here   come-PST-ADN   FN-ACC   that

saram'eigei   marhaissda. [PTCP]
to.the.man   said

According to the consultant, in (K7d) there is a compulsory nuance. In Korean there are some adnominal forms that have different aspectual features. Different forms create different nuances, but this does not seem to have any crucial relevance to this paper.

Among verbs of linguistic activity, *tutaeru* "tell" is more literary than *iu* "say." It may be because of this that the former seems to be more acceptable in Japanese as well. Or, it may be because a message, which is an object of utterance, sounds more concrete. The situation in other languages is quite similar to that of [6] "say."

(J8) *watasi=wa riNgo=ga (ano) sara=no ue=ni **aQta=no=o** tabeta.* [PTCP]
      'I ate the apple which was on (a/that) plate'
      ('I ate which the apple was on (a/that) plate')

(T8) a. **ben   elmanın   o   tabağın   üstünde   var   **ol-duğ-u-n-u***
      I   apple's   that   dish's   on   exist   become-PTCP-3-P-ACC
      yedim. [PTCP]
      I.ate

(T8) b. *ben   o   tabağın   üstünde-ki elmayı   yedim.*
      I   that   dish's   on-ADJLZ   apple   I.ate

In the case of this sentence in Turkish, the element *-ki* adjectivizes the local noun with the locative case. However, it should be noted that *-ki* functions with regard to the whole noun phrase [*o tabağın üstünde*].

(U8) a. *mæn   u   tæhsiniŋ   üstidæ   turʁan   almini   yedim.*
      I   that   dish's   on   stand-PTCP   apple   I.ate   [EX]

(U8) b. **mæn   alminiŋ   tæhsiniŋ   üstidæ   **tur-ʁin-i-n-i**   yedim.* [PTCP]
      I   apple's   dish's   on   stand-PTCP-3-P-ACC   I.ate

(U8) c. *mæn   tæhsiniŋ   üstidæ   tur-ʁin-i-n-i   yedim.*
      I   dish's   on   stand-PTCP-3-P-ACC   I.ate

In sentence (U8c), the genitive subject (*alminiŋ* "of the apple" in this case) is removed from the corresponding IHRC. According to the consultant, if the context is "they ate the one on the plate" (when an object of conversation, like an apple, is already known from the context of the discourse and it is known that there is another object of conversation in another place), sentence (U8c) can be used. The most natural expression, however, is the one with adjectivizer *-ki* as in (U8d) below:

(U8) d. *mæn   tæhsiniŋ   üstidi-ki-ni   yedim.*
        I   dish's   on-ADJLZ-ACC   I.ate

(M8) a. *bi   ter   tavgan   deer   baj-san   alim-yg   idsen.*
        I   that   dish   on   be-PTCP   apple-ACC ate   [EX]

(M8) b. *bi   alim   ter   tavgan   deer   **baj-sn-yg**   n'   idsen.* [PTCP]
        I   apple   that   dish   on   be-PTCP-ACC   3.POSS ate

(M8) c. *be   almyg   ter   tagvan   deer   baj-xaar   n'   idsen.*
        I   apple   that   dish   on   be-CVB   3.POSS ate

In sentence (M8c) is an expression with an adverbial clause, which in this case means "because it is on the table."

(N8) a. *mii   jabloko   təi   aliokaando   **bi-čim-bə-ni**   siaxambi.* [PTCP]
        I   apple   that   on.the.dish   be-PTCP-ACC-3SG   ate

(N8) b. *mii   təi   aliokaando   bi-čin   jablokowa   siaxambi.*
        I   that   on.the.dish   be-PTCP apple   ate   [EX]

(K8) a. *nanun   sagoa=ga   jebsi   'ui'ei   'iss-'ese,   gu   ges-'ur   meg'essda.*
        I   apple=NOM   dish   on   be-CVB   that thing-ACC ate

(K8) b. *na=nun   jebsi   'ui'ei   {'iss-nun / 'iss-den}   sagoa-rur   meg'essda.*
        I=TOP   dish   on   be-ADN   apple-ACC   ate   [EX]

(K8) c.*??na=nun   sagoa=ga   jebsi   'ui'ei   **{'iss-nun / 'iss-den} ges-'ur***
         I=TOP   apple=NOM   dish   on   be-ADN   FN-ACC

        meg'essda. [PTCP]
        ate

The most natural sentence, the first one that the consultant produced, is the one with a participial form like "there is an apple, and (I) ate it" as in (K8a). He judged the sentences with an IHRC, such as (K8c), saying, "I myself do not use it but some speakers may accept it."

(K8) d. *na   sagoa   jebsi   'ui'ei   **'iss-nun   ge**   meg'ess'e.* [PTCP]
        I   apple   dish   on   be-ADN   FN-ACC ate

He added, however, that it may be used in colloquial language if all particles—topic, nominative, and accusative—are removed. In addition, in such a case, "the apple" in (K8d) is interpreted as the object of the main clause.

(J9) *ano hito=ga ie=ni **kaeQta=no=o** moR itido turete kita.* [PTCP]

'I brought back that person who went home'

('I brought back which that person went home')

(T9) a.**onun   eve   **dön-düğ-ü-n-ü**   yeniden   getirdim.* [PTCP]

　　　 his   home   return-PTCP-3-P-ACC   again   I.took

(T9) b. *onu   eve   döndükten   sonra   yeniden   getirdim.*

　　　 his   home   return-PTCP-ABL   after   again   I.took

Sentence (T9b) is an expression with an adverbial clause, meaning "when I returned."

(U9) a. *u   adæm   öyigæ   qaytip   bol-ʁan-i-di,   yænæ   bir   qetim*

　　　 that   man   home   return-CVB   be-PTCP-3-LOC   more   one   time

　　　 bašlap   kældim.

　　　 leading   I.took

Sentence (U9a) is an expression with an adverbial clause, meaning "when I returned."

(U9) b.**u   adæmniŋ   öyigæ   **qayt-qin-i-n-i**   yænæ   bir   qetim   bašlap*

　　　 that   man's   home   return-PTCP-3-LOC   more   one   time   leading

　　　 kældim. [PTCP]

　　　 I.took

(U9) c. *öyigæ   qaytip   bolʁan   adæmni   yæn   bir   qetim   bašlap*

　　　 home   return-CVB   be-PTCP   man   more   one   time   leading

　　　 kældim.

　　　 I.took [EX]

(M9) a. *tüün-ijg   ger-t-ee   xar'čix-san   baj-x-a-d   n'   bucaa-ž*

　　　 he-ACC   home-DAT-REF   return-PTCP   be-PTCP-E-DAT   3.POSS   return-CVB

　　　 dag-uul-ž   irsen.

　　　 follow-CAUS-CVB   came

Sentence (M9a) is an expression with an adverbial clause, again meaning "when I returned."

(M9) b. *tüün-ijg   ger-t-ee   xar'čix-san   **baj-sn-yg**   n'   bucaa-ž*

　　　 he-ACC   home-DAT-REF   return-PTCP   be-PTCP-ACC   3.POSS   return-CVB

　　　 dag-uul-ž   irsen. [PTCP]

　　　 follow-CAUS-CVB   came

(N9) a. *təi nai ǰookčiji **ǰiǰu-xəm-bə-ni**   guči gaaǰo-xam-bi.* [PTCP]
      that man home   return-PTCP-ACC-3SG again take-PTCP-1SG

(N9) b. *təi ǰookčiji ǰiǰu-xən   nai-wa   guči gaaǰoxambi.*
      that home   return-PTCP man-ACC again I.took   [EX]

(K9) a. *je saram'i jib'ei dor'aga-nundei, dasi   deirigo 'oassda.*
      that man   home return-CVB   again taking   came

Sentence (K9a) is a concessive expression, which means "I returned, but ...."

(K9) b. *je   saram'i jib'ei **dor'aga-nun ges-'ur** dasi   deirigo*
      that man   home return-PTCP   FN-ACC again taking
      'oassda. [PTCP]
      came

This sentence has two meanings, and the noun phrase *je saram'i* may denote, "a person who brought (something)." The meaning may vary according to the pause or emphasis, but it is a possible utterance.

(J10) *watasi=wa neko=ga ie=ni haiQte **kita=no=o** tukamaeta.* [PTCP]
      'I caught the cat who entered the house'
      ('I caught which the cat entered the house')

(T10) a.**ben bir kedinin eve **gir-diğ-i-n-i**   yakaladım.* [PTCP]
      I   one cat   home enter-PTCP-3-P-ACC I.caught

(T10) b. *ben eve   giren kedi-yi yakaladım.*
      I   home enter cat-ACC I.caught [EX]

(T10) c. *ben eve   gir-diğ-i-n-i   yakaladım.*
      I   home enter-PTCP-3-P-ACC I.caught

Sentence (T10c) is one where the genitive subject in the clause (*bir dekinin* "a cat's" in this case) is removed from the corresponding IHRC. According to the consultant, when it is the answer to a question such as "which cat did you catch?" it can be used and means "I caught the one who entered."

(U10) a. *mæn öyg   ækiriwal-ʁan müšükni tutiwaldim.*
      I   home enter-PTCP   cat-ACC I.caught [EX]

(U10) b.**mæn müšükniŋ öygæ **kiriwal-ʁin-i-n-i**   tutiwaldim.* [PTCP]
      I   cat's   home enter-PTCP-PTCP-3-P-ACC I.caught

(U10) c. *mæn   öygæ   kiriwal-ʁin-i-n-i*   *tutiwaldim.*
        I   home   enter-PTCP-PTCP-3-P-ACC   I.caught

According to the consultant, (U10c) can be used when, as expected, the situation is known from the previous context, there is another cat who did not enter the house and the speaker caught the one (of the two) that entered the house.

(M10) a. *bi   muur-yg   gert   orž   ire-xeer   n'   bar'ž   avsan.*
        I   cat-ACC   home   enter come-CVB   3.POSS   catching   took

This (M10a) is an expression with a causal converb.

(M10) b. *bi   gert   orž   ir-sen   muuryg   bar'ž   avsan.*
        I   home   enter come-PTCP   cat-ACC   catching   took   [EX]
(M10) c. *bi   gert   orž   irsen   muuryg   n'   bar'ž   avsan.*
        I   home   enter come-PTCP   cat-ACC   3.POSS   catching   took

Contrasting with (M10b), according to the consultant, (M10c) with a third person affix has a meaning approximating "there are some cats and I caught the one that entered the house."

(M10) d. *bi   muur   gert   orž   **ire-sn-ijg**   (n')   bar'ž   avsan.* [PTCP]
        I   cat   home   enter come-PTCP-ACC   3.POSS   catching   took

According to the consultant, (M10d) with an IHRC does not sound normal but is possible. It seems to her that the cat was caught with some (a bit of) difficulty.

(N10) a. *mii   kəksə   ǰookči   **ii-xəm-bə-ni**   ǰapaxambi.* [PTCP]
        I   cat   home   enter-PTCP-ACC-3SG   I.caught
(N10) b. *mii   ǰoo   dooči   ii-xən   kəksəwə   ǰapaxambi.*
        I   house   into   enter-PTCP   cat   I.caught   [EX]
(K10) a. *na=nun   jib'ei   dure'o-n   goyang'i-rur   jab'assda.*
        I=TOP   home   enter-ADN   cat-ACC   caught   [EX]
(K10) b. *??na=nun   goyang'i=ga   jib'ei   **dure'o-n   ges-'ur**   jab'assda.* [PTCP]
        I=TOP   cat=NOM   home   enter-ADN   FN-ACC   caught

According to the consultant, this (K10b) with an IHRC is a little strange but it is possible.

(K10) c. *na goyang'i jib'ei **dure'o-n   ge**   jab'ass'e.* [PTCP]
         I   cat   home enter-ADN FN-ACC caught

As expected, the consultant said that (K10c) can be used colloquially without problem when all particles are omitted.

(J11) *ano hito=ga kutusita=**o nuQta=no=wa** tukue=no ue=ni aru.* [PTCP]
     'The socks which that person sewed/mended are on the desk'
     ('Which that person sewed/mended the socks are on the desk')

(T11) a.*onun çorab-ı   **dik-tiğ-i**   masanın üstünde var.* [PTCP]
         his   socks-ACC sew-PTCP-ACC table's   on   be

(T11) b. *onun diktiği   çorabı   masanın üstünde   var.*
          his   sew-PTCP-3   socks-3   table's   on   be [EX]

(T11) c. *onun dik-tiğ-i   masanın üstünde   var.*
          his   sew-PTCP-ACC table's   on   be

In (T11c), the noun phrase *çorab-ı* "socks (ACC)" is removed from the corresponding IHRC (T11a), but according to the consultant it is acceptable.

(U11) a. *u   adæm   tikip   bær-gæn paypaq üstælniŋ üstidæ.*
          that man   sew-CVB give-PTCP socks   table's   on [EX]

(U11) b.*u   adæmniŋ paypaqni tikip   **bær-gæn-i** üstælniŋ üstidæ.* [PTCP]
         that man   socks   sew-CVB give-PTCP-3 table's   on

(M11) a. *ter ojms-yg   min'   oj-ood   šireen deer tav'čix-san baj-gaa.*
          he   socks-ACC 1SG.POSS sew-CVB table on   put-PTCP   be-PTCP

(M11a) is an expression with a converb as an adverbial phrase.

(M11) b. *ternij ojoson   ojms šireen deer baj-gaa.*
          his   sew-PTCP socks table on   be-PTCP [EX]

(M11) c. *ternij ojms **ojo-son**   n'   šireen deer bajgaa.* [PTCP]
          he   socks sew-PTCP 3.POSS table on   be-PTCP

According to the consultant, (M11c) containing an IHRC can be used only rarely, for example, when the person concerned is very bad at sewing or cannot usually do it and they say "hey! *that* person sewed it!" in surprise. She also says that even if the noun phrase *ojms* "socks" takes the accusative (*ojms-yg*), it will sound awkward and be an unacceptable sentence.

(N11) a. *təi nai doktombasi* **ulpi-xən=tənii** *dərə ojaalani biini.* [PTCP]
　　　　 that man your.socks sew-PTCP=TOP table on 　　are

(N11) b. *təi nai ulpixəni doktonsi(=tənii) dərə ojaalani biini.*
　　　　 that man sew-PTCP your.socks=TOP table on 　　　are [EX]

(K11) a. *gu saram'i ggueimei-n 'yangmar'i caigsang 'ui'ei 'issda.*
　　　　 that man 　　sew-PTCP socks 　　　table 　　on 　are [EX]

(K11) b.**gu saram'i 'yangmar'ur* **ggueimei-n ges-'un** *caigsang 'ui'ei*
　　　　 that man 　socks 　　　　sew-PTCP FN-TOP 　table 　　on

　　　　 'issda. [PTCP]
　　　　 are

According to the consultant, (K11b) containing an IHRC is very strange but may be acceptable to some speakers.

(K11) c.*??gu saram 'yangmar* **ggueimei-n ge** *caigsang 'ui'ei 'iss'e.* [PTCP]
　　　　 that man 　socks 　　　sew-PTCP 　FN table 　　　on 　are

In addition, he says that even if all the particles were to be removed as is done colloquially, such as (K11c), "that person" is likely to be interpreted as the possessor of "the socks" and its acceptability is very low.

 (J12) *ano hito=ga zibuN=no hoN=o* **wasurete iQta=no=o** *mituketa.* [PTCP]
　　　　 'I found the book which that person left behind'
　　　　 ('I found which that person left behind his own book')

(T12) a.**onun kendinin kitabı* **bırak-tığ-ı-n-ı** 　　　*buldum.* [PTCP]
　　　　 his 　own 　　book leave-PTCP-3-P-ACC 　　I.found

(T12) b. *onun unuttuğu kitabı buldum.*
　　　　 his 　forgot 　book I.found [EX]

(T12) c. *onun kitabı utut-tuğ-u-n-u* 　　　*anladım.*
　　　　 his 　book forget-PTCP-3-P-ACC I.notice

According to the consultant, when the verb in (T12a) is replaced by *anla-* "notice," it becomes acceptable. In this case, however, the object will be "the fact that that person left the book," making it a sentence expressed by using complement clauses in SAE.

(U12) a. *mæn u adæmniŋ untup* 　　*qalʁan kitabini tepiwaldim.*
　　　　 I 　　that man's 　forget-CVB go-PTCP his.book I.found 　　[EX]

(U12) b. **mæn   u   adæmniŋ kitabini   untup   **qal-ʁin-i-n-i***
        I   that man's   his.book forget-CVB go-PTCP-3-P-ACC
        tepiwaldim. [PTCP]
        I.found

(U12) c. *mæn   u   adæmniŋ kitabini   untup   qal-ʁin-i-n-i   bayqidim.*
        I   that man's   his.book forget-CVB go-PTCP-3-P-ACC I.noticed

According to the consultant, (U12c) appears at first glance to be a sentence with an IHRC, but the verb is *bayqi-* "notice" and she judges the object to be "the fact that person left the book" and not "the book."

(M12) a. *bi   ter   xün   nomoo   martčix-san **baj-sn-yg**   n'   ol-son.* [PTCP]
         I   that man   own.book   forget-PTCP be-PTCP-ACC 3.POSS find-PTCP

(M12) b. *bi   ter   xün   nomoo   **martčix-sn-yg**   n'   ol-son.* [PTCP]
         I   that man   own.book   forget-PTCP-ACC   3.POSS find-PTCP

(M12) c. *bi   ter   xün   martčix-san nomyg   n'   ol-son.*
         I   that man   forget-PTCP book-ACC 3.POSS   find-PTCP [EX]

(N12) a. *mii   təi   nai   daŋsaji   **oŋbo-xam-ba-ni**   baaxambi.* [PTCP]
         I   that man   own.book forget-PTCP-ACC-3SG I.found

(N12) b. *mii   təi   nai   oŋboxani   daŋsawa   baaxambi.*
         I   that man   forget-PTCP-3SG book-ACC   I.found [EX]

(K12) a. *gu   saram='i   'irh'eber'in jagi caig'ur caj'assda.*
         that man=NOM   forgot   own book found   [EX]

(K12) b. *?gu   saram='i   jagi caig'ur **'irh-'e#ber'i-n**   ges-'ur**
         that man=NOM   own book   forget-CVB#throw-PTCP FN-ACC
         caj'assda. [PTCP]
         found

According to the consultant, (K12b), containing an IHRC sounds a little strange but may be acceptable to some speakers.

(K12) c. *gu   saram jagi caig   **'irh-'e#ber'i-n**   **ge** caj'ass'e.* [PTCP]
         that man   own book forget-CVB#throw-PTCP FN   found

He added, however, that when all particles are removed, it can be used colloquially without problem.

(J13) *watasi=wa zibuN=no kodomo=ga otoRto=o* **tataita=no=o** *sikaQta.* [PTCP]

    'I scolded my child who hit his brother'

    ('I scolded which my child hit his brother')

(T13) a.*ben çocuğumun kardeşi **vur-duğ-u-n-u**   azarladım.* [PTCP]

    I   my.child's   brother   hit-PTCP-3-P-ACC   I.scolded

(T13) b. *ben çocuğum   kardeşine   vur-ma-sı-n-ı   azarladım.*

    I   my.child's   to.his.brother   hit-NMLZ-3-P-ACC   I.scolded

    (T13b) is an expression with a verbal noun affix *-ma*.

(U13) a. *mæn balamni enisini   urʁanliqi üčün tænqidlidim.*

    I   my.child   his.brother   hitting   for   I.scolded

    (T13a) is an expression with an adverbial clause, which means "because he hits (someone), I scolded (him)."

(U13) b. *mæn balamniŋ   enisini   **ur-ʁan-i-n-i**   tænqidlidim.* [PTCP]

    I   my.child's   his.brother   hit-PTCP-3-P-ACC   I.scolded

On the other hand, according to the consultant, the sentence (U13b), which at first glance appears to have an IHRC, can be used. She judged it to be quite acceptable and, at least, different from those of examples [8] to [12] with IHRCs. In other words, some speakers might use such an expression. However, even if acceptable, it would mean that they scold "the fact that the child hits his brother," not "the child" himself.

(M13) a. *bi xüüxdee   düügee   zod-o-x-oor   n'   zagna-san.*

    I   own.child   own.brother   hit-E-PTCP-INS   3.POSS   scold-PTCP

    This is an expression with a causal converb.

(M13) b. *bi düügee   zod-son xüüxdee   zagna-san.*

    I   own.brother   hit-PTCP   own.child   scold-PTCP [EX]

(M13) c. *bi xüüxdee   düügee   zod-son-d   n'   zagna-san.*

    I   own.child   own.brother   hit-PTCP-DAT   3.POSS   scold-PTCP

In (M13c) the verb *zagna-* "scold" is analysed as taking a dative object (note that according to the consultant, in general, it takes an accusative object).

(M13) d. *bi   xüüxdee   düü-g-ee   **zod-sn-yg**   n'   zagnasan.* [PTCP]
         I   own.child   brother-E-REF   hit-PTCP-ACC   3.POSS   scold-PTCP

(N13) a. *mii   piktəji   nəuji   **paačila-xam-ba-ni**   soixambi.* [PTCP]
         I   own.child   own.brother   hit-PTCP   I.scolded

(N13) b. *mii   nəuji   paačilaxan   piktəji   soixambi.*
         I   own.brother   hit-PTCP-ACC-3SG   own.child   I.scolded [EX]

(K13) a. *na=nun dongsaing'ur ddairi-n nai 'airur ggujij'essda.*
         I=TOP   brother   hit-ADN   my   child   scolded   [EX]

(K13) b.*?na=nun   nai 'aiga   dongsaingur   **ddairi-n ges-'ur**   ggujij'essda.* [PTCP]
         I=TOP   my   child   brother   hit-ADN   FN-ACC   scolded

According to the consultant, (K13b) containing an IHRC seems to be acceptable. In (K13a), it strongly conveys a sense that the speaker is directly scolding his own child, while in (K13b) it seems to have a slightly different nuance in that he/she is scolding the action "the child's hitting his brother" itself.

(K13) c. *na   nai 'a'iga   dongsaing   **ddairi-n   ge**   ggujij'ess'e.* [PTCP]
         I   my   child   brother   hit-ADN   FN   scolded

According to the consultant, (K13c) would be a little unnatural, even colloquially with all the particles removed, but sounds natural with a noun in the nominative case.

3.2. Summary of the results

The summary of results is shown in Table 3 below. Regarding Mongolian and Korean, when a sentence that the consultant produced contains an IHRC (or similar construction) first, it is indicated by the symbol ☑. For detailed explanations of the other symbols, △ and *, see the example descriptions in §3.1 and §4.1.

Table 3   Acceptability of sentences with a participle and a case
(an adnominal form, a formal noun, and a case) (IHRCs in bold-face)

		TUR	UIG	MON	NAN	KOR	JPN
[1]	time	✔	☑	☑	✔	—	—
[2]	place	—	—	—	✔	—	—
[3]	*see*	✔	☑	☑	✔	☑	✔
[4]	*hear*	✔	☑	☑	✔	☑	✔
[5]	*know*	✔	☑	☑	✔	☑	✔
[6]	*say*	✔	—	✔	✔	✔	—
[7]	*tell*	✔	☑	☑	✔	✔	—
[8]	**INTR**-SUBJ / OBJ	—	—	✔	✔	△	✔
[9]	**INTR**-SUBJ / OBJ	—	—	✔	✔	✔	✔
[10]	**INTR**-SUBJ / OBJ	—	—	✔	✔	△	✔
[11]	**INTR**-OBJ / SUBJ	—	—	△	✔	—	✔
[12]	**INTR**-OBJ / OBJ	—	—*	☑	✔	△	✔
[13]	**INTR**-TR.SUBJ / OBJ	—*	—*	△	✔	✔*	✔

The following linguistic facts can be understood from this research:

a. In Altaic languages, temporal expressions are made with "a participle and a case," which is similar to Old Japanese where such expressions can be made with "an adnominal form and a case." In Korean and (Modern) Japanese, on the other hand, this is in principle impossible.

b. Concerning place, because it is understood as a temporal expression, it is impossible to make a local expression using "a participle and a case" in Turkish, Uighur, and Mongolian (it might be possible to establish such a construction if it is clear that local phrases are concerned with information that is implied in the context.). In Nanai, however, such a local expression is permissible. This might be because the case in these examples of "a participle and a case" is the directional case, which has an exclusive local meaning. In Japanese and in Korean, this is not permissible.

c. With verbs such as "see," "hear," and "know",[14] which take *koto* "an event" as their object, constructions with "[a participle / adnominal form and a formal noun] and a case" are the most stably established in all the languages.

d. Quotative clauses of verbs like "say" and "tell" are *koto* "an event," as expected. Such constructions are established only in Japanese. Additionally, in Japanese, the verb *tutaeru* "tell" can take a noun in the accusative case, but not a clause with formal noun *no*.

e. The situation in Turkish and in Uighur (both are Turkic languages) is similar to that in SAE. Constructions with "a participle and a case" can be used in complement clauses but never in so-called IHRCs. Here, they are expressed by the relative pronoun *ki* (in the case

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[14] Note that, in the case of *siru* 'know', if it is not known whether the proposition of a complement clause is true or false, it will be *watasi wa sono hito ga kinoR koko ni kita {*no o/ka} siranai* 'I do not know {*that/if} that person came here yesterday' and in this case a formal noun *no* cannot be used (according to Mr. Michinori Shimoji p.c.).

of Turkish), which is said to come from Persian, or by verbal nouns, external relative type clauses, the adjectivizing affix *-ki*, adverbial phrases, etc. The fact that these two languages are geographically far removed from each other and that neither allows IHRCs despite the different system of participles might suggest that IHRCs did not exist in Proto-Turkic.

f. Among IHRC type sentences, some constructions with a converb are observed, such as (M11a). This sentence is similar to *ano hito ga kutusita o nuQte, tukue no ue ni oite aru* "That person's sewing socks, (they) are on the desk." In Altaic-type languages, sentences with a converb may be the most natural ones. The Korean language consultant provided a similar comment with respect to this.

4. Discussion and conclusion

4.1. Continuity of complement and relative clauses

Here, I would like to consider why Altaic-type languages developed IHRCs.

First, the biggest reason could be that some constructions ([participial form + case] or adnominal form + formal noun + case], which will be called "argumentized form" below) can be used not only in constructions that form EHRCs but also in some sentences that are semantically expressed as complex sentences of complement clauses in SAE. Thus, it could primarily be because such argumentized forms have a larger function and can indicate *mono* "a (material) thing" or *koto* "an event" that the continuum covering complement clauses and IHRCs was established.[15]

Then, to further test this hypothesis, the relevant features of Quechua will be summarized (note that descriptions below on Quechua are primarily obtained from Ebina 2016). Nominalizer *-sqa* in Cusco Quechua has a concrete and lexical nominalizing function, as in (12). At the same time, it can form complex sentences that semantically correspond to complement clauses and those that semantically correspond to relative clauses, as in (13) and (14). According to Ebina (p.c.), however, even if a noun that is an argument in the main clause is added to relative-like subordinate clauses, it cannot form a so-called IHRCs such as in (15). Note that, in addition, the element *-sqa* is attached to final verbs in the main clause and can express the hearsay past.

(12)   *quiqa-sqa* 'which is written (= document), the situation where it is written'

(Ebina 2014)

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[15] If this hypothesis is correct, it is considered that, regarding subnominalizing particles used for argumentized forms, in languages where *mono* 'a (material) thing' and *koto* 'an event' are strictly distinguished, IHRCs are unlikely to exist. The Kumamoto dialect in southwest Japan, however, has this distinction, while it has IHRCs (cf. Sakai 2012). This point is to be further examined.

(13) *[Carlos-pa papa mikhu-sqa-ŋ-ta]*   *yacha-ni.*
        PSN-GEN   potato eat-REAL.NMLZ-3-ACC know-1
        'I know that Carlos ate potatos' (Ebina 2016)

(14) *[Carlos-pa ranti-sqa-ŋ-ta]*   *mikhu-ni.*
        PSN-GEN   buy-REAL.NMLZ-3-ACC   eat-1
        'I ate what Carlos bought' (Ebina p.c.)

(15) **[Carlos-pa papa ranti-sqa-ŋ-ta]*   *mikhu-ni.*
        PSN-GEN   potato buy-REAL.NMLZ-3-ACC   eat-1
        'I ate which Carlos bought potatoes' (Ebina p.c.)

It has been reported that some dialects of Quechua do allow IHRCs. The example below is Wanka Quechua from Ebina (2016) and was originally presented in Cerrón-Palomino (1976: 264) and is translated by the author. Note that Ebina (2016) indicates that *-kaq* seems to be a morpheme concerning relativization.

(16) *[tañi-p   trumpu tali-ku-sha-n-kaq]*   *tukillam   tushu-n.*
        PSN-GEN spinning find-REF-REAL.NMLZ-3-kaq beautifully dance-3
        'Which Daniel found the spinner turns beautifully'

I would like to consider the likelihood that such a situation is the product of a historical process. Through analogy with sentences such as (13), which have a meaning similar to complement clauses, a noun that is an argument in the main clause was added to sentences like (14) with a meaning similar to relative clauses. In some dialects, sentences with an IHRC such as (16) have become increasingly acceptable.

Also, in Turkish and Uighur, which do not allow IHRCs, sentences where a genitive subject is removed from an IHRC are accepted. In both languages, argumentized forms are used in sentences with a meaning similar to complement clauses in general. Consequently, verbs that take *koto* "an event" in the main clause (*see*, *hear*, *know*, etc.) are not problematic. However, in those that take *mono* "a (material) thing" in the main clause (*find*, *catch*, *exist*, etc.), IHRC constructions with an argumentized form cannot develop. When a genitive subject in the clause is removed, an expression with an argumentized form of a concrete *mono* such as "the one among the others does / is done" develops, however, only in a specific context. Note that, in this case, the existence of the person affix that composes an

argumentized form seems to function to indicate such a meaning. This type of construction can be considered quite similar to the IHRC.[16]

Concerning complement clause-like sentences and IHRC-like sentences, they not only share formal similarity (both are expressed with the same argumentized form), but also semantic continuity. As has been seen in (U13b), the verb meaning "scold" in Uighur can be interpreted as not only having been directed at a person, according to the consultant, but also toward the act of a person hitting someone. Note that "to scold" in (K13b) with a Korean IHRC is also interpreted as scolding the action of a person hitting someone. They take *koto* "an event" as an object so that they are complement clause-like sentences. Taking this point into consideration, it may not be the case that IHRCs are acceptable. To be precise, one problem remains unsolved: whether IHRCs indicate *mono* "a (material) thing" or *koto* "an event" or whether the head is a noun (N) or a complementizer (C). Concerning this problem, see §1.1. As already seen in (T12a) to (T12c) and in (U12b) and (U12c), sentences with an argumentized form cannot be formed with the verb *find*, but rather with the verb *notice*. In Turkish and Uighur, their acceptability depends on an argument: *koto* "an event" or *mono* "a (material) thing." These two are sometimes semantically close or semantically continuous. We hypothesize that this also functioned as a historical factor in the development of IHRCs.

4.2. Finitivization of participles

There are further differences between Turkish, in which IHRCs are unacceptable, Korean, in which they are unlikely to be acceptable, and Japanese, Mongolian, and Nanay, in which they are more likely to be acceptable. In other words, some participle affixes -(y)an/[2] and -dik/[4] / -tik/[4] in Turkish and some adnominal forms in Korean cannot be used as finite verbs at the ends of sentences. On the other hand, all the participial forms in Nanay can be used as finite verbs at the ends of sentences. The participial form -san/[4] in Mongolian, which appears in the examples in this paper, is used in sentence-final position but this is probably a relatively recent development[17].

In Turkish and Uighur, a subject in participial clauses must take the genitive case. This can also be understood to indicate a low degree of sentence-hood participial clauses in both languages. Remember that in the Cusco dialect of Quechua, genitive subjects are observed, but the element -*sqa*, which is an argumentized form, can also be used as a finite verb at

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[16] Sentences with EHRCs, like *watasi wa sara no ue ni aQta riNgo o tabeta* 'I ate the apple which was on the table', can be used as a response to a question like *dono riNgo o tabeta no?* 'Which apple did you eat?'. However those with IHRC like *watasi wa riNgo ga sara no ue ni aQta no o tabeta* 'I ate which the apple was on the table' cannot be used as a response to that question. When the subject is removed from IHRCs, however, like *sara no ue ni aQta no o tabeta* '(I) ate which (it) was on the table', it can be used as a response to that question. In other words, there is a difference in the information structure between this type of construction and IHRCs. Description above is obtained from Mr. Michinori Shimoji p.c..

[17] In the period of *Yuáncháo Mìshĭ* (the Secret History of the Mongols), their sentence final usages were not common. Even in the modern language, especially in southern dialects of Mongolian, they are limited (Yamakoshi 2017: 85).

the end of a sentence. This degree of participle finitivization should be understood as relating to the development of IHRCs. In participial clauses that strongly feature finite verbs, one can assume that nouns similar to those in normal sentences are likely to appear. Thus, one can predict that some nouns that will be arguments in the main clause are likely to be added even in relative-like sentences.

4.3. Process of adding a noun which is an argument of the main clause

Kazama (1994) dealt with a phenomenon that has been referred to as "agreement" in Tungusic languages, arguing that some processes could be explained as a separation (postposition) of modifying elements. Among such separation of modifying elements, separation of participial clauses can be also observed. The two Nanai examples below are found in folklore texts:

(17) *əm mərgən baljiraa, əm **giu-wə** muədu bui-kim-bə-ni   baaxani.*
     one hero   living   one deer-ACC in.water die-PTCP-ACC-3SG be.found
     'a hero lived, and he found a roe deer dead in the water'

(18) *çolçomiaka=tani **mərgəm-bə** niəgu-i-wə-ni   xamiajiaji juləsi   anii*
     nuthatch=TOP   hero-ACC   go.out-PTCP-ACC-3SG from.behind forward push
     'a nuthatch (bird) pushes a hero going from behind to forward'

Formally, these sentences are very similar to IHRCs. When these bold-face affixes in the accusative case are removed, they will coincide with IHRCs, at least on the surface. Note that non-appearance of the accusative case is not rare in this language; the term *non-appearance* is used here to avoid the term *dropping* or *omission*. Syntactically, however, it is not clear if the bold-faced words are inside the subordinate clause or outside, but in those with the accusative (17) and (18), it is definitely clear that they are outside the subordinate clause. At any rate, in Nanai, conformation of a structure's appearance to an IHRC, at least on the surface, can be easily established and supported by the existence of constructions where a modifying element is separated.

Korean IHRCs are problematic. According to the consultant's introspection, "it is not clear if the noun which is the argument in the main clause is inside of the clause or not ... it may be outside the clause." For example, in the following sentence, consider the noun *sagoa* "apple."

(K8) d. *na sagoa jebsi 'ui'ei **'iss-nun ge**   meg'ess'e.* [repeated]
      I apple dish on   be-ADN FN-ACC ate

It should be noted that when the topic, nominative, and accusative particles are removed, the acceptability of the sentence improves. In quantitative expressions in Modern Korean, as opposed to those in Japanese, constructions where a noun comes first are unmarked and are most frequent, e.g. *hagsaiŋ seimyeŋ* "three students (lit. student three-people)" ('I 'Ig-Seb, 'I Sang-'Eg and Cay 'Oan. 2004: 105–106). As a result, it is possible that the constructions above outwardly resembling IHRCs may have similar syntactic constructions. In this regard, further syntactical investigations are needed.

4.4. Are IHRCs adverbial?

As observed in (M8c), (K8a), (T9b), (U9a), (M9a), (K9a), (M10a), (M11a), (U13a), (M13a), and (M13c), many meanings that are expressed by IHRCs in Japanese are expressed by adverbial or temporal clauses when translated into natural sentences in the target language. This tendency is especially marked in Mongolian.

As a result, meanings of Japanese sentences using IHRCs can be considered similar to those expressed by adverbial clauses. As discussed in §1.1, some studies have analyzed IHRCs as adjuncts and not as arguments, using a generative grammar approach. This may have something to do with this adverbial feature exhibited by IHRCs.

The consultant's introspection on IHRCs in Mongolian was "it sounds as if they struggled to catch (the cat)" or "it sounds as if the speaker is surprised and says 'hey, he (= a person who is bad at sewing or cannot do it) sewed it!'" I understood this description as implying an on-the-spot feature of these expressions. As indicated by previous research on IHRCs in Japanese as described in §1.4.1, a temporal and local identification is needed for the establishment of IHRCs. In addition, concerning Old Japanese, some aspectual constraints are indicated. This is to be expected, because an object noun is not understood as a *mono* "a (material) thing," but the action is done toward *koto* "an event," such as "the cat entered the house."

4.5. IHRCs in single-branch languages

Kazama (2015a, 2015b, and 2016) indicated that Japanese has some features of implicit head-marking type languages. As a result, the verb, which is the head, is considered to mostly decide certain aspects, such as the direction of the action. Therefore, in many cases when a subject or object lacks a sentence, this structure is common and the meaning is understood. Some researchers, such as Mikami (1960), have claimed that Japanese "has no subject," and the power of subjects and objects in Japanese is as weak as that of any other arbitrary additional argument. With this in mind, I wonder if verbs take IHRCs as a kind of *circumstance*. In other words, verbs do not govern nominal arguments such as subjects or objects as necessary arguments. Kamei, Kono, and Chino (1996: 896) agree that this is a characteristic of single-branch languages. As has been seen in §1.2.1, this fact coincides

with the description of Kuroda (1999 [2005: 294, 296]), where IHRCs are a feature of pro-drop languages. In addition, regarding single-branch languages, Kamei, Kono, and Chino (1996: 896) write as follows:

> The nominative particle *ga* expresses a subject, but it does not express a subject as an indispensable element of the sentence, as in Indo-European languages; it expresses rather a complement indicating the subject. For now, Japanese can be referred to as a single-branch language. In this single-branch language, only predicates, the core of a sentence, are necessary elements. The difference between single-branch languages and double-branch languages is important when considering the syntactic principles of languages.

Taking another approach, the author could analyze Japanese as an implicit head-marking type language, but this overlaps with Japanese as a single-branch language. As a result, I would like to consider IHRCs taking the nominative and accusative not as necessary arguments, but rather as kinds of complements. This fact coincides well with the continuity between complement clauses and relative clauses, presented in §3.2.

Studies on this subject may have been problematic in very much relying on the framework of Western linguistics. Analysis could have been biased by the descriptive system of languages inherent to the framework, such as in SAE, to the extent that it has persistently considered IHRCs to be 'relative clauses' when in fact they are not.

What internal relationships account for the fact that the languages concerned have an SOV word order and that they are single-branch / implicit head-marking type languages? These questions are now under consideration and will be examined in another paper.

4.6. Limitations of this study and scope for future research

One methodological issue this investigation may suffer from is the use of a deductive approach. Concerning these sentences, although I tried to prepare a sufficient amount of data to analyze, it proved to be quite limited. Other points of view, such as an aspectual relationship between the main clause and the subordinate clause, cannot be examined with well controlled examples. In addition, I asked for only one consultant for each language. Their judgements may vary according to individual language uses. It is necessary to inductively collect and analyze more data from certain texts, including conversation. Regarding Japanese and Korean, several previous studies followed the approach of generative grammar. However, the authors of these studies were not very familiar with this theory, so these studies were not reflected well in this paper. The syntactical construction of the IHRC, especially that of Korean (cf. §4.3), and the relationship between SOV word

order and single-branch / implicit head-marking languages (cf. §4.5) must be examined further. This will feature in future tasks.

4.7. Summary of the discussion and conclusion

This paper has investigated and discussed, among other issues, such aspects of the IHRC as the range in which it occurs in certain languages with Altaic-type syntactic typology, its typological position, process of historical development, and other interrelated typological features. The findings of this study were as follows. First, complement clause-like sentences and IHRC-like sentences have formal and semantic similarity (cf. §4.1). Second, in participial clauses that have a strong feature of finite verbs, nouns similar to those in normal sentences are likely to appear. Thus, some nouns that will be arguments in the main clause are likely to be added even in relative-like sentences (cf. §4.2). Third, IHRCs can be easily established and supported by the existence of constructions where a modifying element is separated (cf. §4.3). Fourth, the meanings of sentences with IHRCs, especially in Japanese, are close to those expressed by adverbial clauses (cf. §4.4). Fifth, IHRCs with the nominative and accusative are not necessary arguments, but a kind of complement.

Abbreviations

-	affix boundary	CAUS	causative
=	clitic boundary	CUM	cumulative
#	compound boundary	CVB	converb
1	1st person (/ possessive)	DAT	dative
3	3rd person (/ possessive)	DES	designative (case)
ABL	ablative	DIR	directive
ACC	accusative	E	epenthetic vowel/consonant
ADJLZ	adjectivalizer	FN	formal noun
ADN	adnominal verb form	GEN	genitive

HONOR	honorific form		PERF	perfect
IND	indicative mood		PL	plural
INS	instrumental		POSS	possessive
LOC	locative		PSN	person name
NMLZ	nominalizer		PST	past
NOM	nominative		PTCP	participle
NONFUT	nonfuture		QUOT	quotational marker
NPST	non-past		REAL	realis
OB	oblique case marker		REF	reflexive possessive
P	pronominal *n*		SG	singular
PART	participle		TOP	topic marker

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