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# The Inverse in Japhug Rgyalrong[*]

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Japhug, like other Rgyalrong languages, has an inverse marking system. Although it presents many similarities with the better-described direct/inverse systems of Algonquian languages, it also shows striking differences with them, such as the presence of an ergative case marking system instead of a proximate/obviative distinction.

In this paper, we propose a detailed study of the forms and functions of the inverse prefix in Japhug. First, we give a general description of inverse marking in Japhug, including its place in the verbal person marking system and its structural differences with inverse systems in several other languages. Second, we apply Givón's (1983) methodology of text counts to study the pragmatic, semantic and syntactic parameters that determine the use of the inverse marker in narratives and compare it to the result of Dryer's (1994) study on obviation in Kutenai.

Key words: inverse, empathy hierarchy, Rgyalrong, Japhug, Movima, Kutenai, Cree, Ojibwe

This paper deals with the inverse marking system in Japhug Rgyalrong.[1] Inverse marking was first described for Algonquian languages, and it is present in several

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[1] Japhug (in Chinese Chabao) is a Sino-Tibetan language spoken by about 3,000 people in Mbarkhams County, Rngaba Prefecture, Sichuan Province, China. It belongs to the Rgyalrong group, alongside Situ, Tshobdun (in Chinese Caodeng) and Zbu (In Chinese Ribu, also called Showu or Rdzongmbur). These four languages are closely related to Horpa and Lavrung, with

Amerindian language families (see the recent survey by Zúñiga 2006). In Sino-Tibetan, its existence was unknown until DeLancey (1981a) brought it to light. In this article, we shall provide a detailed description of the functions of the inverse marker and its place within the verbal system of the Japhug Rgyalrong language.

First, we shall give a brief introduction to inverse and direction marking systems, and explain the concept of empathy hierarchy.

Second, since the inverse prefix is an element of the person marking system and cannot be studied independently of it, we shall describe how this system works with both intransitive and transitive verbs in Japhug.

Third, we shall present some typological differences in the use of the inverse marker between Japhug and other languages. In particular, we shall show several features of inverse systems in various languages of the New World that do not exist in Japhug.

Finally, we shall analyze the parameters which are most relevant to predict the presence of a direct or an inverse form when both arguments of a transitive verb are third person: pragmatic, semantic, and syntactic. The methodology developed in Givón (1983) will be applied to Japhug. It will provide a straightforward way to compare the inverse in Japhug to inverse forms in other languages studied with the same methodology, such as Kutenai (Dryer 1994).

## 1. Inverse and direction

Direct/inverse marking is a type of argument marking in which the relative rank of the agent and of the patient of a transitive verb on the empathy hierarchy[2] is indicated by a special marker. Although the exact structure of the empathy hierarchy is language-specific, the following ranking generally prevails:

(1)  1 person / 2 person > 3 person human > 3 person non human animate > 3 inanimate

The ranking of speech-act participants (first and second persons, SAP) varies from language to language, some preferring 2 > 1 (most Algonquian languages), while others

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which they form the *Rgyalrongic* branch of Qiangic languages. For more information about the classification of Rgyalrongic languages, the reader can refer to Sun (2000). All the Japhug data presented here come from the author's own fieldwork. His main language consultant was Chen Zhen. Some of the Japhug texts cited in this article are available online on the LACITO archive: http://lacito.vjf.cnrs.fr/archivage/index.htm

[2]  Also called animacy hierarchy, or indexability hierarchy. The concept originates in Silverstein (1976), but this term was coined by DeLancey (1981b).

show a 1 > 2 hierarchy. SAPs are always ranked higher than third persons.

In languages with direct/inverse marking, transitive verbs bear a *direction* marker.[3] The direction can be either *direct* or *inverse*. Direct marking appears on the verb when the agent outranks the patient on the empathy hierarchy, for instance when the agent is a SAP and the patient third person, while inverse will be used when the patient ranks higher than the agent. To illustrate how the basic system works, let us use some examples from Japhug Rgyalrong.[4]

(2)  **pɯ-mtó-t-a**
      AOR-see-PST-1SG
      'I saw him/her/it.'

(3)  **pɯ-tɯ-mtó-t**
      AOR-2-see-PST
      'You saw him/her/it.'

(2) and (3) are *direct* forms, whose patient is third person, and agent is SAP. The personal affixes *-a* and *tɯ-* are only coreferent with the agent. Unlike other languages with direction marking, Japhug has no overt direct marker (see below). When the SAPs are patient, the following *inverse* forms are found:

(4)  **pɯ́-wɣ-mto-a**
      AOR-INV-see-1SG
      'He/she/it saw me.'

(5)  **pɯ-tɯ́-wɣ-mto**
      AOR-2-INV-see
      'He/she/it saw you.'

The inverse prefix *wɣ-* is inserted before the verb root, but the personal affixes *-a* and *tɯ-* remain unchanged (the absence of the *-t* past tense suffix here will be explained in §2.4). The same prefix *wɣ-* can also appear when both arguments are third person:

(6)  **ʁdɤrʑi   kɯ    ɬamu    pɯ-a-mto**
      Rdorje   ERG   Lhamo   AOR-3SG>3-see
      'Rdorje saw Lhamo.'

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[3]  Direction marking in this context has nothing to do with directional marking or cislocative/ translocative marking; Japhug, the target language of this study, has all three of them.
[4]  All example sentences in this article are from Japhug Rgyalrong, unless otherwise indicated.

(7) **ɬamu    ʁdɤrʑi    kɯ    pɯ́-wɣ-mto**
Lhamo  Rdorje    ERG    AOR-INV-see:3>3SG
'Lhamo was seen by Rdorje.'

When both arguments are third person, the choice of the direction marker is determined by various syntactic (syntactic pivot, word order), semantic (animacy, empathy hierarchy) and pragmatic (topicality) factors. For instance, if an inanimate acts upon a human third person argument, the inverse marker will appear.

The Japhug inverse system briefly presented here cannot be considered a prototypical direct/inverse system. First, unlike some languages such as Movima (Haude 2006) or Cree (see §3.1), it only has an inverse marker, no overt direct marker. A direct marker would be expected in sentences (2), (3) and (6). Second, unlike Movima, direct/inverse does not appear when both arguments are SAPs.

However, as shown in Zúñiga's (2006) survey, it is very common cross-linguistically for direction marking systems to be limited to only a portion of the transitive forms as in Japhug. Zúñiga distinguishes three direction domains: local (both arguments are SAP), core (SAP and third person) and non-local (two third persons).

Japhug lacks direction marking in local contexts, while other languages have direction marking only in local contexts (Nez Percé), or alternatively in non-local contexts (Athabaskan, Kutenai). Besides, ranking of SAP is not always straightforward, and one language can have several competing rankings (Zúñiga 2006:85-86, 92).

## 2. Person marking in Japhug

As pointed out by DeLancey (1981a), in Sino-Tibetan (ST) direct/inverse marking is found in Nocte (Northern Naga) and Rgyalrong (Qiangic). Other Sino-Tibetan languages have hierarchical agreement marking that cannot be considered genuine inverse systems (see in particular Ebert 1991).

Rgyalrong comprises at least four mutually unintelligible languages: Japhug (Chabao), Tshobdun (Caodeng), Zbu (Showu, Ribu, Rdzongmbur) and Situ (Eastern Rgyalrong) (cf. footnote 2). These languages are spoken in the south of Rnga-ba (Aba) prefecture, especially in Mbarkhams (Ma'erkang) county, the heart of the Rgyalrong area, where the maximal linguistic diversity lies. On the following map, the Rgyalrong-speaking region is indicated in grey. The Japhug language is located in the area around the black dot.
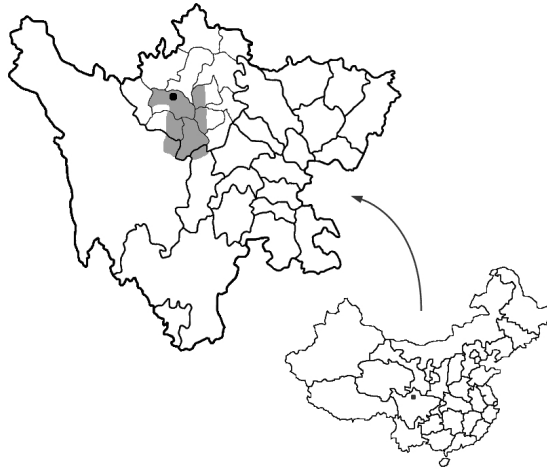
**Figure 1:** The Rgyalrong-speaking region in Sichuan

Since inverse marking belongs to the domain of person marking, we first need to give a clear account of person agreement in Japhug.

## 2.1 Marking of argument relations on the noun

Japhug is a strongly head-marking language, and most information on actantial relations, as we shall see, appear on the verb. However, we also find a small set of clitics marking grammatical relations in this language. Among them is the ergative marker *kɯ,* possibly a loan from the Tibetan ergative marker *gis / gyis / kyis*.[5] S and O are left unmarked, as can be seen in sentences (8) and (9). A is marked with the ergative marker.

(8) ɬamu    ci    ɲɤ-nɤre
    Lhamo    a little    EVD-laugh:3SG
    'Lhamo laughed a little.'

(9) ʁdɤrʑi    kɯ    ɬamu    pɯ-a-mto
    Rdorje    ERG    Lhamo    AOR-3SG>3-see
    'Rdorje saw Lhamo.'

Ergative marking is compulsory with third person participants in Japhug for all

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TAM categories, but it appears only rarely with SAP pronouns such as *aʑo* 'I' and *nɤʑo* 'you'. Ergative of SAP mostly occurs in contrastive sentences such as (10):

(10)   aʑo   kɯ   tɤ-nɯ-nɯrdóʁ-a          çti                       ma
          1SG   ERG  AOR-AUTO-gather-1SG>3SG  NPST:be(assertive):3SG  CONJ
          ɯʑo   kɯ   ta-nɯrdoʁ          tɤ-nɯ-ndó-t-a            me
          3SG   ERG  AOR:3SG>3-gather  AOR-AUTO-take-PST-1SG>3  NPST:not_be:3SG
          'I gathered it myself (the fruit), I did not take what he gathered.' (The Mouse And The Sparrow, 10)

As we shall see, the explanation for this split is quite straightforward, as any transitive verb has personal indices for both patient and agent: it is only when both arguments are third person that ambiguity may arise in determining which is patient and which is agent.

Like all Qiangic languages, Japhug is a verb-final language, and the A is generally placed before the O. However, the patient may also appear before the agent in marked contexts; this issue will be discussed below, when treating the inverse prefix.

## 2.2 Person marking on intransitive verbs

We shall first describe the system of person marking on intransitive verbs, as it is simpler than the one on transitive verbs. This system is very similar to the system found in Situ Rgyalrong (Lin 1993) and Tshobdun Rgyalrong (Sun 2003).

Intransitive verbs mark both the person and the number (singular, dual, or plural) of S. In some ST languages, in the case where S is 3rd person and the possessor of S is an SAP, there is agreement with the SAP possessor rather than with S (we shall see that this is the case in Tangut, in particular). However, in Japhug Rgyalrong, agreement never occurs with the possessor. For instance:

(11)   a-xtɯ              ɲɯ-mŋɤm
          1SG.POSS-belly     DIRECT.EVD-hurt:3SG
          'My belly hurts.'

In example (11), we see that the verb has no agreement affix, and therefore marks the third person singular, agreeing with 'belly' rather than with 'I'.

Unlike Situ Rgyalrong, there is no inclusive/exclusive distinction in the 1du and 1pl forms in Japhug Rgyalrong. Most personal affixes are suffixes, the only exception being the second person prefix *tɯ-*. Agreement suffixes are similar to the possessive

prefixes and the independent pronouns (which are constructed by adding *-ʑo* 'self' to personal prefixes), a fact suggesting that they could be relatively recently grammaticalized from the pronouns. There is no suffix in 2sg—it would be redundant.[6] 3sg is marked by the bare stem.

In Table 1, agreement marking on the verb is compared to possessive prefixes and pronouns; R represents the radical of the verb:

**Table 1:** Person and number marking on intransitive verbs in Japhug

| Person | Verbal affixes | Possessive prefix | Pronoun |
|--------|----------------|-------------------|---------|
| 1sg | *R-a* | *a-* | *aʑo* |
| 1du | *R-tɕi* | *tɕi-* | *tɕiʑo* |
| 1pl | *R-i* | *ji-* | *jiʑo* |
| 2sg | *tɯ-R* | *nɤ-* | *nɤʑo* |
| 2du | *tɯ-R-ndʑi* | *ndʑi-* | *ndʑiʑo* |
| 2pl | *tɯ-R-nɯ* | *nɯ-* | *nɯʑo* |
| 3sg | *R* | *ɯ-* | *ɯʑo* |
| 3du | *R-ndʑi* | *ndʑi-* | *ʑɤni* |
| 3pl | *R-nɯ* | *nɯ-* | *ʑara* |

The second person prefix in all Rgyalrong languages is unrelated to the pronouns, and it has been compared to the second person *tə-* prefix in southern Kiranti languages (Ebert 1990, 1991). It might belong to an older stratum of person markers, though it is difficult to determine whether the second person prefixes of Rgyalrong and Kiranti languages are indeed related.

The only morphological irregularities in Japhug with person marking affixes are found in the verbs *ɣɤʑu* 'to have' and *maŋe* 'not to have', which have the unusual forms *ɣɤtɤʑu* and *mataŋe* in the second person singular: the second person prefix appears as an infix rather than as a true prefix. These irregularities are one more piece of evidence suggesting that the prefix *tɯ-* is older than the suffixes.

## 2.3 Person marking on transitive verbs

As we have already said above, all transitive verbs agree with two arguments.[7] Many agreement affixes are similar to those of intransitive verbs.

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[6] In Situ Rgyalrong, intransitive 2sg is marked by both a *tə-* prefix and a *-n* suffix, the latter being related to the 2sg pronoun.

[7] On the few syntactically transitive verbs that have intransitive morphology in Japhug, see Jacques (2004:338).

In order to represent argument marking on a transitive verb, we use a table where columns represent patients (O) and rows - agents (A). The cases where both A and O are 1sg or 2sg are shaded in grey, because an intransitivizing reflexive prefix would be needed to express this kind of meaning in Japhug. The complete paradigm comprises 33 different forms. Theoretically, we could have expected as much as 72 (even more if Japhug had an inclusive/exclusive distinction), but in most cases, the number of only one argument is marked.

**Table 2:** Person and number marking on transitive verbs in Japhug

PATIENT

| AGENT | 1s | 1d | 1p | 2s | 2d | 2p | 3s | 3d | 3p |
|---|---|---|---|---|---|---|---|---|---|
| 1s | ▓ | ▓ | ▓ | | | | R-a | R-a-ndʑi | R-a-nɯ |
| 1d | ▓ | ▓ | ▓ | ta-R | ta-R-ndʑi | ta-R-nɯ | R-tɕi | | |
| 1p | ▓ | ▓ | ▓ | | | | R-i | | |
| 2s | kɯ-R-a | | | ▓ | ▓ | ▓ | tɯ-R | | |
| 2d | kɯ-R-a-ndʑi | kɯ-R-tɕi | kɯ-R-i | ▓ | ▓ | ▓ | tɯ-R-ndʑi | | |
| 2p | kɯ-R-a-nɯ | | | ▓ | ▓ | ▓ | tɯ-R-nɯ | | |
| 3s | **wɣ-R-a** | | | | | | R | | |
| 3d | **wɣ-R-a-ndʑi** | **wɣ-R-tɕi** | **wɣ-R-i** | tɯ-**wɣ**-R | tɯ-**wɣ**-R-ndʑi | tɯ-**wɣ**-R-nɯ | R-ndʑi | | |
| 3p | **wɣ-R-a-nɯ** | | | | | | R-nɯ | | |
| | | | | | | | **wɣ**-R | **wɣ**-R-ndʑi | **wɣ**-R-nɯ |

When the patient is 3sg, the agreement affixes on the verb are identical to those of an intransitive verb. This might appear at first glance as an indication that person marking on the verb follows an accusative alignment: if 1 > 3 = 1, 2 > 3 = 2 and 3 > 3 = 3, we have the alignment S=A.

However, a simple look at the other forms shows that it is not the case: the personal affixes -*a* and *tɯ-* found on intransitive verbs appear not only in 1 > 3 and 2 > 3 forms, but also in 3 > 1 and 3 > 2, where the SAP are O not A. The marking of SAP > 3 is not identical with 3 > SAP, though: in 3 > 1 and 3 > 2 forms, one more affix appears: the *wɣ-* prefix.

Moreover, when both arguments are SAP, two affixes not found on intransitive verbs are present: the portmanteau prefixes *ta-* (1 > 2) and *kɯ-* (2 > 1). In the 2 > 1 form, the verb also takes the first person suffix -*a* that marks the patient. We shall see below that in 1 > 2 forms, the verb stem has a suffix coreferent with the patient too; it does not appear in Table 2 because the second person singular suffix is zero (see Table 1). The fact that the suffixes mark the patient rather than the agent seems to indicate here an ergative (1 > 2 = 2, 2 > 1 = 1), rather than an accusative alignment.

It is obvious that Japhug Rgyalrong verbal morphology is neither purely accusative nor ergative. The *wɣ-* prefix that appears in 3 > 1 and 3 > 2 can be described as an inverse marker,[8] and the system is based on the empathy hierarchy mentioned in §1, rather than on a purely syntactic principle: when one argument is SAP and the other non-SAP, regardless of which is agent and which is patient, the verb takes a suffix coreferent with the SAP. First and second persons are higher on the hierarchy than third persons:

(12)   SAP > non-SAP

The inverse prefix appears in situations where the agent is non-SAP and the patient is SAP (3 > 1 and 3 > 2), that is when the agent lies lower in the empathy hierarchy than the patient. In these forms, the presence or absence of an inverse prefix is semantically determined.

From the point of view of slot accessibility, we can refine this hierarchy further: the number of both arguments can appear on the verb only if one of the arguments is 1sg.[9] This suggests that 1sg is higher than 1du, 1pl, and second person:

(13)   1sg > 1du, 1pl, 2 > non-SAP

When both arguments are non-SAP, the inverse prefix can also indicate pragmatic parameters (see Sun & Shi 2002:89, Givón 1994). When the patient is placed before the agent marked with the ergative suffix, the inverse prefix normally appears on the verb (a similar phenomenon occurs in Caodeng (Tshobdun) Rgyalrong, see Sun & Shi 2002: 93). Compare sentence (14), where the normal order agent-patient-verb is followed, and sentence (15), where the order is reversed:

(14)   ʁdɣrʑi      kɯ      ɬamu       pɯ-a-mto
       Rdorje   ERG   Lhamo    AOR-3SG>3-see
       'Rdorje saw Lhamo.'

(15)   ɬamu      ʁdɣrʑi      kɯ      pɯ́-wɣ-mto
       Lhamo    Rdorje   ERG   AOR-INV-see:3>3SG
       'Lhamo was seen by Rdorje.'

However, these are elicited sentences, and as we shall show in §4, the presence or

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[8]   DeLancey (1981a) first noticed the existence of inverse marking in Rgyalrong languages, based on data from the Situ dialect. The inverse system of the Caodeng (Tshobdun) Rgyalong dialect was analyzed in detail by Sun & Shi (2002).

[9]   Exactly the same phenomenon exists in Caodeng Rgyalrong (Sun & Shi 2002).

absence of the inverse cannot be predicted by word order in any straightforward way, unlike the *yi-*/*bi-* distinction in Athabaskan languages (see for instance Willie 2000).

As for the etymology of the inverse prefix, two hypotheses are possible. First, it could be related to the third person form \*wə.[10] Second, it could be compared to the cislocative *ɣɯ-* which itself originates from the verb *ɣi* 'to come'. The evolution from cislocative to inverse is attested in Nez Percé (Zúñiga 2006:165-166).

## 2.4 Other person and number indices

Apart from the affixes presented in Table 3, person and number of the arguments can be indicated by three other verbal markers, but these markers do not occur in all TAM categories and on all verbs, and are largely redundant with the affixes presented in Table 3.

First, on the condition that (a) both arguments are third person, (b) there is no inverse prefix, and (c) the verb is in the aorist tense, an *a-* prefix is inserted between the verb stem and the aorist prefix. For instance, 'he saw him' is *pɯ-a-mto* (see examples (6) and (9)).

Second, when (a) 1sg > 3 or 2sg > 3, (b) the verb is in any past TAM category (aorist, past evidential, etc) and (c) the verb stem ends in a vowel, a *-t* suffix appears between the verb stem and the personal suffix if any: *pɯ-mtó-t-a* 'I saw him', *pɯ-tɯ-mto-t* 'You saw him'.

Third, when (a) the verb stem ends in *-a, -o, -u* or *-ɯ*, (b) the agent is singular and the patient is third person, (c) there is no inverse prefix and (d) the verb is in any non-past category (present, direct evidential, imperfect, irrealis etc), a regular stem alternation occurs (Jacques 2004:353).[11]

## 2.5 The portmanteau prefixes

Many ST languages have portmanteau affixes for 1 > 2 or 2 > 1 forms. For instance, all Kiranti languages have a suffix (Limbu *-nɛ*, etc) for 1 > 2 that seems to be linked to the second person pronoun[12] (Van Driem 1993). In Rgyalrong, the 1 > 2 and 2 > 1 prefixes *ta-* and *kɯ-* are remarkable in being apparently unrelated to the free pronouns.

As has been noticed before, *ta-* (1 > 2) might be related to the second person prefix *tɯ-* by addition of an *-a-* element of unknown function.[13] DeLancey (1981b:643)

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[10] In Situ Rgyalrong, transitive verbs in 2 > 3 and 3 > 3 direct forms have a *-w* suffix (Lin 1993: 198). This suffix is related to the third person pronoun *wəjo* 'he' (cognate with Japhug *ɯʑo*).

[11] Stem alternation in Rgyalrong languages was first described in Sun (2000, 2004).

[12] This suffix is in my opinion one of the strongest examples of a common morphological innovation common to all Kiranti languages (including Hayu).

[13] One anonymous reviewer proposed to relate this element to the 1sg marker *a-*. However, this

conjectured that this -*a*- element might originally have been a direct marker, and his hypothesis seems reasonable: in Rgyalrong languages, unlike in Algonquian languages, first person is higher than second person in the empathy hierarchy. The only other trace of this direct marker in the language would be the -*a*- prefix that appears in 3 > 3 forms in the aorist (see §2.4), which never co-occurs with the inverse prefix. In this theory, the direct marker prefix would have disappeared in 1 > 3 and 2 > 3 because it was redundant, and was only maintained in 1 > 2 and (partially) 3 > 3. It should however be noted that the direct marker that we conjectured would have been different from the -*ā* suffix in Cree (cf. Table 5), which is restricted to 1 > 3 and 2 > 3 and never appears when both arguments are SAP.

## 2.6 Inverse and generic

The Japhug inverse marker *wɣ*- is also used to mark the generic form of transitive verbs, expressing in particular general truths and appearing very commonly in procedural texts. For intransitive verbs, a *kɯ*- prefix (unrelated to the 2 > 1 *kɯ*- prefix) is used instead:

(16) tɯʑo    tɤ́-wɣ-ndza    tɕe    ɲɯ-kɯ-tso
     oneself  AOR-GEN:A-eat  CONJ   IPFV-GEN:S-understand
     'One has to eat to know (if it is tasty or not).'

This form is not normally found with first or second person objects, only with a 3 > 3 scenario, and never bears dual or plural suffixes. It is not formally distinguishable from an inverse 3 > 3sg form.

The *kɯ*- prefix is also used when the generic argument is the patient (O) of the verb, as can be seen in example (17), taken from a story about the yeti:

(17) ɯ-ʁari    nɤ    ɯ-ʁari    ʑo    ju-kɯ-phɣo    a-pɯ-ŋu    tɕe,
     3SG-front  CONJ  3SG-front PART  IPFV-GEN:S-flee IRR-IPFV-be CONJ
     maka   ʑo    mɯ-pjɤ-kɯ-mto    khi
     at_all PART   NEG-EVD-GEN:O-see hearsay
     'If one runs in the direction front of (the yeti_i), one will not be seen by (him_i).' (The Yeti)

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seems unlikely because 1sg *a*- regularly comes from proto-Rgyalrong *ŋa, while there is no evidence that *ta*- comes from *tə-ŋa-: the Situ Rgyalrong language generally preserves initial *ŋ-, and the 1 > 2 portmanteau prefix is also *ta*- in that language.

It is clear from the data that the generic markers follow an *ergative* alignment in Japhug: S=O≠A, unlike nominalizers which follow rather an accusative alignment (Sun 2003: 497, Jacques 2004:444), but in conformity with the case marking system.

As Jackson T.-S. Sun has pointed out in his study of generic arguments in Rgyalrongic languages (Sun 2005), [14] this *kɯ-* generic prefix is related to the nominalizing prefixes *kɯ-* 'agent noun' and *kɤ-* 'patient/action noun'.

## 2.7 Summary

Japhug has a clear 1sg > 1n.sg, 2 > 3 hierarchy. Unlike Cree (Zúñiga 2006:84), there is no need to suppose several distinct competing hierarchies. However, a major difference between Japhug and the better-known Situ and Caodeng (Tshobdun) dialects is that the inverse prefix only appears in core (SAP<->3) and non-local (3<->3) contexts, never in local contexts (SAP<->SAP): the 2 > 1 form is not redundantly marked with the *wɣ-* prefix.

The morphemes studied in this chapter and their function can be summarized in the following table:

**Table 3:** Agreement affixes in Japhug

| Form | Function |
| --- | --- |
| *-a* | 1sg |
| *-tɕi* | 1du |
| *-i* | 1pl |
| *tɯ-* | 2 |
| *-ndʑi* | 2/3du |
| *-nɯ* | 2/3pl |
| *ta-* | 1 > 2 |
| *kɯ-* | 2 > 1 |
| *wɣ-* | inverse (3 > SAP, some 3 > 3) |
| *a-* | 3 > 3 direct aorist |
| *-t* | 1sg/2sg > 3 aorist (open syllabe) |
| (stem alternation) | 123sg > 3 non-past direct form (open syllable) |

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[14] The systems of impersonal markers in Caodeng (Tshobdun), Lavrung, Situ and Horpa described in this paper, though closely related to the Japhug one, all differ from it.

# 3. Japhug direction marking in typological perspective

As Zúñiga's survey has shown, inverse systems vary considerably from language to language. Now that Japhug verbal agreement morphology has been summarily described, we shall point out how the inverse system in Japhug differs from the systems that have been described in other languages, in particular Algonquian, Kutenai, and Movima.

We shall focus on four distinct topics: obviative/proximate marking, generic marking, ranking of local arguments and constraints on the proximate/obviative status of nouns.

## 3.1 Proximate/obviative marking

Some languages, such as Algonquian languages and Kutenai, have a so-called proximate/obviative distinction on nouns besides direction marking on the verb. The proximate argument is the most topical one, while obviative arguments are less topical. At most one argument can be proximate (there may be none), while there may be several obviative arguments. When the A of a transitive verb is proximate and the P obviative, the verb has direct marking, whereas inverse marking appears when the A is obviative and the P proximate. When both arguments are obviative, both direct and inverse can appear. Here is a Plain Cree example slightly adapted from Zúñiga (2006:82, citing Wolfart 1996:397):

(18) Plain Cree
  **tāpwē awa iskwēw pakamahw-ē-w ēsa ōhi wīhtiko-wa**
  truly   DEM.PROX woman.PROX strike-DIR-3   REP DEM.OBV windigo-OBV
  'Truly the woman (proximate) struck down that windigo (obviative).'

Using inverse marking on the verb *pakamahw-ikw-w* in this sentence would have resulted here in the opposite meaning 'the windigo struck the woman'.

This proximate/obviative opposition also has a reflection on verbal morphology in both Kutenai and Algonquian languages. In Kutenai, intransitive verbs whose S is obviative have a special obviative marking (Dryer 1992:71-72). In Cree, argument marking on both intransitive and transitive verbs differs whether the third person is proximate or obviative. As an illustration, the following table includes all singular forms of the transitive animate verb *sēkih-* 'frighten' (Zúñiga 2006:266, from Dahlstrom 1991):

**Table 4:** Direct/inverse marking in Cree (singular forms)

|  | 1 | 2 | 3Prox | 3Obv |
|---|---|---|---|---|
| 1 |  | ki-sēkih-iti-n | ni-sēkih-**ā**-w | ni-sēkih-im-**āw**-a |
| 2 | ki-sēkih-i-n |  | ki-sēkih-**ā**-w | ki-sēkih-im-**āw**-a |
| 3Prox | ni-sēkih-**ikw**-w | ki-sēkih-**ikw**-w |  | sēkih-**ē**-w |
| 3Obv | ni-sēkih-**iko**-yi-w-a | ki-sēkih-**iko**-yi-w-a | sēkih-**ikw**-w | sēkih-ē-yi-w-a |

Zúñiga (2006:73-80) provides the following analysis for each of the morphemes appearing in the the paradigm:

**Table 5:** Analysis of the agreement morphemes in the Cree transitive paradigm

| Form | Gloss |
|---|---|
| *ki-* | +addressee |
| *ni-* | +speaker, –addressee |
| *-im* | strong direct ( SAP > obv, 3prox > further obv) |
| *-ā* | direct (SAP > 3) |
| *-ē* | direct (3prox > 3obv) |
| *-ikw / -iko* | inverse (3 > SAP, 3obv > 3prox) |
| *-i* | portmanteau 2 > 1 |
| *-iti* | portmanteau 1 > 2 |
| *-yi-* | obviative subject (except 3obv > 3prox) |
| *-n* | singular SAP |
| *-w* | 3 argument |
| *-a* | singular obviative actant |

The mutually exclusive forms **-im-** and **-yi-** as well as **-a** encode the obviative/proximate distinction in the verb morphology. On intransitive verbs, **-yi-** and **-a** also appear on verbs with obviative S: *pimipahtā-w* (he ran, 3prox) vs. *pimipahtā-yi-w-a* (3obv).

In Japhug, nothing similar exists. There is no obviative affix on nouns, and no direct/inverse marker can appear on intransitive verbs. There is also nothing comparable to the **-im** "strong direct" and **-yi-** "obviative subject" suffixes present in the Cree paradigm.

Japhug and other Rgyalrongic languages are not unique in lacking obviative/ proximate marking: Mapudungun and Athabaskan languages also lack such a system. As we shall see in §4, this will make our analysis of the non-local usage of the inverse more difficult than in Algonquian or Kutenai. In particular, with intransitive verbs, no clues exist in languages such as Rgyalrong regarding the proximate/obviative status of the S.

## 3.2 Inverse and generic

One interesting property of the Rgyalrong inverse is the homonymy between the inverse and the A-generic *wɣ-*. Nothing of the sort is found in any of the languages under study in Zúñiga's (2006) survey.

Algonquian languages have agentless forms that occur with both SAP or non-SAP as O, unlike Rgyalrong where the O must be third person. In all three Algonquian languages investigated in Zúñiga (2006:112), two distinct agentless suffixes appear: *-ikawi-* in forms with SAP patient, and *-ā* (instead of *-ē*) with third person patient. The third person agentless form is thus more similar to the direct form than to the inverse one. This is the reverse of the Rgyalrong situation.

The homonymy found in Rgyalrong between inverse and generic seems therefore to be unknown in other languages, though the development from inverse to generic seems relatively straightforward, as the inverse construction (like a passive construction) implies that the O is more topical than the A.

## 3.3 Hierarchy of local arguments

In Rgyalrong languages, we have seen that either 1 > 2 (as in Situ) or 1sg > 1du/pl > 2 (as in Japhug). Unlike Plain Cree, where as many as three distinct hierarchies need to be taken into account (Zúñiga 2006:85-86), these hierarchies account for all syntactic and morphological phenomena in Rgyalrong languages.

Another phenomenon that does not occur in Rgyalrongic languages is the pragmatic use of inverse in local scenarios. In Movima (Haude 2006:276), the hierarchy is the following:

(19)    1sg > 1incl/excl > 2sg > 2pl > 3human > 3non-human

However, Haude (2006:278) reports rare cases where 1 > 2 verbal forms can bear the inverse, or 2 > 1 forms with the direct marker. According to her these unusual constructions are used to 'focus on the hierarchically higher person'.

Nothing of the sort exists as far as we know in Rgyalrongic languages: 1 > 2 forms never cooccur with an inverse prefix.

## 3.4 Constraints on the proximate status of nouns

In Algonquian languages, possessed nouns must be obviative if the possessor is third person, because, as Zúñiga (2006:83) points out, 'no possessed noun may outrank

its possessor on the obviation scale'. This constraint does not apply if the possessor is SAP. A similar constraint also exists in Athabaskan languages. The following examples from Ojibwe shall illustrate how this principle works with transitive verbs (Aissen 1997: 713):

(20)  Ojibwe

    **o-waabam-aa-an**     **o-gwis-an**

    3-see-DIR-OBV     3-son-OBV

    'He$_i$ sees his$_{i/j}$ son. / His$_i$ son sees him$_{j/*i}$.'

(21)  Ojibwe

    **o-waabam-igo-an**     **o-gwis-an**

    3-see-INV-OBV     3-son-OBV

    'He$_i$ sees his$_{i/*j}$ son. / His$_i$ son sees him$_{i/j}$.'

In (20), the verb bears a direct marker, and the form *o-gwis-an* 'his son' cannot be A if the possessive prefix *o-* is coreferent with the second (non-overt) argument of the transitive verb *waabam-* 'to see'. In (21), on the contrary, the verb has an inverse marker, and therefore the possessed noun *o-gwis-an* can be A: the presence of an inverse form indicates that the A is lower than the O on the obviation scale.

    As we pointed out in §3.1, there is no proximate/obviative distinction in Japhug. Therefore, in order to test whether a constraint on the status of possessed nouns exists, only very few examples are really usable. We can only rely on verb morphology, but even there intransitive verbs lack obviation indices, so that the only type of sentences where such a constraint would apply would be one where (a) the verb has two animate arguments (unlike 'to speak', whose O, as we shall see, is the complement clause) (b), the A has a third person prefix and (c) the O (overt or non-overt) is coreferent with the third person possessive prefix of the A. We found only two clear examples in our entire corpus of Japhug texts, and in both examples, no inverse prefix appears:

(22)  **thɯ~thɯci**    **ku-nɯ-ŋu**    **kɯ**    **ɯ-pi**         **kɯ**

    ~some        DUR-AUTO-be   ERG  3SG.POSS-elder_sister  ERG

    **ɲɤ-z-nɯqatɯkɯr**

    EVD-CAUS-behave_badly

    'Somehow, her elder sister$_i$ caused her$_i$ to behave badly.' (Kun-bzang, 272)

(23)  **ji-βdaʁmu**    **kɯki ɯ-pi**        **kɯ**  **ɣɯ-jɤ-a-sɯ-ɣe**

    1PL.POSS-queen  DEM   3SG.POSS-elder_sister  ERG  CIS-AOR-3>3-CAUS-come[2]

    'Our Queen, her$_i$ elder sister invited her$_i$.' (Kun-bzang, 147)

These sentences clearly show that no constraint similar to the one described for Algonquian languages exists in Japhug, otherwise an inverse prefix ought to have been present on both verbs (*ɲɤ́-wɣ-z-nɯqatɯkɯr and *ɣɯ-jɤ́-wɣ-sɯ-ɣe), as it did in the Ojibwe sentence (21).

## 4. The use of the inverse in non-local scenarios

The previous sections have outlined the major structural and morphological properties of inverse marking in Japhug. The present section will focus on the most complex cases, the non-local scenarios, where the choice of using or not using the inverse is dictated by a variety of factors. Three main categories of factors will be taken into account: semantic, syntactic, and pragmatic.

In order to study the use of the inverse in a systematic way, we made exhaustive counts on a series of Japhug texts. These counts concerned the relation of anaphora of the non-overt arguments with the arguments of preceding sentences.

We chose twelve stories from a larger corpus of more than thirty texts, and encoded them into a spreadsheet database. Only narratives were included; we decided to exclude procedural texts, because inverse verbal forms are almost non-existent in these texts except for generic inverses, and conversations, because anaphora is more difficult to study in those texts.

In our corpus of narratives, we found only 49 examples of inverse, and several relatively long stories did not even contain a single example of verb with an inverse marker. When the same sentence was repeated, it was only counted once in our database. Besides, complex predicates formed of an intransitive verb with a non-finite transitive verb complement were counted as intransitives in the database, even if the agent of the complement transitive verb was marked with the ergative.

The basic unit of our database was the sentence, defined as any syntactic constituent whose head is a finite verb. Quoted speech was excluded from the database. Each sentence was associated with five columns, corresponding to S (only argument of intransitive verb), A (agent), O (patient), E (external argument), plus one column specifying whether the verb was inverse or direct. Overt arguments were marked with a special symbol.

This database allowed us to study semantic features, anaphora and various pragmatic properties in a consistent way for all these texts. From each of the 49 examples of sentences with the inverse marker, we made a database, where each example is coded for five parameters: anaphora of A and O with the preceding sentence, the semantic features of A and O, as well as three pragmatic parameters: referential distance, persistence and overt/covert.

In order to have comparable data with direct sentences, we collected 98 examples of direct forms, i.e. all the transitive direct sentences (excluding verbs of speech whose O is a complement clause) from three out of the twelve stories, and performed the same analysis. We did not intend on purpose to have exactly twice as many direct sentences as inverse ones.

## 4.1 Semantic constraints

Sun & Shi (2002) pointed out that the use of the inverse in Rgyalrong languages is sensitive to the empathy hierarchy when both arguments are third person. As we shall show in this section, semantic constraints on the use of the inverse prefix are very robust, and usually override syntactic and pragmatic factors.

When a verb has non-animate A and a human O, the inverse must *always* appear; no counterexample is found in any text:

(24) tɯ-ci      nɯ kɯ  taʁ-nɤ-taʁ   taʁ-nɤ-taʁ   ʑo   tó-wɤ-tsɯm
     NEU-water DEM ERG up-CONJ-up  up-CONJ-up  PART  EVD:UP-INV-take
     'The water drained him upwards.' (The Flood, 24)

Likewise, the inverse *cannot* occur when the A is human and the O inanimate, regardless of word order. In the following sentence, the O is placed before the A, but no inverse appears on the verb.

(25) qro    ɯ-ndʑi       tɯ-rdoʁ   nɯ  tɤ-tɕɯ   nɯ  kɯ  ko-nɤtsɯ
     pigeon 3SG.POSS-skin one-piece DET NEU-boy DET ERG EVD-hide
     'The boy hid one of those pigeon skins.' (The Flood, 53)

This implies that verbs whose O is always inanimate will never take the inverse prefix, regardless of the status of their A. This is the case with the verb *ti* 'to speak' and the verb *kho* 'to give'; these verbs have three arguments, but the theme is treated as the O, and the recipient is usually expressed with a postposition. The O of the verb 'to say' is the quoted complement clause, which can be considered as inanimate as far as the empathy hierarchy is concerned.

(26) kɯɯtsɤɣ  nɯ  ɯ-ɕki   nɯ  tɕu qala  kɯ    ... to-ti
     leopard  DET 3SG-DAT DET LOC rabbit ERG        EVD-say
     'The rabbit said "..." to the leopard.' (The Smart Rabbit, 56-70)

(27) aʑɯɣ      a-ɣɯ-thɯ-tɯ-khɤm            ra
       1SG.GEN    IRR-CIS-IRR:DOWNSTREAM-2-give[3]    NPST:must
       'You will then have to give it to me.' (The Three Sisters, 131)

Even if the recipient is higher than the speaker on the empathy hierarchy, the verb will therefore never bear the inverse prefix. This is different from Cree (Zúñiga 2006:82-83), where the verb 'to say' has its recipient coded as an O, and therefore can be either direct (*it-ē-w*) or inverse (*it-ikw-w*). This makes it more difficult to study proximate continuity in Rgyalrong than in Cree or other languages, since the verb 'to say' is probably by far the most common verb in narratives. Some triactantial verbs have their recipient coded as O, such as *mbi* 'to give':

(28) nɯ-me           stu    kɯ-xtɕi         ɲɯ-kɯ-mbi-a      ra
       2PL.POSS-daughter   most   NMLZ:STAT-small   IPFV-2>1-give-1SG   NPST:must
       'You have to give me your youngest daughter.' (Gesar, 9)

These verbs can have two human arguments, and therefore occur with (or without) the inverse.

     Between humans and animals, as noticed before by Sun & Shi (2002:92), the hierarchy is less strict than between animates and inanimates. Examples of human O with animal A without inverse marking on the verb sometimes occur in texts:

(29) ndʑi-sɤtɕha   nɯnɯ   ɣɯ   jil          nɯnɯ   khu   kɯ   lonba   ʑo
       3DU-place    dem    GEN   neighbour   DEM     tiger   ERG   all      PART
       tha-ɕkɯt           ɲɯ-ŋu
       AOR:3>3-eat_up   IPFV-be
       'All their neighbours had been eaten by a tiger.' (The Tiger, 1)

     Nevertheless, such examples are extremely rare. In most stories, even when an animal is a major character able to speak (such as the fox in the story 'the Fox' and the horse character in Gesar and the story 'the Bdud'), inverse is *always* used when the animal character is A and the main human character is O.

     Results drawn from our database are shown in Table 6 for inverse and direct forms in relation to the degree of animacy of their arguments. These results confirm the account presented above. Note, however, the high proportion (63%) of human > human configurations in inverse sentences, a much higher proportion than in direct sentences.[15]

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[15]   This does not mean, though, that most sentences with hum > hum configuration will be in the inverse form, as direct sentences are much more common, as §4.3.1 will show.

**Table 6:** Animacy and direction

| A > O | Inverse (49) | Direct (98) |
|---|---|---|
| *inanimate > inanimate*/*animal* (unattested) | 0 | 0 |
| inanimate > human | **4** (8%) | 0 |
| animal > inanimate | 0 | **3** (3%) |
| animal > animal | **1** (2%) | 0 |
| animal > human | **13** (26%) | 0 |
| human > inanimate | 0 | **81** (83%) |
| *human > animal* (unattested) | 0 | 0 |
| human > human | **31** (63%) | **14** (14%) |

Given the limited size of our database, some possible configurations are not attested (*human > animal* or *inanimate > inanimate*).

## 4.2 Syntactic constraints

The empathy hierarchy is not the only factor governing the use of the inverse in Rgyalrong. Syntactic constraints also have some influence on direction marking. We already suggested above that word order had some influence on the use of the inverse, but we did not do a systematic study on this subject, as sentences with two overt arguments are relatively rare in Rgyalrong texts, and most sentences are limited to a finite verb form (see §4.3.4). Therefore, our research concentrated on the use of inverse in constructions where both arguments are covert, but two verbs share one or two argument, in order to determine whether a syntactic pivot can be defined by the use of the inverse.

In order to represent the trans-clausal coreference relations, we make use of the following conventions: X→Y indicates that the argument whose syntactic role is Y in the current sentence is coreferent with an argument whose role was X in the preceding sentence. When a given argument has the same role X in the current and the preceding sentence, the notation X= is used. For instance, S→A means that the agent of the current sentence is co-referent with the only argument of the intransitive verb in the preceding clause, and AO= indicates the current and the preceding sentence share both their arguments. To illustrate how the system works, let us take the following example:

(30) **pɯ-ari**        **qhe tɕe li ɲó-wɣ-mbi qhe**
     AOR:DOWN-go[2]  CONJ  CONJ  again  EVD-INV-give-DU  CONJ
     'He_i went down again, and they gave her to him_i again.' (Gesar, 24)

The first verb 'to go' is intransitive and its S is coreferent with the O of the second verb 'to give'. This relation would be noted S→O. In this example, this kind of coreference appears with an inverse prefix on the verb, but we shall see below that this is not necessarily always the case.

In the examples from our database, all sentences with inverse had a non-overt argument when that argument was coreferent with any argument from the preceding sentence, except for two examples: one of the AO= and one of the S→O. In all the remaining 46 examples, we have examples of zero-anaphora constructions.

Rgyalrong languages have ergative alignment on nouns, but accusative alignment in their nominalization patterns (Sun 2003). The presence or absence of accusative or ergative pivots in other constructions has not yet been investigated in detail. If a syntactic pivot existed in Japhug in zero-anaphora constructions, we would expect the following:

1. Inverse marking should not appear if both A and O are identical with those of the preceding sentence, regardless of whether the pivot is accusative or ergative.
2. Inverse should appear if the A of the preceding sentence becomes the O.
3. In the case of S→A or S→O coreference between two sentences, we would expect inverse to appear in the S→O configuration if the pivot were accusative (S/A) and to appear in the S→A configuration if it were ergative (S/O).

As we shall see, counterexamples can be found for these three assumptions in our Rgyalrong data.

First, inverse can appear even if a preceding direct sentence has the same A and O:

(31)  lɯlu  nɯ  kɯ  ci  ko-mɟa,  ci  ɲo-mɟa  tɕe,
      cat  DET  ERG  one  EVD:EAST-take  one  EVD:WEST-take  CONJ
      ndɣre  ʁnaʁna  ʑo  chó-wɣ-ndza-ndʑi  tɕe
      CONJ  two  PART  EVD-INV-eat-DU  CONJ
      'The cat **took** (direct) one of them on the left, the other on the right, and **ate** (inverse) them both.' (The Mouse And The Sparrow, 78-79).

The inverse often appears on several verbs in a row, without indicating any change of participant:

Guillaume Jacques

(32) ndɤre  kha  to-ɕé-ndʑi  tɕe,  tɯ-ci  ɲó-wɣ-jtshi-ndʑi,
CONJ  house  EVD:UP-go-DU  CONJ  NEU-water  EVD-INV-give_to_drink-DU
tɯ-mgo  ɲó-wɣ-mbi-ndʑi  tɕe  pjó-wɣ-sɯ-rma-ndʑi
NEU-food  EVD-INV-give-DU  CONJ  EVD-INV-CAUS-live-DU
'(The two boys) went to his house, (The old man) **gave them water** (inverse) and **gave them food** (inverse), and **let them stay for the nigh**t (inverse).' (Nyima vodzer, 79).

Second, in A→O constructions, we do find inverse forms, but direct form are not unknown either, even in cases where both arguments are humans (equal on the empathy hierarchy), and therefore it cannot be argued that the absence of inverse is due to the A being higher than the O on the empathy hierarchy:

(33) "mɯ~mɤ-kɯ-tsɯm-á-nɯ  nɤ  mɤ-khám-a"
COND~NEG-2>1-take_away-1SG-PL  CONJ  NEG-NPST:give[3]-1SG
to-ti,  tɕendɤre  kɯmáqhu  tɕendɤre  to-tsɯ́m-nɯ
EVD-say  CONJ  after  CONJ  EVD:UP-take_away-PL
pjɤ-ra
EVD.IPFV-have_to
'He said « If you don't take me away with, I won't give (the skin) back », and they had no choice but to take him with them.' (The Flood, 62-3)

In such an example, we would expect the inverse to appear on the verb (a form such as *tó-wɣ-tsɯm-nɯ) if the use of the inverse were controlled by a syntactic pivot.

Third, we find examples of both inverse and direct forms in S→A and S→O configurations. Sentences (30) and (32) are examples of inverse in S→O, and here is an example with S→A:

(34) tɕe  tɤ-ɣe  tɕe  ɣɯ-ndza  pjɤ-ŋu  ri
CONJ  AOR-come[2]  CONJ  INV-NPST:eat  EVD.IPFV-be  CONJ
'(The monk) came and was about to eat (Gesar).'[16]

Although the examples above show that no syntactic pivot exists in Japhug in zero-anaphora, syntax does influence the use of the inverse. The clearest example of this is

[16] In this sentence ɣɯ- must be the inverse, not the cislocative prefix, because the verb has a non-past third person singular form and we should expect verbal stem 3 *ndze* in this context instead of stem 1 if this prefix was cislocative.

the *absence* of O→A anaphora with inverse marking (whereas a few can be found with direct marking), as can be seen from the following table:

**Table 7:** Zero-anaphora constructions in Japhug texts

| Anaphora | Inverse (49) | Direct (98) |
|---|---|---|
| **A→O** | 10 (20%) | 3 |
| **O→A** | 0 | 2 |
| **S→O** | 11-1 (22%) | 5 |
| **S→A** | 4 (-1; 8%) | 17 (-1) |
| **S→A+S→O** | 1 (-1) | 2 (-2) |
| O= | 2 (4%) | 1 |
| AO= | 12 (-1; 24%) | 13 |
| A= | 3 (6%) | 19 |
| no argument | 6 (12%) | 36 |

Clear tendencies appear from this table: if we exclude the cases where several verbs appear with the inverse in a row (example (32)), inverse forms appear mostly in A→O and S→O constructions. As for direct forms, they appear mostly in two situations: (1) the current sentence has no common argument with the preceding one; (2) the preceding sentence's A or S is coreferent with the current sentence A (a weak tendency towards accusativity).

## 4.3 Pragmatic constraints

In order to obtain cross-linguistically comparable data, it seemed better to use an existing methodology rather than devising an entirely original one. We chose Dryer's (1994) study of Kutenai inverse as a model for the present study, because he used Givón's (1983) text count methodology for a language with inverse marking in a very clear and simple way, straightforward to apply to a new language.

Dryer used five different variables in his analysis of Kutenai inverse: Overall frequency, Referential Distance, Persistence, Overt NP vs. Pronouns and Proximate shifts. Except for the last one, which requires obviative marking on nouns, all other four variables can also be calculated in Rgyalrong texts.

Unlike Dryer, we shall not include the passive forms in this study, because the Rgyalrong passive in *a-* (Jacques & Chen 2007) makes transitive verbs syntactically and morphologically intransitive and often expresses an agentless passive, and unlike the inverse prefix, belongs to the domain of derivational, rather than flexional, morphology. Besides, since an antipassive prefix also exists in Rgyalrong, it would not have been

logical to study only the passive forms without paying attention to antipassive in text counts. For a study on passive and antipassive in Japhug, see Jacques (to appear).

### 4.3.1 Overall frequency

A striking difference between inverse marking in Kutenai and Japhug is that inverse forms are much more common in Kutenai: Dryer (1994:73) counted 70 inverse forms for 295 direct ones in a sample of 503 sentences: inverses make up 19% of syntactically transitive clauses (excluding passive sentences, which were included in his sample). In the Algonquian language Ojibwa, on which he performed similar calculations, he found 16% of sentences with inverse (Dryer 1992), a figure close to the one observed in Kutenai.

We counted all transitive sentences for ten of the twelve stories in our corpus. Among these ten stories, we obtain the following results:

**Table 8:** Frequency of clause types in Japhug

| Category | Count | Percentage |
|---|---|---|
| Direct | 861 | 94% |
| *Direct* (*excluding* 'say') | *523* | *57%* |
| Inverse | 46 | 5% |
| Generic (S) | 4 | >0% |
| Generic (A) | 2 | >0% |
| Generic (O) | 4 | >0% |

Even if we exclude all sentences with the verb 'say' from the count of transitive sentences (which, as noticed above, can never have the inverse prefix), inverse forms still only account for 8% of all transitive sentences. This figure is more than twice lower than the one found in Kutenai and Ojibwa. It is all the more surprising that Kutenai passive is also very common in texts, whereas Japhug passive is even rarer than the inverse.

This result shows how different Japhug inverse marking is from Kutenai and Algonquian languages; Japhug inverse forms are considerably rarer than direct forms.

### 4.3.2 Referential distance

*Referential distance* (henceforth RD) is a text measure of topicality first proposed by Givón (1983). It indicates how many clauses back a given argument was mentioned. Following Dryer (1994:74), we only distinguish three degrees: 1 (mentioned in the previous sentence), 3 (mentioned two or three sentences back) and > 3 (mentioned

previously). An argument never mentioned before is coded as 0 (Dryer coded this kind of examples as > 3). We performed these calculations in our database, and the results can be summarized in the following table:

**Table 9:** Referential distance of A and O in inverse and direct sentences in Japhug

| RD | Inverse (A) | Inverse (O) | Direct (A) | Direct (O) |
|----|-------------|-------------|------------|------------|
| 1 | 23 (46%) | **36 (72%)** | **64** | 28 |
| 3 | 16 (32%) | 7 (14%) | 28 | 12 |
| >3 | 8 (16%) | 6 (12%) | 5 | 23 |
| 0 | 2 (4%) | 0 | 1 | 35 |
| Total | 49 | 49 | 98 | 98 |

These data present striking similarities with Dryer's (1994:75-6) findings for Kutenai:

**Table 10:** Referential distance of A and O in Kutenai

| RD | Inverse (A) | Inverse (O) | Direct (A) | Direct (O) |
|----|-------------|-------------|------------|------------|
| 1 | 46% | **80%** | **74%** | 38 |
| 3 | 9% | 17% | 15% | 14 |
| >3 | 46% | 3% | 11% | 48 |

In both languages, we find that the most frequent type of inverse clause is the one where O has a RD of 1, whereas the most frequent direct clause is the one where A has a RD of 1. This reflects the fact that, in Japhug as in Kutenai, A is most topical in direct sentences, whereas O is most topical in inverse ones.

Another way to study RD is by computing the relative RD of A and O in each of the sentences in the database. Here are our data, compared with Dryer's findings:

**Table 11:** Relative referential distance of A and O in Japhug and Kutenai

|  | Inverse (Japhug) | Direct (J) | Inverse (Kutenai) | Direct (K) |
|--|------------------|-----------|-------------------|-----------|
| RD of A lower | 8 (16%) | 58 | 13% | 53% |
| RD of A and O equal | 17 (34%) | 30 | 34% | 36% |
| RD of O lower | 24 (48%) | 10 | 37% | 34% |

We see clearly from this table that in Japhug, as in Kutenai, inverse clauses tend to have RD(O) < RD(A), whereas the reverse situation is observed in direct clauses, RD(A) < RD(O). This confirms the idea that A tends to be more topical in direct sentences and O more topical in inverse ones; unlike the previous variable, Overall frequency, the results obtained for RD are quite similar in Japhug and Kutenai.

### 4.3.3 Persistence

*Persistence* is the second measure of topicality proposed by Givón (1983) and applied to Kutenai by Dryer. This measure consists in counting the occurrences of a referent in subsequent text, rather than preceding clauses as RD.

Like Dryer (1994), we counted only two classes: X (the referent never appears again in the text, or only one or two times), Y (the referent appears at least in three sentences after the current sentence).

**Table 12:** Persistence of A and O in Japhug

| Persistence | Inverse (A) | Inverse (O) | Direct (A) | Direct (O) |
|---|---|---|---|---|
| X | 22 (45%) | 7 (15%) | 9 | 49 |
| Y | 27 (55%) | **42 (85%)** | **89** | 49 |

Here again the results obtained are quite similar to those observed in Dryer's study of Kutenai:

**Table 13:** Persistence of A and O in Kutenai

| Persistence | Inverse (A) | Inverse (O) | Direct (A) | Direct (O) |
|---|---|---|---|---|
| X | 51% | 23% | 29% | 62% |
| Y | 49% | **77%** | **71%** | 38% |

In both languages, the O of inverse clauses and the A of direct ones have a clear tendency to appear again in the text, which confirms the fact that these arguments are more topical. As with the RD, we can also compute the relative persistence of A and O:

**Table 14:** Relative persistence of A and O in Japhug and Kutenai

| | Inverse (Japhug) | Direct (J) | Inverse (Kutenai) | Direct (K) |
|---|---|---|---|---|
| Persistence of A higher | 0 | 41 | 21% | 71% |
| Persistence of A and O equal | 34 (69%) | 56 | 13% | 9% |
| Persistence of O higher | 15 (31%) | 1 | 66% | 20% |

From this table, we can observe an important difference between Japhug and Kutenai. Although the basic tendency is the same (O more persistent with inverse, A with direct), we see that persistence is more strongly correlated with the use of the inverse in Japhug than in Kutenai: we only found one example out of 98 direct sentences where O has higer persistence than A, and no example of inverse where A has higher persistence than O.

Among all text measurements, persistence is the only one which seems to provide a robust prediction for the presence or absence of inverse marking in Japhug.

### 4.3.4 Overt NP

Dryer (1994:81) proposed a fourth measure of topicality: the use of overt NPs as opposed to pronouns. In our database, we included the cases of zero anaphora with the pronouns.

**Table 15:** Overt vs. non-overt A and O in Rgyalrong

|                       | Inverse (Rgyalrong) | Direct (R) |
| --------------------- | ------------------- | ---------- |
| A and O non-overt     | 36 (72%)            | 41         |
| A overt, O non-overt  | 8 (16%)             | 6          |
| O overt, A non-overt  | 4 (8%)              | 44         |
| both overt            | 1 (2%)              | 7          |

In Japhug, only 10% of inverse sentences have O as an overt NP, and 11% of direct sentences have A as an overt NP while half of all direct sentences have overt O. This is another piece of data confirming the fact that the O of an inverse clause is more topical than its A, and inversely, that the A of a direct clause tends to be more topical than its O.

## 4.4 Summary on non-local scenarios

We have investigated in this section the topicality of A and O in direct and inverse sentences in our Japhug database, using four different criteria: frequency, RD, persistence and Overt/Zero anaphora. We found that the Japhug inverse was considerably less frequent than in other languages where inverse marking has been reported such as Kutenai and Ojibwa. However, the three other variables show results remarkably similar to those obtained in Dryer's study of Kutenai inverse. An interesting finding is that in Rgyalrong, unlike Kutenai, relative persistence of A and O is a good indicator to predict direction marking on the verb.

The three variables of RD, persistence and overt vs. non-overt marking all converge to indicate that in Japhug, as in Kutenai or Algonquian languages, the O of inverse verbs and the A of direct verbs tend to be more topical than the other argument.

# 5. Overall conclusion

In Japhug, as in other languages with inverse marking, the presence of inverse marking is primarily determined by the empathy hierarchy: when the A and the O are not equal on the empathy hierarchy, the presence or absence of the inverse marker can be easily predicted; only when both arguments are on an equal rank can syntax and pragmatics play a significant role in direction marking.

Next to semantics, pragmatics seems to be the next most relevant parameter determining the presence or absence of inverse: the relative pragmatic persistence of A and O, in particular, seems a very robust indicator to predict presence or absence of the inverse marker.

Syntax is the least informative domain to predict direction marking, because word order is often irrelevant (as most arguments are non-overt) and no strict syntactic pivot exists in zero anaphora constructions. S→A and O→A coreference relations are more commonly associated with direct verbal forms, whereas S→O and A→O coreference relations are found with inverse forms more often. However, this is just a mild tendency, and the inverse is definitely not a device to indicate that the subject (S/A) of the first sentence is coreferent to the patient of the second sentence. Another indication that direction marking is less sensitive to syntax in Rgyalrong than in other languages is the fact that unlike in Algonquian languages, possessed nouns are not automatically outranked by their possessor on the empathy hierarchy, as shown in §3.3.

As we mentioned in §4.3.1, passive and antipassive constructions were not treated in this paper. The passive *a-* prefix and the antipassive *rɤ-/sɤ-* prefixes are argument-demoting affixes, which suppress respectively the A or the O of the original transitive verb. The resulting intransitive verb ends up with an indefinite A or O argument, which cannot be overt.

These morphological devices, which are treated in Jacques (to appear), differ from the inverse not only by the fact that verbal valency is changed, but also because they belong to the domain of derivational, rather than flexional morphology. This can be shown simply when we notice the fact that the derived verbs sometimes have a meaning not related anymore to the verb from which it was derived. For instance, the transitive verb *pa* 'to close' (from proto-Rgyalrong 'to do') has a passive form which is not analyzable as such anymore in modern Japhug *a-pa* 'to become' (Jacques & Chen 2007: 902). The inverse, by contrast, belongs without doubt to the domain of flexional morphology, as no such discrepancy of meaning between direct and inverse form is observed with any verb, and because it is occurs before all derivational prefixes on the prefixal chain.

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# 茶堡嘉絨語的反向範疇

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　　猶如其他嘉絨語方言一樣，茶堡話有正向/反向範疇。雖然茶堡話反向範疇的語法功能接近廣為人知的亞爾岡京語系反向範疇，兩者之間仍然有明顯的區別，例如茶堡話有實施格而沒有近指/遠指的語法範疇。

　　本文仔細研究了茶堡話反向前綴的形態變化和語法功能。首先，本文概括地介紹茶堡話正向/反向範疇的類型特徵，專門討論這個範疇在動詞系統中的地位以及它和其他語言的正向/反向範疇在結構上的異同。其次，本文運用 Givón (1983) 的研究方法，計算並整理反向前綴在傳統故事中的出處來研究反向前綴出現的語用、語義和句法條件。最後，本文將計算出來的結果與 Dryer (1994) 對古特乃語的研究結構進行比較。

關鍵詞：反向範疇，認同等第，嘉絨語，茶堡話，摩威馬語，古特乃語，克里語，奧吉布韋語