# Relative clause constructions in New Indo-Aryan languages: Hierarchies of macro roles

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ABSTRACT

Since the seminal work by Keenan & Comrie (1977), typological studies have shown that languages vary with respect to the range of arguments that can be relativized on. In this study, we systematically examine what can be relativized in five New Indo-Aryan (NIA) languages: Hindi-Urdu, Nepali, Early Nepali, Sinhala, and Bengali. Inspired by typological studies on relative clauses, we conducted our examination using a novel systematic methodology. First, we examined both headless and headed relative clauses. Second, we examined relativization on arguments for each of the macro roles S, A, P, T, and R. Lastly, we examined every participial strategy for relative clause constructions when a language had different participles for tense or aspect. Our investigation showed that there are both similarities and differences in the relativizability of NPs in relative clause constructions in the five NIA languages examined. On the one hand, in each language examined, arguments of the same range of macro roles can be relativized on in both headed and headless relative clauses. On the other hand, the five languages differ as to which macro roles can be relativized on. Based on this difference of the relativizability of NPs and our novel methodology, we propose hierarchies of relativizability for these NIA languages. The hierarchies are the onset-oriented hierarchy {S} > {A} > {P, T, R} for relative clause constructions by imperfective/nonpast participles and the termination-oriented hierarchy {S, P, T} > {A} > {R} for those by perfective/past participles. We explained these hierarchies in terms of viewpoint, localist metaphor, and a metonymy relationship.

## 1 Introduction

Relative clauses have been a major area of interest in linguistic typology, due in part to the fact that languages vary with respect to the range of arguments that can be relativized on. In the literature on the typology of relative clauses, Keenan & Comrie (1977) proposed the NP Accessibility Hierarchy to capture the universality and diversity of relative clauses in languages. They claim the following implicational hierarchy for the relativizability of NPs.

(1) The NP Accessibility Hierarchy (Keenan & Comrie 1977)
subject > direct object > indirect object > oblique > genitive > object of comparison

The hierarchy in (1) shows that the subject can always be relativized, and that if a strategy in a language is available for one grammatical relation, it is also available for grammatical relations higher up on the hierarchy.

Relative clauses in New Indo-Aryan (henceforth NIA) languages seemingly exhibit counterexamples to the NP Accessibility Hierarchy. It has been reported that some relative clauses in these languages do not follow the hierarchy in (1) (Subbārāo 2012). For example, in Bengali, NPs of direct object and oblique (e.g., locative) can be relativized, but indirect object cannot

(Faquire 2014; Subbārāo 2012: 331), as shown in (2).

(2) Bengali
a. [*amar* *dekʰ-a*] *lok=ʈi*
1SG.GEN see-PTCP person=CLF
'The person whom I saw' (Faquire 2014: 26)[1]
b. *[*amar* *tʃiʈʰi* *de-wa*] *lok=ʈi*
1SG.GEN letter give-PTCP person=CLF
'The person to whom I send a letter' (Faquire 2014: 26)
c. [*alta* *pɔʈ-a*] *pa*
alta wear-PTCP foot
'The foot on which alta dye is worn' (Subbārāo 2012: 332)

(2a) shows the relativization of the direct object *lok* 'person', and (2c) shows the relativization of the oblique *pa* 'foot'. As shown in (2b), the indirect object *lok* 'person' cannot be relativized. The examples in (2) deviate from the predicted pattern outlined in the NP Accessibility Hierarchy. Since indirect objects fall between direct objects and obliques in the hierarchy, if an oblique can be relativized in a language, it is predicted that an indirect object can also be relativized. The Bengali data in (2) do not follow this prediction.

Situations like the above that go against the predictions of the NP Accessibility Hierarchy in NIA languages are found only in participial strategies for relative clause constructions. Most NIA languages have two strategies for relative clauses: participial and relative-correlative strategies. Relative-correlative strategies have little restriction on relativizability (Subbārāo 2012: 271). In this paper, we focus on participial strategies for relative clause constructions.

This study aims to provide a systematic survey of participial strategies in five NIA languages. We investigated both headless and headed relative clauses created by participles for each of the macro roles S, A, P, T, and R in Hindi-Urdu, Nepali, Early Nepali, Sinhala, and Bengali.

This study is systematic in three respects. First, it examines relative clauses both with and without a head NP. A relative clause with a head NP is illustrated in (3).

(3) Nepali
[*pokʰʌra* *dza-ne*] *bʌs* *kʰʌɦã* *pa-i-ntʃʰa?*
Pokhara go-IMPF.PTCP bus where get-PASS-3SG
'Where can I get a bus going to Pokhara?' (Matthews 1998: 160)

In the example above, the relative clause *pokʰʌra dza-ne* 'going to Pokhara' modifies the head NP *bʌs* 'bus'. This type of relative clauses is called a headed relative clause. Some languages have relative clauses that do not modify nouns or pronouns (Dryer 2007: 197). For example, in Nepali, a participle can occur without modifying a head noun.

(4) Nepali
[*bʱʌn-eko* *nʌ-man-ne*]=*lai* *sʌllaɦ* *di-erʌ* *ke* *kam?*
say-PFV.PTCP NEG-listen-IPFV.PTCP=DAT advice give-CVB what work
'What's the use of giving advice to someone who does not listen to what you say?'
(Matthews 1998: 171)

[1]We altered the glossing of examples from other studies if necessary throughout this paper.

In (4), the relative clause formed by the participial phrase *bʰʌn-eko nʌ-man-ne* ‘one who does not listen to what you say’ functions as a noun phrase without modifying a noun. This type of relative clauses is called a headless relative clause, as opposed to a headed relative clause (Dryer 2007: 197). In recent typological studies, both headed and headless relative clauses have been considered equally important. Shibatani Masayoshi (Shibatani 2019 among others) argues that relative clauses should be reanalyzed as nominalizations, and that so-called headed and headless relative clauses are the two uses of nominalizations. Except for Nepali (Wallace 1985; Paudyal 2010), the relativizability of the gapped argument in a headless relative clause, or nominalization, has not often been described. In the literature, Nepali data seem to show that the relativizability of an NP can differ between headed and headless relative clauses. Wallace (1985) shows that only the subject can be relativized in headless relative clauses (‘nominalizations’ in his terminology), while Paudyal (2010) provides data for headed relative clauses whose head NP is something other than the subject. This study examines both headed and headless relative clauses when a language has both.

Second, this study is systematic because it examines relativization for each of the macro roles S, A, P, T, and R. Here we deviate from Keenan & Comrie (1977). Their discussion is based on grammatical relations like subject and object. Describing relative clauses based on macro roles enables us to accomplish more accurate generalizations, as some grammatical relations cover more than one macro role. For example, subject is the syntactic generalization over S and A, and direct object is the syntactic generalization over P and T. However, the macro roles covered by a grammatical relation do not necessarily behave similarly especially in a language with ergativity. For example, in the ergative language Central Alaskan Yup’ik, S and P can be relativized, while A cannot (Shibatani 2021). In such a situation, we cannot syntactically generalize S and A as subjects in relativization because they behave differently syntactically. Similarly, a number of NIA languages, including Hindi-Urdu and Nepali, show ergativity to varying degrees (Verbeke 2013). In describing these languages, it is especially necessary to focus on macro roles rather than on grammatical relations like subject and direct object. In previous studies on relative clauses in NIA languages, however, the difference in relativizability based on macro roles has not often been described. More focus has been put on grammatical relations like subject and object. For example, it is repeatedly mentioned that the Hindi-Urdu imperfective participial strategy is available for subjects (see, for example, Kachru (2006)), but it is not clearly shown whether this strategy is available for both S and A. In order to describe relativizability in NIA languages, macro roles must be investigated separately.

Third, this study systematically examines every participial strategy for relative clause constructions when a language has different participles depending on tense or aspect. Among the five languages investigated, Hindi-Urdu, Nepali, Early Nepali, and Sinhala have two participles: perfective or past participle and imperfective or nonpast participle. A large number of NIA languages show split ergativity in their marking of argument or agreement depending on tense and aspect (Abbi 2001: 29). For example, in Nepali, the A argument is marked by the ergative marker *=le* in the simple past tense (Matthews 1998: 94). Relativizability can also be different depending on tense or aspect. Thus, we investigate both forms of participles when a language has two participial strategies.

Through the systematic investigation described in this study, we are able to offer generalizations about relative clause constructions in the NIA languages examined. Our investigation shows that there are both similarities and differences between these languages. On

the one hand, none of the five languages examined shows any difference of relativizability between headed and headless relative clauses. On the other hand, the five languages differ as to which macro roles can be relativized. We propose hierarchies of relativizability for NIA languages based on our results, namely the onset-oriented and termination-oriented hierarchies. We then present an explanation for these hierarchies in terms of viewpoint, localist metaphor, and a metonymy relationship.

This paper is organized as follows. In Section 2, we introduce the languages examined and the methodology we used for testing grammaticality. In Section 3, we discuss the geological locations of the languages and summarize what is known about these languages from previous studies. In Section 4, we provide the results of our investigation. In Section 5, we discuss the similarities and differences between the four NIA languages and propose hierarchies of relativizability and an explanation for these hierarchies. In Section 6, we conclude the paper.

## 2 Methodology

To investigate the behavior of the participle strategies of relative clause constructions in NIA languages, we selected five NIA languages: Hindi-Urdu, Nepali, Early Nepali, Sinhala, and Bengali. By Early Nepali, we mean Nepali of the 18$^{th}$ to 19$^{th}$ centuries. The data pertaining to Early Nepali was sourced from Wallace (1985). As for the remaining four languages, we utilized the data from the literature and from the stories, and we also collected data through direct elicitation from our informants. To elicit data, we conducted grammatical judgment tests with a single informant for each language. Table 1 shows the basic information on our informants.

| | Gender | Year of birth | Origin | The first language | Other languages | Elicitation methods |
|---|---|---|---|---|---|---|
| Hindi-Urdu | Male | 1972 | Karachi, Pakistan | Urdu | Punjabi, English | virtual meeting, checking written examples |
| Nepali | Male | 1989 | Jhapa, Nepal | Nepali | English, Japanese | in-person session, virtual meeting |
| Sinhala | Female | 1998 | Colombo, Sri Lanka | Sinhala | English | telephone |
| Bengali | Male | 1975 | Kolkata, India | Bengali | English, Hindi | in-person sessions |

Table 1. The informants for the present study

The Hindi-Urdu informant is a male individual born in the year 1972. He hails from Karachi, Pakistan. Urdu is his first language, and he is also proficient in Punjabi and English. We elicited data from him through both virtual meetings and the checking of written examples. The Nepali informant is a male born in the year 1989. He originates from Jhapa, Nepal. Nepali is his first language, and he also speaks English and Japanese. We elicited data from him through both virtual meetings and in-person sessions. The Sinhala informant is a female born in the year 1998. She is from Colombo, Sri Lanka. Sinhala is her first language, and she also speaks English. We elicited data from her via telephone conversations. The Bengali informant is a male born in the year 1975. He hails from Kolkata, India. Bengali is his first language, and he also speaks English and Hindi.

we elicited data from him through face-to-face sessions.

In this study we focus on three elements to carry out a systematic study of the relative clause constructions in NIA languages: (i) headed and headless relative clauses, (ii) macro roles, and (iii) participial strategies based on tense or aspect.

During our elicitation sessions, we presented informants with headed and headless relative clause constructions contrastively with information on the context. See the English example below.

(5) You should marry a man [whom you love] and you should not marry [whom you do not love].

The first half of the example in (5) contains a headed relative clause construction, and the second half contains a headless relative clause construction. The contrastive illustration of headed and headless relative clause constructions enables an informant to interpret a headless relative clause easily. This is due to the fact that the interpretation of headless relative clauses relies on the context in many cases since a head noun phrase is absent in a headless relative clause construction.

As mentioned earlier, previous studies have focused more on the grammatical relation of an extracted argument in relativization. However, we investigated relative clause constructions with a focus on the macro roles of an extracted argument, that is S, A, P, T, and R. Each macro role corresponds to the single argument of an intransitive construction, the agent of transitive construction, the patient of transitive construction, the theme of a ditransitive construction, and the recipient of a ditransitive construction, respectively. English examples of each macro role are given in (6).

(6) Macro roles
   a. S macro role: **A train** is coming from Delhi.
   b. A macro role: **A boy** is reading a book.
   c. P macro role: A boy is reading **a book**.
   d. T macro role: I will give **a gift** to my friend.
   e. R macro role: I will give a gift **to my friend**.

Finally, in our study, we focused on the participial strategies of relative clause constructions. Many NIA languages have multiple participial strategies for relative clause constructions based on aspect or tense. For example, Hindi-Urdu has two distinct participial strategies based on aspect: imperfective and perfective participles. See the examples below.

(7) The imperfective participle strategy in Hindi
   [*ro-t-a* *ɦʊ-a*] *bəttʃa* *mã=ko* *dekʰ-kər*
   cry-IPFV.PTCP-M.SG be-PFV.PTCP child.M.SG mother=DAT see-CP
   *tʃʊp* *ɦo* *gə-ja*
   quiet be go-PFV.PTCP.M.SG
   'The child who was crying became quiet when he saw his mother.' (Kachru 2006: 137)

(8) The perfective participle strategy in Hindi
   [*kʰət* *=pər* *bɛʈʰ-a* *ɦʊ-a*] *admi:*
   cot=on sit-PFV.PTCP.M.SG be-PFV.PTCP man
   *koi:* *upənjas* *pəɾʰ* *rəɦ-a* *tʰ-a*

some novel read PROG-M.SG be.PST-M.SG
'The man sitting on the cot was reading some novel.' (Kachru 2006: 137)

In the example in (7), the imperfective participle of the verb *ro* 'cry' is used for relativization. It corresponds to the progressive event of crying. In the example in (8), the perfective participle of the verb *bɛʈʰ* 'sit' is used for relativization. It corresponds to the stative interpretation of the event of sitting.

When a language has two participial strategies based on the differences of aspect or tense, we included both strategies in our study. The imperfective or nonpast participle strategies and the perfective or past participle strategies can be observed in Hindi-Urdu, Nepali, Early Nepali, and Sinhala. On the other hand, Bengali has a sole participial strategy for the relative clause construction, which can be used in both perfective and imperfective aspects depending on the context.

In Hindi-Urdu, another strategy, namely *vala* construction or "agentive participle" is included in the participial strategies of relative clauses in some studies (Kachru 1980; Kachru 2006; Hook 1979). This construction is composed of "inflected infinitive form of the verb followed by the item *vala*" (Kachru 2006: 136). This *vala* construction is not included in our study, as it does not code a specific tense or aspect and behaves differently from other participles (e.g., it can also follow elements other than verbs).

We focused on these three elements mentioned at the beginning of this section in our investigation: (i) headed and headless relative clauses, (ii) macro roles, and (iii) participial strategies based on tense or aspect. The elements we focused on in this study are summarized in Table 2 below. When a language has two participial strategies based on tense or aspect, it is necessary to investigate the possibility of relative clause formation in 20 patterns.

| Strategy | Head | Macro roles | | | | |
|---|---|---|---|---|---|---|
| | | S | A | P | T | R |
| Imperfective/nonpast participle strategy | headed | ✓ | ✓ | ✓ | ✓ | ✓ |
| | headless | ✓ | ✓ | ✓ | ✓ | ✓ |
| Perfective/past participle strategy | headed | ✓ | ✓ | ✓ | ✓ | ✓ |
| | headless | ✓ | ✓ | ✓ | ✓ | ✓ |

Table 2. The summary of the parameters for the survey

## 3 The investigated languages

We investigated five NIA languages, Hindi-Urdu, Nepali, Early Nepali, Sinhala, and Bengali in the present study. The four currently-spoken languages are distributed across South Asia, as shown in the map in Figure 1.

Figure 1. The geographical location of the languages under examination

As noted earlier, among the five languages investigated, Hindi-Urdu, Nepali, Early Nepali, and Sinhala have two participial strategies for relative clause constructions based on aspect or tense. On the other hand, Bengali has a sole participial strategy for the relative clause construction, which can be used in both perfective and imperfective aspects depending on the context.

We decided to investigate the five languages listed above for two reasons. First, we wanted to investigate both ergative languages like Hindi-Urdu and Nepali and accusative languages like Sinhala and Bengali. We included both Early Nepali and Modern Nepali in the present study because Wallace (1985) notes that a change is observed between the two stages of Nepali regarding ergativity in the headless relative clauses with perfective participle strategy (it is called *-eko* nominalization by Wallace). Thus, it is worth investigating Early Nepali and Modern Nepali to observe the development of relative clause constructions. Second, each language genetically belongs to a distinct subgroup of the NIA linguistic group. As per the subcategorization of NIA languages by Chatterji (1923), Hindi-Urdu belongs to the Midland group, Nepali belongs to the North group, Sinhala belongs to the Southwest group, and Bengali belongs to the Eastern group of NIA languages, respectively. Investigating these languages enabled us to observe possible variations within the NIA languages.

Several researchers have investigated the behavior of participial strategies of relative clause constructions in these languages (see Hook & Koul 2014; Kachru 1980; Subbārāo 2012; Nishioka & Kumar 2021; Ahmed 2010 for Hindi-Urdu, Wallace 1985; Paudyal 2010 for Nepali, Subbārāo 2012; Chandralal 2010 for Sinhala, Dasgupta 1980; Faquire 2014; Subbārāo 2012 for Bengali). Among them, the study by Subbārāo (2012) is noteworthy because it focuses on macro roles to investigate relative clause constructions in South Asian languages including NIA languages. However, previous studies have not conducted a systematic investigation focusing on the three elements altogether, namely (i) headed and headless relative clauses, (ii) macro roles, and (iii) participial strategies based on tense or aspect. Thus, previous descriptions are incomplete since they do not fully address the patterns and characteristics of participial strategies employed in relative clause constructions across these languages.

## 4 Data

In this section, we present the data from our study. The results are summarized in Tables 3 and 4. Both tables represent the results of the respective participial strategies, namely imperfective/nonpast and perfective/past participle strategies. When "OK" appears in a cell, it indicates that a specific macro role was observed to be relativized in a certain type of event. It does not necessarily mean that macro roles in all types of events can be relativized when "OK" is shown.

| Language | S | A | P | T | R |
|---|---|---|---|---|---|
| Hindi-Urdu | OK | NO | NO | NO | NO |
| Early Nepali | OK | OK | NO | NO | NO |
| Modern Nepali | OK | OK | OK | OK | OK |
| Sinhala | OK | OK | OK | OK | OK |
| Bengali | OK | OK | OK | OK | OK |

Table 3. The summary of the results: imperfective/nonpast participle strategy

| Language | P | T | S | A | R |
|---|---|---|---|---|---|
| Early Nepali | OK | OK | OK | NO | NO |
| Hindi-Urdu | OK | OK | OK | OK | NO |
| Modern Nepali | OK | OK | OK | OK | OK |
| Sinhala | OK | OK | OK | OK | OK |
| Bengali | OK | OK | OK | OK | OK |

Table 4. The summary of the results: perfective/past participle strategy

We discuss the results presented in Tables 3 and 4 for each language in the following section.

### 4.1 Hindi-Urdu

Hindi-Urdu has two participial strategies, namely imperfective and perfective participle strategy. We demonstrate the data related to the imperfective participle strategy and the perfective participle strategy in Sections 4.1.1 and 4.1.2, respectively.

#### 4.1.1 Imperfective participle strategy

In Hindi-Urdu, only S is relativized with the imperfective participle strategy. Both headed and headless relative clauses are accepted. Other macro roles are not relativized with this strategy.

(9) S relativization
[*tʃəl-t-iː* (*ɦʊ-iː*)] *gaɽiː=se* *kʰuːd* *pəɽ-na* *bevəquːfiː* *ɦɛ*
move-IPFV.PTCP-F (be-PFV.PTCP.F) train=from jump fall-INF foolish be.3.PRS
'To jump from a moving train is stupidity.' (McGregor 1986: 156)

(10) S relativization
[*mər-t-a*] *kja* *nə* *kər-t-a?*
die-IPFV.PTCP-M.SG what NEG do-PTCP-M.SG

‘What wouldn’t a dying man do?’ (McGregor 1986: 158)

(11) A relativization

*[*kɪtab* *pəɽʰ-t-a* *ɦʊ-a*] *ləɽka*
book read-IPFV.PTCP-M.SG be-PFV.PTCP.M.SG boy
*mera* *tʃʰoʈa* *bʰaiː* *ɦɛ*
1.GEN.M.SG small.M.SG brother be.PRS.3SG
*ɔːr* [*əkʰbar* *pəɽʰ-t-iː* *ɦʊ-iː*] *meriː* *baɽiː* *bəɦən* *ɦɛ*
and newspaper read-IPFV.PTCP-F be-PFV.PTCP-F 1.GEN.F big.F sister be.PRS.3SG
‘The boy who is reading a book is my younger brother and the one who is reading the newspaper is my elder sister.’

(12) P relativization

*[*mere* *bʰaiː=kiː* *pəɽʰ-t-iː* *ɦʊ-iː*] *kɪtab*
1.SG.GEN.OBL brother=GEN.F read-IPFV.PTCP-F be-PFV.PTCP.F book.F
*mɛ̃* *bʰiː* *bətʃpən=mɛ̃* *pəɽʰ-t-iː* *tʰ-iː*
1.SG.NOM also childhood=in read-IPFV.PTCP-F be.PAST-F.SG
*ɔːr* [*meriː* *bəɦən=ka* *pəɽʰ-t-a* *ɦʊ-a*]
and 1.SG.GEN.F sister=GEN.M.SG read-IPFV.PTCP-M.SG be-PFV.PTCP.M.SG
*mɛ̃* *bʰiː* *roz* *pəɽʰ-t-iː* *ɦũ*
1.SG.NOM also everyday read-IPFV.PTCP-F be.PRS.1SG
‘I used to read the book which my brother is reading, and I also read the one which my sister is reading every day.’

(13) T relativization

*[*mera* *apne* *dost=ko* *de-t-a*] *tofa* *ɪs*
1.SG.GEN.M.SG self.M.OBL friend=DAT give-IPFV.PTCP-M.SG gift this.OBL
*kəmre=mẽ* *ɦɛ* *ɔːr* [*tumɦara* *apniː* *dost=ko* *de-t-a*]
room=in be.PRS.3SG and 2.SG.GEN.M.SG self.SG.F friend=DAT give-IMPF.PTCP-M.SG
*ʊs* *kəmre=mẽ* *ɦɛ*
that.OBL room.OBL=in be.PRS.3SG
‘The gift which I will be giving to my friend is in this room and the one which you will be giving to your friend is in that room.’

(14) R relativization

*[*mera* *adʒ* *tofa* *de-t-a*] *admiː*
1.SG.GEN.M.SG today gift give-IPFV.PTCP-M.SG man
*mera* *dost* *ɦɛ* *ɔːr* [*meriː* *biːviː=kiː* *tofa* *de-t-iː*]
1.SG.GEN.M.SG friend be.PRS.3.SG and 1.SG.GEN.F wife=GEN.F gift give-IPFV.PTCP-F
*ʊs=kiː* *səɦeliː* *ɦɛ*
that=GEN.F female.friend be.PRS.3.SG
‘The person to whom I will be giving a gift today is my friend, and the one to whom my wife will be giving a gift is her friend.’

To summarize, in Hindi-Urdu, only S is relativized with the imperfective participle strategy in headed and headless relative clause constructions. The literature mentions that the subject as a grammatical relation can be relativized by the imperfective participle strategy in Hindi-Urdu (Kachru 1980: 35). However, our data demonstrated that only S is possible.

### 4.1.1 Perfective participle strategy

Hindi-Urdu allows P, T, S, and A macro roles to be relativized with the perfective participle strategy. Both headed and headless relative clauses are accepted for these macro roles.

(15) P relativization
[*səlma=kiː pɪtʃʰle sal lɪkʰ-iː ɦʊ-iː*] *kɪtab*
Salma=GEN.F last.M.OBL year write-PTCP.F be-PFV.PTCP.F book
*əttʃʰiː tʰ-iː ɔr* [*səlma=kiː ɪs sal*
good.F be.PST-F.SG and Salma=GEN.F this.OBL year
*lɪkʰ-iː ɦʊ-iː*] *bʰiː thiːk th-iː*
write-PFV.PTCP.F be-PFV.PTCP.F also fine be.PST-F.SG
'The book which Salma wrote last year was good, and the one which Salma wrote this year was also fine.'

(16) T relativization
*gʰər=mẽ* [*iːʃwər=ka dɪ-ja ɦʊ-a*]
house=in god=GEN.M.SG give-PFV.PTCP.M.SG be-PFV.PTCP.M.SG
*səb kʊtʃʰ ɦɛ*
all anything be.PRS.3SG
'Everything that God/the god gave us is in the house.' (Premchand, *Nirmala*)

(17) T relativization
[*ʊn=ka dɪ-ja ɦʊ-a*] *ɦəm kəbʰiː*
3PL.OBL-GEN.M.SG give-PFV.PTCP.M.SG be-PFV.PTCP.M.SG 1PL.NOM never
*nəɦĩ tʃʊka sək-t-e*
NEG complete be.able-IPFV.PTCP-M.PL
'You can never repay what they gave.' (Nishioka & Kumar 2021: 91)

(18) S relativization
*am=ke bag=mẽ gaõ=ke ləɽke ləɽkiyã*
mango=GEN.M.OBL garden=in village=GEN.M.PL boy.PL girl.PL
[*ɦəwa=se gɪr-e ɦʊ-e*] *am*
wind.F=from fall-PFV.PTCP.M.PL be-PFV.PTCP.M.PL mango
*tʃʊn rəɦ-e tʰ-e*
select PROG-M.PL be.PST-M.PL
'The boys and girls from the village were picking up mangos which fell through the air into the mango garden.' (Premchand, *Algyojha*)

(19) S relativization
[*gɪr-õ*]*=ko ʊʈʰa-o*
fall-PFV.PTCP.M.PL.OBL=DAT raise-IMP
'Raise up the fallen.' (McGregor 1986: 158)

(20) A relativization
[*pɪ-ja ɦʊ-a*] *admiː tʃəl rəɦ-a ɦɛ ɔr*
drink-PFV.PTCP.M.SG be-PFV.PTCP.M.SG man move PROG-M.SG be.PRS.3.SG and
*õdʰər* [*pɪ-ja ɦʊ-a*] *natʃ rəɦ-a ɦɛ*
there drink-PFV.PTCP.M.SG be-PFV.PTCP.M.SG dance PROG-M.SG be.PRS.3.SG
'The drunken man is walking and another drunken man is dancing over there.'

(21) R relativization
*[*ɔːrət=ka kʰilɔna dɪ-ja ɦʊ-a*] *bəttʃa dərəsəl*
lady=GEN.M.SG toy give-PFV.PTCP.M.SG be-PFV.PTCP.M.SG child actually

*mera* *bʰai:* *ɦɛ* *pər* [*ɔ:rət=ke* *mɪʈʰai:* *dɪ-e*
1SG.GEN.M.SG brother COP.PRS.3SG but lady=GEN.M.OBL sweet give-PFV.PTCP.M.OBL
*ɦʊ-e*]=*ko* *mɛ̃* *nəɦĩ:* *dʒan-t-a*
be-PFV.PTCP.M.SG.OBL=DAT 1SG.NOM NEG know-IPFV.PTCP-M.SG
'The child to whom the lady gave a toy is actually my brother, but I do not know the one to whom she gave a sweet.'

In summary, Hindi-Urdu allows P, T, S, and A macro roles to be relativized with the perfective participle strategy. Headed and headless relative clauses show the same behavior with respect to the macro roles to be relativized on.

## 4.2 Early Nepali

Early Nepali has two participial strategies, namely imperfective and perfective participle strategies, which we demonstrate in Sections 4.2.1 and 4.2.2, respectively.

### 4.2.1 Imperfective participle strategy

According to Wallace (1985), in Early Nepali, S and A are relativized with the imperfective participle strategy.

(22) S relativization
*gʱa* *vʌ-nja* *dekʰi* [*kirat=baʈʌ* *bʰagi-dza-nja*]=*kana* *pʌkʌr-erʌ*
union make-IPFV.PTCP after Kirat=from flee-go-IPFV.PTCP=ACC capture-CVBS
*hami=lai* *saũpi* *di-nja* *tʃʰʌ*
1PL=DAT ally give-IPFV.PTCP COP.PRS.3
'After the alliance is made, our ally will give us those who fled from Kirat whom he captured.' (Wallace 1985: 108)

(23) A relativization
[*tʃita-jako* *kamʌna* *purjau-nja*] *adzʌ* *dʌibʌ* *tʃʰʌ* *ʌrko* *tʃʰʌinʌ*
think-PFV.PTCP desire fulfill-IPFV.PTCP today fate COP.PRS other COP.NEG
'That which fulfills our desires is fate and nothing else.' (Wallace 1985: 108)

### 4.2.2 Perfective participle strategy

According to Wallace (1985), in Early Nepali, P, T, and S are relativized with the perfective participle strategy.

(24) P relativization (18th century)
[*bʰʌn-jako*] *sunjʌũ*
say-PFV.PTCP hear.PST.1PL
'We heard what was said.' (Wallace 1985: 109)

(25) T relativization (19th century)
*tʌsʌrtʰʌ* *taha* [*mʌ=kʌne* *prʌkaʃʌ* *gʌr-jako*]
therefore then 1SG=DAT clear do-PFV.PTCP
*timi=le* *nʌ-dzan-jako* *ɦo*
2SG=ERG NEG-know-PFV.PTCP be.PRS.3SG

‘Therefore, you do not understand that which has been made clear to me.’
(Wallace 1985: 109)

(26) S relativization (19th century)
[*bãtʃ-jak-i*] *mer-i* *huntʃʰʌ*
survive-PFV.PTCP-F 1SG.GEN-F be.PRS.3SG
‘The one who survived is my wife.’ (Wallace 1985: 109)

### 4.3 Nepali

Nepali (Modern Nepali) has two participial strategies, namely imperfective and perfective participle strategies, which we demonstrate in sections 4.3.1 and 4.3.2, respectively.

#### 4.3.1 Imperfective participle strategy

In Nepali, the relativization of all macro roles with the imperfective participle strategy was accepted by our informant. Also, both headed and headless relative clauses are accepted in each macro role.

(27) S relativization
[*biratɳnʌgar=baʈʌ* *au-ne*] *bʌs* *ʌhile=sʌmmʌ* *pug-eko* *tʃʰʌinʌ*
Biratnagar=from come-IPFV.PTCP bus now=till arrive-PFV.PTCP COP.NEG
*tʌrʌ* [*kaʈʰmãɖʌũ=baʈʌ* *au-ne*] *ek* *gʱʌnʈa* *ʌgaɖi* *nʌi*
but Kathmandu=from come-IPFV.PTCP one hour before EMPH
*pug-i* *sʌk-j-o*
arrive-CP finish-PST-3
‘The bus which comes from Biratnagar has not arrived yet, but the one which comes from Kathmandu arrived one hour ago.’

(28) A relativization
[*fuʈbol* *dʱerʌi* *dzit-ne*] *deʃ* *brazil* *ɦo*
football much win-IPFV.PTCP country Brazil be.PRS.3
*ʌni* [*kriketʈ* *dzit-ne*] *ʌsʈrelija* *ɦo*
and cricket win-IPFV.PTCP Australia be.PRS.3
‘The national team which wins soccer games is Brazil, but the one which wins cricket games is Australia.’

(29) P relativization
[*brʌzil=le* *dʱerʌi* *dzit-ne*] *kʰel* *fuʈbol* *ɦo*
Brazil=ERG much win-IPFV.PTCP game football be.PRS.3
*tʌrʌ* [*ʌsʈrelija=le* *dzit-ne*] *kriketʈ* *ɦo*
but Australia=ERG win-IPFV.PTCP cricket be.PRS.3
‘The game which Brazil wins is football, but the one which Australia wins is cricket.’

(30) T relativization
[*mʌi=le* *us=lai* *di-ne*] *kura=ɦʌru* *tjo* *koʈʰa=ma* *tʰie*
1SG=ERG 3SG.OBL=DAT give-IPFV.PTCP thing=PL that room=in be.PST.3
*rʌ* [*mʌi=le* *tʌpaĩ=lai* *di-ne*]*=ɦʌru* *jo* *koʈʰa=ma* *tʰie*
and 1SG=ERG 2SG=DAT give-IPFV.PTCP=PL this room=in be.PST.3
‘The things which I gave to him/her were in that room, and the ones which I gave to you were in this room.’

(31) R relativization

[*mʌi=le adzʌ gift di-ne*] *mantʃʰe mero satʰi ɦo*
1SG=ERG today gift give-IPFV.PTCP person 1SG.GEN.M friend be.PRS.3
*ʌni* [*meri srimʌti=le gift di-ne*] *unki satʰi ɦun*
and 1SG.GEN.F wife=ERG gift give-IPFV.PTCP 3SG.HON.GEN.F friend be.PRS.3.HON
'The person to whom I will give a gift today is my friend, and the one to whom my wife will give a gift is her friend.'

In summary, S, A, P, T, and R are relativized with the imperfective participle strategy in headed and headless relative clauses in Modern Nepali.

### 4.3.2 Perfective participle strategy

In Nepali, the relativizations of all macro roles, namely P, T, S, A, and R with the perfective participle strategy were accepted by our informant. Also, both headed and headless relative clauses are accepted in each macro role.

(32) P relativization
[*brʌzil=le olimpik=ma dzit-eko*] *sporʈ fuʈbol tʰijo*
Brazil=ERG Olympic=in win-PFV.PTCP sport football be.PST.3
*ʌni* [*ʌsʈrelija=le dzit-eko*] *ɦʌkki tʰijo*
and Australia=ERG win-PFV.PTCP hockey be.PST.3
'The sport which Brazil won in the Olympics was football, and the one which Australia won was hockey.'

(33) T relativization
[*mʌi=le us=lai di-eko*] *kura=ɦʌru tjo koʈʰa=ma tʰie*
1SG=ERG 3SG=DAT give-PFV.PTCP thing=PL that room=in be.PST.3
*rʌ* [*mʌi=le tʌpaĩ=lai di-eko*]*=ɦʌru jo koʈʰa=ma tʰie*
and 1SG=ERG 2SG=DAT give-PFV.PTCP=PL this room=in be.PST.3
'The things which I gave to him/her were in that room, and the ones which I gave to you were in this room.'

(34) S relativization
[*biraʈnʌgar=baʈʌ a-eko*] *bʌs tʰik ʈaim=ma a-i pug-y-o*
Biratnagar=from come-PFV.PTCP bus fine time=in come-CP arrive-PST-3
*ʌni* [*kaʈʰmãɖʌũ=baʈʌ a-eko*] *ek gʰʌnʈa agʌɾi nai*
and Kathmandu=from come-PFV.PTCP one hour before EMPH
*pug-i sʌk-j-o*
arrive-CP finish-PST-3
'The bus which came from Biratnagar has already arrived on time, and the one which came from Kathmandu arrived one hour ago.'

(35) A relativization
[*2022 sal=ma fuʈbol wʌrlɖkʌp dzit-eko*] *deʃ ʌrzenʈina ɦo*
2022 year=in football worldcup win-PFV.PTCP country Argentina be.PRS.3
*ʌni* [*tjoɦi varʃa kriketʈ wʌrlɖkʌp dzit-eko*] *inglanɖ=le ɦo*
and that year cricket worldcup win-PFV.PTCP England=ERG be.PRS.3
'The national team which won the Soccer World Cup in 2022 was Argentina, and the one which won the Cricket World Cup in that year was England.'

(36) R relativization

[*mʌɦila=le* *kʰilɔna* *di-eko*] *tʃora* *bastʌv=ma*
lady=ERG toy give-PFV.PTCP child actuality=in
*mero* *bʱai* *ɦo*
1SG.GEN.M brother be.PRS.3SG
*tʌrʌ* [*mʌɦila=le* *mitʰai* *di-eko*]=*la* *mʌlai* *tʰaɦa* *tʃʰai-nʌ*
but lady=ERG sweet give-PFV.PTCP=DAT 1SG.DAT known be.1SG-NEG
'The child to whom the lady gave a toy is actually my brother, but I do not know the one to whom the lady gave a sweet.'

In summary, In Nepali, S, A, P, T, and R are relativized with the perfective participle strategy in headed and headless relative clause constructions.

## 4.4 Sinhala

### 4.4.1 Nonpast participle strategy

In Sinhala, the relativizations of all macro roles with the nonpast participle strategy are accepted. Examples of these are given in (37)–(41).

(37) S relativization
[*mehe:* *innə*] *lamajə*
here exist.NPST.PTCP child
'the child who exists here'
(38) A relativization (Chandralal 2010: 131)
[*darua-wə* *hojənə*] *amma*
child-ACC search.NPST.PTCP mother
'the mother who searches for her child' or 'the mother, who searches for her child'
(39) P relativization (Chandralal 2010: 131)
[*amma* *hojənə*] *darua*
mother search.NPST.PTCP child
'the child whom the mother searches for'
(40) R relativization
[*randzit* *potə* *denə*] *lamea*
Ranjit book give.NPST.PTCP child
'the child to whom Ranjit gives the book'
(41) T relativization
[*randzit* *lamea-ʈə* *denə*] *potə*
Ranjit child-DAT give.NPST.PTCP book
'the book which Ranjit gives to the child'

In Sinhala, the nonpast participle does not function as a noun phrase without modifying a noun or pronoun.

### 4.4.2 Past participle strategy

The relativizations of all macro roles with the past participle strategy were accepted by our Sinhala informant, as shown in (42)–(46).

(42) S relativization
[*mehe:* *hitijə*] *lamajə*
here exist.PST.PTCP child
'the child who existed here'

(43) A relativization
[*darua-wə* *hojəpu*] *amma*
child-ACC search.PST.PTCP mother
'the mother who searched for her child' or 'the mother, who searched for her child.'

(44) P relativization
[*amma* *hojəpu*] *darua*
mother search.PST.PTCP child
'the child whom the mother searched for.'

(45) R relativization (Chandralal 2010: 131)
[*randzit* *potə* *dunnə*] *lamea*
Ranjit book give.PST.PTCP child
'the child to whom Ranjit gave the book'

(46) T relativization
[*randzit* *lamea-ʈə* *dunnə*] *potə*
Ranjit child-DAT give.PST.PTCP book
'the book which Ranjit gave to the child'

In Sinhala, the past participle does not function as a noun phrase without modifying either a noun or pronoun.

### 4.5 Bengali

Bengali does not have multiple participial strategies for relative clause constructions based on the differences of aspect or tense. There is only one participial strategy. Our Bengali informant accepted examples of headed and headless relative clauses with all macro roles.

(47) S relativization
[*ʧennai* *tʰeke* *aʃ-a*] *ʈren=guli* *ekʰɔn-o* *pountʃʰo-e-ni*
Chennai from come-PTCP train=CLF now-also arrive-PRS.3-NEG
*tɔbe* [*dilli* *tʰeke* *aʃ-a*]*=guli* *æk* *gʰɔnʈa* *age* *pountʃʰ-etʃʰ-e*
but Delhi from come-PTCP=CLF one hour before arrive-PRF-3
'The trains which come from Chennai have not arrived yet but the ones which come from Delhi arrived one hour ago.'

(48) A relativization
[*fuʈbol* *biʃʃokap* *dʒit-e* *ne-wa*] *deʃ=guli* *ɦo-ttʃʰ-e* *bradʒil ar* *ardʒenʈina*
football worldcup win-CP take-PTCP country=CLF be.PROG.3 Brazil and Argentina
*ar* [*kriketʈ* *biʃʃokap* *dʒit-e* *ne-wa*]*=guli* *ɦo-l-o* *ɔstʈrelija* *ar* *bʰarɔt*
and cricket worldcup win-CP take-PTCP=CLF be-PST-3 Australia and India
'The countries which win the Soccer World Cup are Brazil and Argentina, and the ones which win the Cricket World Cup are Australia and India.'

(49) P relativization
[*amar* *adʒke* *badʒar-e* *ken-a*] *dʒiniʃ=guli* *amar* *baʈi-te* *atʃʰ-e*
1.SG.GEN today market-LOC buy-PTCP thing=CLF 1.SG.GEN house-LOC be-3

*ar* [*tomar* *kalke* *badʒar-e* *ken-a*]=*guli* *ekʰan-e* *ro-etʃʰ-e*
but 2.SG.GEN yesterday market-LOC buy=CLF here-LOC stay-PRF-3
'The things which I bought in the market today are in my house and the ones which you bought in the market yesterday are here.'

(50) T relativization
[*amar* *take* *de-wa*] *dʒiniʃ=guli* *ʃei* *gʰɔr-e* *tʃʰil-o*
1SG.GEN 3SG.DAT give-PTCP thing=CLF that room-LOC be.PST-3
*ar* [*amar* *apnake* *de-wa*]=*guli* *ei* *gʰɔr-e* *tʃʰil-o*
and 1SG.GEN 2SG.HON.DAT give-PTCP=CLF this room-LOC be.PST-3
'The things which I gave to him were in that room, and the ones which I gave to you were in this room.'

(51) R relativization
[*moɦila-r* *kʰelna* *de-wa*] *battʃa=guli* *aʃɔl-e* *amar* *bʰai*,
lady-GEN toy give-PTCP child=CLF actual-LOC 1SG.GEN brother
*tɔbe* [*moɦila-r* *miʃʈi* *de-wa*]=*guli=ke* *ami* *tʃin-i* *na*
but lady-GEN sweet give-PTCP=CLF=DAT 1SG.NOM know-PRS.1 NEG
'The children to whom the lady gave a toy are actually my brothers, but I do not know the ones to whom the lady gave a sweet.'

In summary, in Bengali, all macro roles, namely S, A, P, T, and R are relativized with the participial strategy in headed and headless relative clauses.

### 4.6 Summary

In this section, we presented data on participial strategies for relative clause constructions in Hindi-Urdu, Early Nepali, Modern Nepali, Sinhala, and Bengali. The findings of the investigation are summarized in Tables 3 and 4 presented above.

## 5 Discussion

The NIA languages examined in this study show both similarities and differences with regard to the relativizability of relative clause constructions. On the one hand, both headed and headless relative clauses are found in the same range of macro roles if a language has both. Among the languages examined, Hindi-Urdu, Early Nepali, Nepali, and Bengali have both headed and headless relative clauses. What can be relativized is the same regardless of the presence or absence of the head NP. In previous studies, headed and headless relative clauses have not been examined together except in the case of Nepali (Wallace 1985). As for Nepali, it has been shown that only the subject is relativized in headless relative clauses via imperfective participles, while there is no such restriction for grammatical relations in headed relative clauses by imperfective participles. This study systematically examined the relativization of S, A, P, T, and R both with and without the head NP for the five languages. We did not find relative clauses that always lack the head NP or that cannot lack the head NP in any of the languages examined.

On the other hand, the five languages differ as to which macro roles can be relativized. Even inside a language, different ranges of macro roles can be relativized by different participles. In previous studies, grammatical relations, such as subject and direct object, are often the parameters of the examination, and consideration is not given to possible differences among macro roles. For example, Hook & Koul (2014) show that relativization by imperfective

participle is only available for subject in Hindi-Urdu. A subject can be interpreted to be composed of S and A. It is not clearly mentioned whether both S and A behave in the same way. In contrast, this study showed that the macro roles treated under one grammatical relation in a given language can show different syntactic behaviors with respect to relativization. We showed that S can be relativized with the imperfective participle in Hindi-Urdu, but A cannot.

Based on the results of our investigation, we propose aspect-based implicational hierarchies of relativizability for NIA languages. For relative clauses with imperfective/nonpast participles, we propose the implicational hierarchy in (52).

(52) Hierarchy of macro roles in imperfective/nonpast (Onset-oriented Hierarchy):
{S} > {A} > {P, T, R}

We consider the macro roles between parentheses to have equal status in the hierarchy. For example, in (52), P, T, and R are written together between parentheses, and we do not consider there to be any hierarchical order among them. The order of the macro roles in a parenthesis is irrelevant. The data for Hindi-Urdu and Early Nepali create the breakpoints. Hindi-Urdu allows relativization for S, but not for A, P, T, and R. Early Nepali allows relativization for S and A, but not for P, T, and R. The other languages in this study allow relativization for all macro roles.

For relative clauses with perfective/past participles, we propose the implicational hierarchy in (53).

(53) Hierarchy of macro roles in perfective/past (Termination-oriented Hierarchy):
{S, P, T} > {A} > {R}

Again, the Hindi-Urdu and Early Nepali data create the breakpoints. Early Nepali allows relativization for S, P, and T, but not for A and R. Hindi-Urdu allows relativization for S, P, T, and A, but not for R. The other languages in this study allow relativization for all the macro roles.

We explain the hierarchies in (52) and (53) uniformly based on the concept of viewpoint (DeLancey 1981; DeLancey 1982). DeLancey (1981) proposes that the domains of space, time, and transitivity have a vector from the onset to the termination as in (54) and that an event can be construed with the viewpoint on either the onset or the termination of one of these domains.

(54) The vectors in the domains of space, time, and transitivity:

| | |
|---|---|
| Space: | Source → Goal |
| Time: | Onset → Termination |
| Transitivity: | Agent → Patient |

In the domain of space, the onset is Source and the termination is Goal. In the domain of time, the onset is Onset and the termination is Termination. In the domain of transitivity, the onset is Agent and the termination is Patient. For example, an event described by the verb *go* is seen from the source of the domain of space. These three domains are not independent from one another. The three vectors in (54) are related metaphorically based on localist metaphor (Croft 2001). DeLancey (1982) argues that an imperfective event has the viewpoint on the temporal onset (Onset) and a perfective event has the viewpoint on the temporal termination (Termination). In this paper, we propose that an event with the viewpoint on the temporal onset

(Onset) metaphorically evoke an event with the viewpoint on the transitivity onset (Agent) based on localist metaphor. The event with the viewpoint on the transitivity onset (Agent) further evokes the agentive participant of the event based on a the event for THE EVENT FOR THE PROTAGONISTS metonymy relationship. The hierarchies in (52) and (53) are explained from these processes. We argue that the reason why S and A come before the other macro roles in the onset-oriented hierarchy in (52) is because an imperfective event tend to evoke the agentive participant of the event. Similarly, a perfective event tend to evoke the patientive participant of the event, namely, P and patientive S. S and P come before the other macro roles in the termination-oriented hierarchy in (53) because of these processes.

We believe that the relativizability of NPs in the five languages examined in this study is better captured by the onset-oriented and termination-oriented hierarchies we present in (52) and (53) than by the NP Accessibility Hierarchy (Keenan & Comrie 1977). In the NP Accessibility Hierarchy, generalizations are made with reference to grammatical relations like subject and direct object. Subject is the syntactic generalization over S and A, and direct object is the generalization over P and T. P and T are in the same position both in (52) and (53). This pattern can be generalized by the NP Accessibility Hierarchy. However, S and A behave differently both in (52) and (53). The differences between S and A cannot be appreciated when these macro roles are grouped in a single category subject, as in the NP Accessibility Hierarchy. Moreover, by presenting two different hierarchies, we can see the difference of relativizability of NPs depending on tense and aspect. These hierarchies are explained in terms of viewpoint, localist metaphor, and THE EVENT FOR THE PROTAGONISTS metonymy relationship.

## 6 Conclusion

In this study, we examined the relativizability of NPs in the five NIA languages: Hindi-Urdu, Nepali, Early Nepali, Sinhala, and Bengali. First, we investigated both headless and headed relative clauses of participial strategies. Second, we examined relativization on arguments for each of the macro roles S, A, P, T, and R. Third, we examined every participial strategy for relative clause constructions when a language has different participles depending on tense or aspect. Our investigation showed that there are both similarities and differences in relative clause constructions in the five NIA languages examined. On the one hand, none of the languages examined shows any difference of relativizability between headed and headless relative clauses. On the other hand, the five languages differ as to which macro roles can be relativized. Based on these findings, we proposed two novel hierarchies of relativizability for the five NIA languages. We proposed the onset-oriented hierarchy {S} > {A} > {P, T, R} for relative clauses with imperfective/nonpast participles and the termination-oriented hierarchy {S, P, T} > {A} > {R} for those with perfective/past participles. We argued that the generalizations discussed in this study can only be made by examining imperfective/nonpast participles and perfective/past participles separately and by using macro roles rather than grammatical relations. We explained these hierarchies in terms of viewpoint, localist metaphor, and a metonymy relationship.

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**Abbreviations**

| | | | | | |
|---|---|---|---|---|---|
| 1 | first person | F | feminine | PL | plural |
| 3 | third person | GEN | genitive | PRF | perfect |
| ACC | accusative | HON | honorific | PFV | perfective |
| CLF | classifier | IPFV | imperfective | PROG | progressive |
| COP | copula | INF | infinitive | PRS | present |
| CP | conjunctive participle | LOC | locative | PST | past |
| CVB | converb | M | masculine | PTCP | participle |
| DAT | dative | NEG | negative | Q | question marker |
| ERG | ergative | NPST | nonpast | SG | singular |
| EMPH | emphasis | OBL | oblique | | |

**References**

Abbi, Anvita. 2001. *A manual of linguistic field work and structures of Indian languages*. Muenchen: Lincom Europa.
Ahmed, Tafseer. 2010. The unaccusativity/unergativity distinction in Urdu. *Journal of South Asian Linguistics* 3(1). 3–22.
Chandralal, Dileep. 2010. *Sinhala*. Amsterdam: John Benjamins.
Croft, William. 2001. *Radical construction grammar: Syntactic theory in typological perspective*. Oxford: Oxford University Press.
Dasgupta, Probal. 1980. *Questions and relative and complement clauses in a Bangla grammar*, Ph.D. dissertation, New York: New York University.
DeLancey, Scott. 1981. An interpretation of split ergativity and related patterns. *Language* 57(3). 626–657.
DeLancey, Scott. 1982. Aspect, transitivity and viewpoint. In Paul J. Hopper (ed.), *Tense-aspect: Between semantics and pragmatics*, 167–183. Amsterdam/Philadelphia: John

Benjamins.
Dryer, Matthew S. 2007. Noun Phrase Structure. In Timothy Shopen (ed.), *Language Typology and Syntactic Description*, vol. II: Complex Constructions, 151–205. Cambridge: Cambridge University Press.
Faquire, Razaul Karim. 2014. Revisiting relative clauses in Japanese, with reference to Bangla. *NINJAL Research Papers* 8. 15–31.
Hook, Peter & Okmar N. Koul. 2014. The noun phrase accessibility hierarchy and participial noun-modifying constructions in Hindi-Urdu and Kashmiri. 11th International Conference of South Asian Languages and Literatures (ICOSAL-11).
Kachru, Yamuna. 1980. *Aspects of Hindi grammar*. New Delhi: Manohar.
Kachru, Yamuna. 2006. *Hindi*. Amsterdam: John Benjamins.
Keenan, Edward L. & Bernard Comrie. 1977. Noun phrase accessibility and Universal Grammar. *Linguistic Inquiry* 8(1). 63–99.
Matthews, David. 1998. *A course in Nepali*. New York, NY: Routledge.
McGregor, Ronald Stuart. 1986. *Outline of Hindi grammar: With exercises*. Reprinted. New York: Oxford University Press.
Nishioka, Miki & Rajesh Kumar. 2021. Hindigo no meishiku shushoku kozo to kino ni tsuite [Noun modifying structures and their function in Hindi]. In Chung Sung-Yeo & Masayoshi Shibatani (eds.), *taigenka riron to gengo bunseki* [Nominalization theory and linguistic analysis], 59–151. Osaka: Osaka University Press.
Paudyal, Netra. 2010. The syntax of three-argument verbs in Nepali. A qualifying paper submitted to Max Planck Institute Leipzig.
Shibatani, Masayoshi. 2019. What is nominalization? Towards the theoretical foundations of nominalization. In Roberto Zariquiey, Masayoshi Shibatani & David W. Fleck (eds.), *Nominalization in Languages of the Americas*, 15–167. Amsterdam/ Philadelphia: John Benjamins.
Shibatani, Masayoshi. 2021. Syntactic typology. In *Oxford Research Encyclopedia of Linguistics*.
Subbārāo, Kārumūri V. 2012. *South Asian languages: A syntactic typology*. Cambridge: Cambridge University Press.
Verbeke, Saartje. 2013. *Alignment and ergativity in new Indo-Aryan languages*. Berlin/Boston: Walter de Gruyter.
Wallace, William David. 1985. *Subjects and subjecthood in Nepali: An analysis of Nepali clause structure and its challenges to relational grammar and government & binding*. Urbana, IL: University of Illinois at Urbana-Champaign dissertation.