

# Sakhalin Ainu Inferenceals as Indicators of Relative Tense

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**Abstract** This paper investigates inferential evidentiality in Sakhalin Ainu with a specific focus on the pragmatic use of inferential forms to bring out the tense reference of the predicate that is under the scope of evidentiality. It will be argued that what derives either a present or past tense reference for the scope predicate is the interplay of the telicity and aspectual values of the scope predicate itself, and the inner semantics of the inferential form used. Together with these two semantic variables, another pivotal element involved in the derivation of tense reference is the very cognitive process that is entailed by acquisition of information through inference. As it is chiefly concerned with tense and aspect, this study contributes to the description of the tense-aspect-mood-evidentiality (TAME) system of Sakhalin Ainu and Ainu more generally, which has traditionally been described as a 'tenseless' language.

**Keywords** Ainu. Sakhalin. Evidentiality. Aktionsart. Tense reference.

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## 1 Introduction

This paper presents a first revision of the analysis of inferential evidentiality in Sakhalin Ainu, an endangered unclassified (or Ainuic, Janhunen 2022) language of Russia and Japan, contained in Dal Corso 2018. Evidentiality, though often not explicitly with this name, has been surveyed to different extents in a number of dialects of the Hokkaidō

variety. The function related to source of information or the speaker's stance towards an event, which is entailed by post-verbal elements such as *ruwe ne* or *hawe ne*, was recognised as early as Kindaichi (1931), but it was Shibatani (1990, 83-4) the first to discuss these forms properly as "evidentials". More recent accounts on Ainu evidentiality include Tamura (2000), on the Saru dialect of south-western Hokkaidō, Bugaeva (2012) who notably is the first to discuss the category within Aikhenvald's (2004) typological framework. Next to Bugaeva's work that focuses on the Chitose dialect of Hokkaidō Ainu other notable accounts are Satō (2008, 178-9), again on the Saru dialect, and Takahashi (2013) on the Tokachi dialect of central-eastern Hokkaidō. Evidential expressions of Sakhalin Ainu (henceforth SA), have been surveyed less in comparison with their Hokkaidō counterparts. An account of the morphosyntax and semantics of evidentiality in Sakhalin Ainu can be found in Dal Corso (2018, 126-38, 147-55, 176-86, 236-303), which adds to previous observations and descriptions on this variety such as Murasaki (1979, 97-8) and Takahashi (2009). A large part of Dal Corso's (2018) analysis focused on inferentiality, which is the kind of evidentiality that has to do with information acquired indirectly through a sensorial stimulus or through logical reasoning based on tangible evidence (see § 3.2). The semantic analysis of SA evidentiality revealed that evidential forms pertaining to different domains within this category have specific pragmatic extensions – in the case of inferentiality, this pragmatic extension is that of specifying the present or past tense reference for the predicate under the scope of evidentiality in relation to the moment of speech or, if inferentiality is employed in folklore, to the reference narrative time. Indication of tense reference as a by-product of inferentiality is particularly relevant for a language like SA that has no formal means dedicated to marking tense, be it absolute or relative (§ 3.1). In what follows, I return on the semantics and pragmatics of inferentiality and refine the discussion of aspect and temporality through Reichenbach's (1947) Reference Tense Theory, which is employed in Dal Corso (2018), with a consideration of *Aktionsart* and telicity as in Dal Corso (2022). By presenting the case of inferential evidentiality, the main aim of this paper is to bring the focus on lexical aspect (i.e. *Aktionsart*) and its relation to relative tense, thus adding to our understanding of the still underdescribed TAME category of SA and setting the stage for more in-depth future investigations. This study only takes into account inferentiality used in narration. My reference sources are a corpus of 27 folktales collected from speakers living in four settlements on the Sakhalin east coast, published in Piłsudski (1912), and 11 folktales narrated by two speakers native of the Sakhalin west coast, originally published in Murasaki (1976) and re-edited in Dal Corso 2021 (§ 2).

The paper is organised as follows. Section 2 provides a typological profile of SA, with some notes on its dialectal subdivision and vitality

status. Section 3 presents some general information on the SA verb system, a brief overview of the morphosyntax of inferential expressions, and my assumptions with regards to *Aktionsart* and telicity. In section 4, I discuss the core semantics of inferential forms, while section 5 is dedicated to the discussion of the pragmatic use of inferentials as markers of relative tense. Section 6 concludes.

## 2 Typological Profile of Sakhalin Ainu, Dialects, and Language Vitality

The canonical word order of Ainu is *sv/AOV*. Ainu is a polysynthetic, agglutinating language, it is strongly head-marking and right-headed with a rich but largely non-productive morphology. There is no grammatical agreement of gender while number may be non-obligatorily distinguished on nouns and verbs. Ainu shows great dialectal variation, with three main varieties that are defined geographically and correspond each to the language once spoken on Hokkaidō, Sakhalin, and the Kuril Islands.<sup>1</sup> Of these three varieties only Hokkaidō Ainu survives today in some of its central-eastern and south-western dialects, which are all regarded as critically endangered. Both the Sakhalin and Kuril varieties are extinct, the last known native speaker of the former variety having died in 1994 (Murasaki 2001, 2) and the most recent record of active speakers of the latter variety dating back to the beginning of the twentieth century (Satō, Bugaeva 2019, 67-8). However, this stance towards the vitality status of SA is controversial since at least the Rayciska dialect of this variety is presently still spoken as a second (heritage) language by a number of Ainu descendants in Japan who are actively involved in its revitalisation.

Figure 1 shows the location of the four Ainu villages (Tarayka, Hunup, Ay, and Tunayci) along the Sakhalin east coast where the folktales in Piłsudski (1912) were collected and the native villages (Rayciska and Maoka) of the speakers who provided the language data on western dialects contained in Murasaki 1976 [fig. 1]. The data in the two corpora were collected roughly 60 years apart – those in Piłsudski (1912) between 1903 and 1904 and those in Murasaki (1976) between 1960 and 1971. The fast decline of language vitality that occurred for SA in this time span is evident from the informants'

<sup>1</sup> It is reported already in eighteenth century travelogs, among which Krasheninnikov (1755), that the language spoken on the southernmost islands of the Kuril chain was hardly comprehensible to the Ainu living on Paramushir and Onkotan, in the north of the chain. On the basis of linguistic evidence coming from a Kuril Ainu glossary later collected by Captain Vasily Michailovich Golovnin in 1811, Bugaeva and Satō (2021) argue that Northern Kuril Ainu and Southern Kuril Ainu were in fact two distinct dialects of the Kuril Ainu variety.

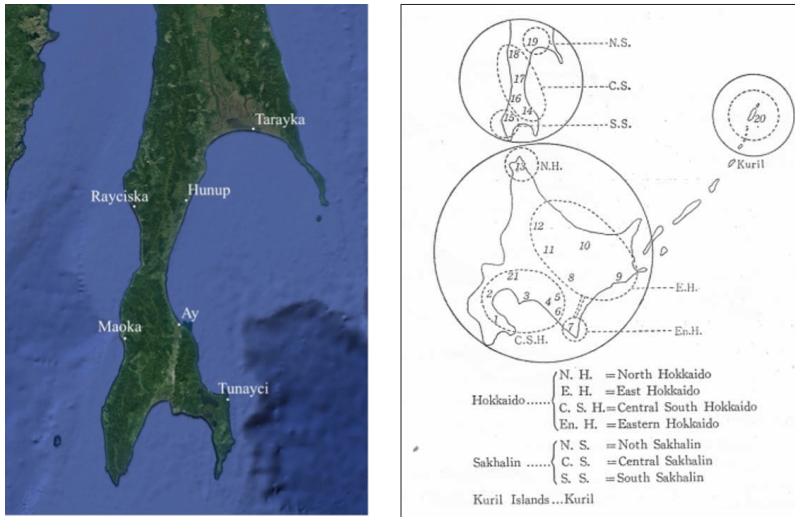


Figure 1 West Sakhalin Ainu settlements of data collection. Source: Google Earth

Figure 2 Dialectal subdivision of Ainu from Asai 1974, 100

metadata provided by the two collectors. In fact, if Piłsudski’s informants were aged 28 to 53 years old and were (for the most part) monolingual speakers of Ainu, Murasaki’s informants (Haru Fujiyama and Yuk Ōta) were both almost in their seventies at the moment of data collection and were considered to be the last native speakers of SA.<sup>2</sup> Haru Fujiyama and Yuk Ōta had also been living in Hokkaidō for a long time after being relocated there from Sakhalin following Japan’s defeat in World War Second, which resulted in their Ainu having much more influences from Japanese than what we see in the language spoken by Piłsudski’s informants.

Figure 2 shows the renowned dialectal subdivision of Ainu varieties on the basis of variations in the lexicon first proposed by Hattori and Chiri (1960) and later re-elaborated and amended in Asai (1974) and Ono (2015) among others [fig. 2]. According to this subdivision, the four dialects recorded in Piłsudski (1912) would be included in the north Sakhalin group (Tarayka) and central Sakhalin group (Hunup,

<sup>2</sup> Murasaki found out about the existence of Asai Take, who was later declared to be the last known native speaker of the Sakhalin variety, only in the 1980s.

Ay, and Tunayci), with this latter group also including the Rayciska and Maoka dialects recorded in Murasaki 1976.

The SA variety remains largely underdescribed to this day and, as research in different areas of linguistics proceeds, new parameters of comparison for the classification, which extend beyond lexicon, are provided. These new parameters may eventually prompt a revision of earlier classifications. In this study, I will operate a distinction between eastern (Tarayka, Hunup, Ay, and Tunayci) and western (Rayciska and Maoka) dialects, which is supported by the analysis of inferentiality to come. Therefore, this paper also aims at contributing to a refined classification of SA dialects beyond the differences in lexicon.

### 3 Grounding for the Analysis

#### 3.1 The Sakhalin Ainu Verb System

Like nouns (§ 2) verbs have no agreement of gender. Person agreement is marked with inflectional affixes characterised by a singular-plural formal distinction in number and three persons. SA (and Ainu in general) displays mixed nominative-accusative, tripartite, and direct morphological alignment depending on person. In addition to the canonical three persons, the language has one more set of person agreement affixes whose function is to mark shifts in participant referentiality (see Dal Corso 2023 for details). Third person or action plurality may be optionally specified via dedicated morphology (e.g. the collective suffix *-(a)hci*) or morphosyntactic processes (e.g. stem reduplication). Verbal morphology also includes a number of affixes that encode applicative, antipassive, and other valency-changing strategies, beside deixis and speaker evaluation. There is no dedicated marking for tense, but the language exhibits synthetic and analytic constructions to express mood, aspect, and evidentiality. Morphosyntactic constructions within the aspect-mood-evidentiality domain showcase different stages of grammaticalisation, which raise important (and mostly still unanswered) questions with regards to their diachronic development. Standard negation is most commonly expressed with analytic constructions and it appears more often marked synthetically via the verbal proclitic *ham* = attached directly on the negated verb in sources dating up to the early twentieth century, among which Piłsudski (1912) (Dal Corso 2020). This proclitic is diachronically present in all the negative constructions of the language.

### 3.2 Overview of the Sakhalin Ainu Evidential System with a Focus on Inferentiality

I define evidentiality in SA as a conceptual category. This definition stems from the architectural approach to cognitive processes in Levinson (2003), which is in its turn rooted in earlier studies on language and cognition by Whorf (1956) and is therefore named “neo-whorfianism” by the author himself. Levinson’s neo-whorfianism postulates a three-level structure, where primitive semantic concepts (units of the human knowledge also called ‘semantic primes’) are the grounding elements found at deep level and the formal encoding of these concepts through a linguistic output represents the third and most superficial level. Within Levinson’s architecture, conceptual categories constitute the mid level and are conceived of as unitary and cohesive groupings of primitive semantic concepts, similar or related in terms of content, that are encoded in language via a defined set of forms. How semantic primes are grouped to form semantic categories is a chiefly cultural process that mirrors the unique organisation of the semantic conceptual space in the speakers’ mind. This eventually entails that conceptual categories within this framework are to be understood as purely language-specific. This essentially denotational approach, according to which to a certain linguistic form corresponds a unitary set of semantic concepts, accounts for cross-linguistic categorial diversity in terms of semantic resemblance without necessarily entailing grammatical similarity. In the specific case of evidentiality, Levinson’s cognitive approach avoids the otherwise problematic understanding of categorial status in terms of grammaticality, adopted in typological studies such as Aikhenvald (2004), which have the major pitfall of tending to exclude from the discussion of evidentiality all those strategies that, though expressing source of information, are not fully grammaticalised. Given that most of the SA evidential forms are in fact not fully grammaticalised, such a grammaticalisation-oriented approach would easily overlook what is a cohesive and semantically pertinent domain of the language. On a theoretical basis, I keep evidentiality separate from epistemic modality, which has to do with the evaluation of a statement on the speaker’s part (de Haan 1999). The two categories may intersect, with possible limitations to their co-occurrence within the same statement due to conceptual incompatibility.

Within my framework, formally different evidential encodings are therefore considered to mirror directly conceptual subdivisions within the evidential category – that is, they define the semantic domains and subdomains of evidentiality. Dal Corso (2018) proposes that the overall organisation of the SA evidential category rests on source

reliability.<sup>3</sup> This concept has to do with how reliable a means of acquisition the speaker perceives the available source to be and should not be confused with the speaker's vouching for the truthfulness of information content, which pertains to epistemic modality. Together with inferentiality, the other two domains of evidentiality of SA are personal knowledge evidentiality (expressed via clausal nominalisation marked either via the nominaliser *-hi* or zero-nominalisation) and reportative evidentiality (which includes hearsay and quotative marked via the final particle *manu*).<sup>4</sup>

Inferentiality in SA indicates that the speaker acquires information through a sensorial stimulus (sight, hearing, touch, taste, smell, or some kind of sixth sense or 'gut feeling') or through inference based on tangible (usually visual) evidence.<sup>5</sup> That is, in the case of inferentiality sensory perceptions always mediate the acquisition of information. Conceptually speaking, inferential evidentiality is distinguished into four subdomains according to the kind of stimulus involved in information acquisition, with this distinction being expressed formally. Table 1 summarises the four inferential forms and their attested phonological alloforms. The evidential function of each form is also given in the table and is illustrated by the examples below. I will return in detail on the inner semantics of inferential forms in § 4.

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**3** Different levels of reliability are encoded into language with different formal means. Clausal nominalisation, marked either via the nominaliser *-hi* or zero-nominalisation, is used to mark personal knowledge evidentiality, the most reliable kind of evidentiality. Inferentiality follows, with forms entailing a visual source (i.e. *ruwehe an* and *sirihhi an*) found to encode higher reliability than forms entailing a non-visual source (i.e. *humihhi an* and *hawehe an*). Within these two subgroups of evidentiality, a further distinction in reliability is made according to whether the stimulus is processed (as with *ruwehe an* and *humihhi an*) or not (as with *sirihhi an* and *hawehe an*) (see Table 1 below). The organisation of inferential forms according to reliability is therefore *ruwehe an* > *sirihhi an* > *humihhi an* > *hawehe an*. Finally, reportative evidentiality is the least reliable kind of evidentiality, encoded by the final particle *manu*.

**4** As to not widen too much the scope of the investigation, Dal Corso (2018) intentionally excludes from the analysis all lexical expressions of evidentiality attested in SA, which still remain to be addressed.

**5** SA inferentiality loosely corresponds to the "inferred" type discussed by Aikhenvald (2004, 373), with some important exceptions: 1) Aikhenvald's label does not entail any difference in the sensorial stimulus at the basis of inference and 2) reasoning in the case of SA is always based on sensorial (namely, visual) evidence. Therefore, the term as used here unites characteristics that Aikhenvald (2004, 63) recognises proper of "inference" and "assumption". The same distinction is also argued for by Willett (1988), who separates "result" from "reasoning" within the domain of inferring evidentials.

**Table 1** SA inferential forms<sup>6</sup>

<b>main form</b>	<b>alloforms</b>	<b>function</b>
<i>ruwehe an</i>	<i>ruhe an, ruuhe an, tuhe an</i>	Inference through reasoning based on a processed visual stimulus
<i>sirihi an</i>	<i>sirhi an</i>	Inference based on an unprocessed visual stimulus
<i>humihi an</i>	<i>humhi an, umhi an, humorokehe an</i>	Inference based on a processed tactile, gustative, auditive stimulus, or ‘gut-feeling’ sensation
<i>hawehe an</i>	<i>hawhe an, hauhe an, haorokehe an</i>	Inference based on an unprocessed auditive stimulus

<sup>6</sup> The evidential *ruhe ne* (< \**ruw-he ne* trace-POSS COP), not included in this table, appears a couple of times in the idiolect of an informant from the village of Tunayci. This form resembles the evidential *ruwe ne/ru ne* attested in many Hokkaidō dialects and its presence in the SA corpus is most probably to be ascribed to the fact that this informant had spent a long time in Hokkaidō (Piłsudski 1912, 191).

(1)	<i>Nii</i> tree	<i>kayki</i> even	[...]	<i>kehke-wa</i> 3S.A/3P.O/break-CVB.SIM	<i>cokoko-wa isam</i> 3S.A/3P.O/fell-CNCL	<b><i>ruwehe 'an.</i></b> <b>INF.RSN</b>
<p>'[The monster] must have ended up breaking and felling even the trees.' (Murasaki 1976, 99; Dal Corso 2021, 396)</p> <p>[Context: The speaker cuts open the belly of a monster from the inside, after having been swallowed whole. Once he gets out, he notices how the surroundings look after the monster has been squirming during their fight. Processing through reasoning of this visual stimulus provides the basis for making an inference.]</p>						
(2)	<i>Tuhso</i> cave	<i>nee-no</i> COP-ADV	<i>'an</i> 3S.S/exist.PC	<i>puy</i> hole	<i>ahun</i> 3S.S/open.PC	<b><i>sirih'i 'an.</i></b> <b>INF.VIS</b>
<p>'It seemed a hole like a cave opened [in the mountain side].' (Murasaki 1976, 95; Dal Corso 2021, 389)</p> <p>[Context: The sentence is uttered by the speaker as he climbs a mountain and gets closer to the dwelling of the monster he is going to kill.]</p>						
(3)	<i>Soy-ta</i> 3S.O/outside-LOC	<i>asin</i> 3S.S/go.out.PC.NMLZ	<i>tura-no</i> 3S.O/together-ADV	<i>oponi</i> 3S.O/from.behind		<b><i>humhi an.</i></b> <b>INF.FLT</b>
<p>'While going outside, it seemed a person came out behind him.' (Piłsudski 1912, 100)</p> <p>[Context: After turning his back to an evil spirit to escape from it, the speaker feels a presence following him out of the house.]</p>						
(4)	<i>Ta</i> that	<i>ohacisuye</i> empty.house.spirit	<i>seta</i> dog	<i>humpa</i> 3S.A/3P.O/crush	<b><i>hauhe an.</i></b> <b>INF.HRN</b>	
<p>'It seemed that that empty-house-spirit killed the dogs crushing them.' (Piłsudski 1912, 79)</p> <p>[Context: Escaping from his control, the speaker's dogs enter a house possessed by an evil spirit. The speaker hears from the outside the dogs barking and howling as the spirit kills them.]</p>						

Inferential forms follow the predicate over which they have semantic scope and they all have developed from a noun-verb phrase, whose nominal element semantically pertains to the domain of sensorial perceptions or physical manifestations – *ruu* (<*ruw\**><sup>7</sup> 'trace, path', *siri* 'appearance, looks', *hum* 'sound', and *haw* 'voice'. These nouns appear in the possessive form, which is obtained with the addition of the suffix *-(i)hi*. The underlying vowel *i* in the suffix, as well as the optional epenthetic vowel added before *h* on consonant-final stems, respond to vowel harmony (Dal Corso 2021, 31-7).<sup>8</sup> The verbal element within inferential forms is always the intransitive paucal verb *an* 'exist'. In most instances, inferential forms exhibit unitary stress (i.e. they constitute a unitary phonological word), which may be taken as

<sup>7</sup> I argue that the underlying form of this noun root is *ruw\**, in contrast with Tangiku (2022, 335). The segment *uw\**, not allowed as the rhyme by SA phonotactic rules (Murasaki 1979, 4), is resolved in the non-possessive form with the assimilation of *w* to the preceding vowel, which results in a long *u* (i.e. *ruu*). The assumption of *ruw\** as the underlying form is supported by the fact that the vowel(s) in the possessive suffix is realised as *e*, which is a prerogative of stems ending in an approximant (i.e. either *y* or *w* in Ainu) – restoration of the underlying *w* is possible in the possessive form thanks to re-syllabification from the mono-syllabic *ruw\** to *ru.we.he*, which avoids *uw\** as the rhyme.

<sup>8</sup> On the alloforms *humorohe an* and *haorohe an* [tab. 1] the vowel harmonises not with the vowel of the nouns *hum* and *haw* but with that of the locative noun *oro* 'place' (in its partitive form *oroke*) that follows it. The semantic contribution of *oro* to the inferential expression in these instances is not clear.



(2005). Depending on the context, a single verb can therefore be assigned to different *Aktionsarten*. Each *Aktionsart* class is also assumed to naturally head either a telic or atelic predicate, as postulated by Vendler (1967), with semelfactives (absent in the Vendlerian classification but included in van Lambalgen, Hamm 2005) heading telic predicates (Rothstein 2004, 185). This assumption eventually makes telicity a defining feature of *Aktionsarten*. Predicate telicity, on the other hand, is determined on the basis of the incrementality properties of the patient-like argument<sup>10</sup> (PLA) and on the presence of a natural culmination for the event depicted by the predicate in relation to the PLA. For the present purpose, the existence of a verb argument that is incremental with regards to its atomic composition is established on whether some of the argument's (sub-)parts may not undergo the event without compromising the truth conditions of the event itself. Consider (7) and (8).

- (7) *Neera* 'an\_-pe *ne*  
**how** **3p.s/exist.pc-thing** COP  
*[y]ahka cinke-\_utara-'oro-wa nu-hci.*  
 though ancestor-COLL-place-ABL/ELA 3S.A/3P.O/hear-COLL  
 'She [had] heard whatever kind of things (= tales) from the ancestors.' (Murasaki 1976, 38; Dal Corso 2021, 304)

- (8) *Kotan* 'e-sis 'aynu emuyke 'isam.  
 village APPL-3S.A/3P.O/be.full **person all** 3P.S/not.exist  
 'The people who filled up the village all died.' (Murasaki 1976, 12; Dal Corso 2021, 242-3)

In (7) the PLA *-pe* 'things', here referring to folklore tales narrated by ancestors, is incremental in the sense that, at any point of the listening event, there may be parts of a tale or full tales the subject 'she' may have not heard and yet the event 'hear tales' would subsist. On the contrary, there cannot be sub-parts of the PLA 'aynu emuyke 'all people' in (8) that may not undergo the event of dying without compromising the truth conditions of the event 'all people died', which would subsequently become false. That is, 'aynu emuyke is not an incremental argument. As for natural culmination, I understand it as a minimal change of state associated with the endpoint of an event (Rothstein 2004, 105). Again, in (7) even once the incremental argument has been 'used up' and the event cannot continue further or be

<sup>10</sup> The patient-like argument in Dal Corso (2022) is essentially analogous to Dowty's (1991) incremental theme, but it also includes the s argument of intransitive verbs with patient-like thematic functions, primarily that of experiencer.

reiterated, there is no change of state that concerns the PLA ‘tales’, so the event has no culmination. Example (8) presents a different situation, where the culmination of the event coincides with a change of state for the PLA (i.e. ‘all the people’ being now dead). The features of incrementality and event culmination correspond to two of the four defining elements of *Aktionsart* classes that are postulated by Lambalgen and Hamm (2005, 88-90), respectively referred to as  $f_2$  (a fluent) and  $e$  in their discussion. As a result, this treatment of incremental arguments and culminations allows us to include SA predicates into van Lambalgen and Hamm’s categorisation of *Aktionsarten* and assign them to a specific class.

One limitation of the analysis in Dal Corso (2022) is that it does not specify the values for the other two fluents  $f_1$  and  $f_3$  that constitute the contour of *Aktionsarten*, so that those classes whose  $f_2$  and  $e$  values are identical turn out to be indistinguishable (e.g. states and activities (strict)). Table 2 resumes the *Aktionsart* classes of SA predicates and their corresponding telicity values.

**Table 2** *Aktionsart* classes of SA predicates, adapted from Dal Corso (2022, 70)

	$f_2$	$e$	telicity
States			
Activities (strict)	-	-	atelic
Activities (wide)	+	-	
Accomplishments	+	+	
Achievements		+	telic
Semelfactives	-	+	

## 4 The Semantics of Inferential Forms

### 4.1 Ontological Status of the Sensorial Source

As it was discussed in § 3.2, inferential forms of SA developed from a noun-verb phrase that features a noun in the possessive form and the intransitive paucal verb *an* ‘exist’. The four nouns that appear within inferential forms semantically pertain to the domain of sensorial perceptions or physical manifestations – *ruu* (<\**ruw*) ‘trace, path’, *siri* ‘appearance, looks’, *hum* ‘sound’, and *haw* ‘voice’. In the remainder of the analysis, I will refer to these nouns as ‘sensorial nouns’. Since inferential expressions are structurally recognisable as possessive constructions, they can be translated literally as “there exists the trace/appearance/sound/voice of  $e$ ” (where  $e$  stands for the inferred event expressed by the scope predicate). Example (1), repeated here as (9), can then be rendered as follows (see also (6) in § 3.2).

- (9) *Nii kayki [...] kehke-wa cokoko-wa isam ruwehe 'an.*  
 Tree even 3S.A/3P.O/break-CVB.SIM 3S.A/3P.O/fell-CNCL **INF.RSN**  
 lit.: 'There was the trace of [the monster] having ended up breaking and felling  
 even the trees.' (Murasaki 1976, 99; Dal Corso 2021, 396)

This part-whole relation between the sensorial noun and the scope predicate, marked as a possessive construction, is nothing but a formal representation of the logical dependency that subsists between information source and information content. Since inferentiality as intended in SA (§ 1) entails that a sensorial stimulus be present in order to access the content of information, we must assume whatever kind of perception be expressed by the sensorial noun to be tightly dependent on an event. For instance, in the case of inferentiality expressed via *humihī an*, the sound (*hum*) that is available (*an*) to the speaker to make their inference must somehow be linked to an event that originated it. It is, therefore, easy to realise that there is a crucial contrast in the existential properties of the stimuli subsumed by the different sensorial nouns. In order to capture this contrast we need to distinguish between *siri* 'appearance', *hum* 'sound', and *haw* 'voice', on the one hand, and *ruu* 'trace' on the other hand. With regard to the former three forms, we can say that, as long as the event (or the circumstances in which the event takes place) is preserved, the 'looks', 'sound', or 'voice' that is the source to access it also subsists. However, the moment this event (or the relative circumstances) ceases to exist, the 'looks', 'sound', or 'voice' linked to it are bound to end as well. In other words, taking again the form *humihī an* as an example, there can be no perceivable sound of something if that something does not exist any more. A different situation stands for *ruu*. Again we can assert that, as long as the event (or its circumstances) is preserved, the 'trace' that is connected to it also subsists, and so in this sense *ruu* is no different from the other three sensorial nouns. However, differently from what holds true for 'looks', 'sound', or 'voice', the 'trace' contingent upon an event can still hold even when the event ends. That is to say that *ruwehe an* may indicate that there is still a (visible) trace of a concluded event, which allows the speaker to infer that event from its resultant state. Therefore, what separates *ruu* from the other sensorial nouns is the ontological status of the stimulus it subsumes - the physical endurance of the stimuli entailed by *siri*, *hum*, and *haw* is intrinsically dependent on the presence of a contingent event, while that entailed by *ruu* has its own independency.

## 4.2 The Aspectual Contour of *an*

In order to conclude my consideration of the inner semantics of inferential forms, I briefly address the telicity value of the verb *an* ‘exist’. As an intransitive verb, *an* has only a single argument that can be analysed as the  $\text{PLA}$  – the possessee sensorial noun (see § 3.2). The sensorial perception entailed by any of the four sensorial nouns subsists at any point of the *existing* event and cannot disappear or be partially involved without compromising the truth conditions of said event. This means that the  $\text{PLA}$  is not incremental. Also, the event of *existing* does not entail any change for the  $\text{PLA}$ , which in its turn indicates that the event has no culmination. According to my understanding of *Aktionsart* and telicity (§ 3.3), *an* classifies as an atelic predicate which can be either a state or an activity in the strict sense.

## 5 Inferentiality Beyond Source of Information

In this section, I move on to discussing the derivation of relative tense for the predicate under the scope of inferentiality. The two pivotal features in the derivation are the ontological status of the source through which information is accessed (§ 4.2) and the telicity value of the scope predicate (§ 3.3). Another crucial element is the very cognitive process entailed by acquisition of information through inference (see below).

In order to systematically derive the scope predicate’s reference tense, I rely on Reichenbach’s (1947) Reference Tense Theory (RTT), according to which the relative tense of a predicate can be determined on the temporal relation existing among the event depicted by the predicate, a reference time, and the moment of speech. Reichenbach refers to the three moments in time that he postulates as  $E$ ,  $R$ , and  $s$  respectively. When schematising the various types of reference tense, Reichenbach employs a comma to indicate temporal concomitance or an underscore to indicate temporal non-concomitance among these three moments; the same symbols will be used here. When non-concomitant, the chronological succession of  $E$ ,  $R$ , and  $s$  is mirrored by their linear order. The application of the RTT in this study rests on a process of analogy by which I compare the three fundamental components of information acquisition through inferentiality to Reichenbach’s three moments in time. First, the content of information, represented by the scope predicate, corresponds to  $E$ . Second, the sensorial stimulus corresponds to  $R$ , in that the stimulus at the base of inference is the gateway through which the speaker accesses the content of information. Third, the moment in which the speaker perceives the sensorial stimulus that allows access to information corresponds to  $s$ . A clarification is necessary at this point. Although it is beyond doubt that speaking takes time and that, therefore, the moment of speech should

be conceived more as an *interval* than an *instant* (Desclés 2016, 44-5), for the case at hand I will be concerned only with the instant of perception of the sensorial stimulus. This instant coincides with the first instant (or also the left temporal boundary) of the speech act interval during which the speaker utters the inferential statement.

The next step is to assume a fixed ordering relation for the three moments in time, which logically follows from the cognitive process subsumed by acquisition of information through inference. In fact, inferentiality requires a sensorial stimulus to either coexist with or follow chronologically the event that it represents the source of (see discussion on stimulus ontology in § 4.1), since there cannot be perception of a yet non-actualised event. This anteriority relation of  $E$  to  $R$  can be preliminarily formalised as  $E \geq R$ . Also, the pertinence of an inferential statement is dependent on the presence of both an inferable event and a sensorial evidence necessary to access it. Since it would be impossible to utter an inferential statement about an event that has yet to occur or to assume *a priori* the presence of a sensorial source connected to a non-actualised event, the moment of speech may never come before the event has happened. Therefore, we derive  $E-R \geq S$ . When we collate these two relations of logical dependency into Reichenbach's RTT, the result is a relation of posteriority by which  $E$  precedes  $R$  that precedes  $S$  (or  $E \geq R \geq S$ ).

Next we need to establish whether there is temporal concomitance among  $E$ ,  $R$ , and  $S$ . On a theoretical basis, we can easily argue for the overlapping of  $R$  and  $S$  since, if no stimulus were available at the moment of speech (i.e. the instant of stimulus perception), there would be no basis for any inference. From this we derive the contemporaneity relation  $R,S$ . A first step towards determining the temporal relation between  $E$  and  $R,S$  is to consider the ontological status of the source. In § 4.1, we saw how the sensorial stimulus entailed by *sirihi an*, *humih an*, and *hawehe an* is contingent upon a perceivable event. When we translate this dependency into the RTT, we once again obtain a contemporaneity relation (i.e.  $E,R$ ). Derivation of relative tense for a predicate under the scope of *sirihi an*, *humih an*, or *hawehe an* then follows naturally – concomitance of all three moments in time (i.e.  $E,R,S$ ) corresponds in fact to a present tense reference. The scope predicate's telicity becomes irrelevant in this instance, the only difference between atelic and telic predicates being that in the former case the instant of stimulus perception ( $s_0$ ) is included within the event's time interval ( $e$ ), while in the former case  $s_0$  coincides with the event's final instant (i.e. its culmination,  $e_{cul}$ ). Concomitance of the event's culmination with the instant of perception is necessary to ensure speaker's access to the content of information encoded by the telic event. Example (10), featuring the atelic event of 'an evil spirit killing the dogs', and (11), featuring the telic event of 'a person exiting a house', provide an illustration of both cases [figs 3-4].

- (10) *Ta ohacisuye seta humpa hauhe an.*  
 that empty.house.spirit dog 3S.A/3P.O/crush **INF.HRN**  
 ‘It seemed that that empty-house-spirit killed the dogs crushing them.’  
 (Pitsudski 1912, 79)

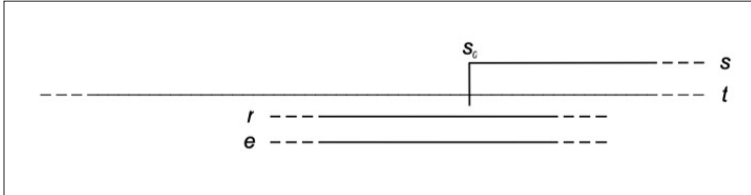


Figure 3 Temporality of *hauhe an* with atelic predicate

- (11) *Soy-ta asin tura-no oponi humhi an.*  
 3/outside-LOC 3S.S/go.out.PC.NMLZ 3S.O/together-ADV 3S.O/from.behind  
*ayn[u] asin humhi an.*  
 person 3S.S/go.out.PC **INF.FLT**  
 ‘While going outside, it seemed a person came out behind him.’ (Pitsudski 1912, 100)

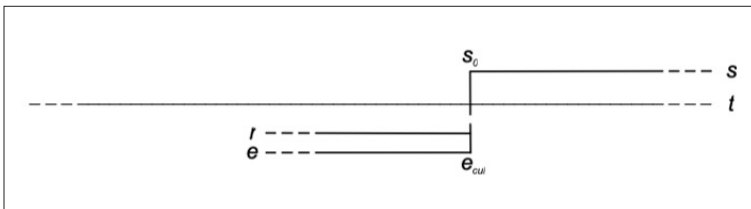


Figure 4 Temporality of *humhi an* with telic predicate

On the contrary, the particular ontological status of the sensorial stimulus subsumed by *ruwehe an* can entail either concomitance or non-concomitance of  $E$  and  $R$ . The discriminant in this case is the scope predicate’s telicity. With an atelic predicate, the instant of perception is included within the event’s time interval  $e$ , which means that the speaker makes their inference on the basis of a presently unravelling event - in (12) that of ‘a box being present’. Therefore, the derivation of relative tense has the same outcome as above, with concomitance of  $E, R, S$  indicating a present tense reference.

- (12) *Tan husko karauto an ruhe an.*  
 this be.old box 3S.S/exist.PC **INF.RSN**  
 ‘There was this old box.’ (Pitsudski 1912, 200)

With a telic predicate, the instant of perception is included within the time interval  $r$ , during which the sensorial stimulus subsists, that includes both the event’s time interval  $e$  and its subsequent phase (i.e. the resultant state). Therefore, here inference is made on the basis of the perceivable (visual) trace of an already concluded event. In (13) the telicity of ‘breaking and felling the trees’ is further underlined by the presence of the (optional) conclusive aspect *-wa isam*. Provided the fixed ordering  $E \geq R \geq S$  discussed above, the non-concomitance of  $E$  with  $R, S$  derives a past tense reference, formalised in Reichenbach’s RTT as  $E_{-R,S}$  [fig. 5].

- (13) *Nii kayki [...] kehke-wa cokoko-wa isam ruwehe an.*  
 tree even 3S.A/3P.O/break-CVB.SIM 3S.A/3P.O/fell-CNCL **INF.RSN**  
 ‘[The monster] must have ended up breaking and felling even the trees.’  
 (Murasaki 1976, 99; Dal Corso 2021, 396)

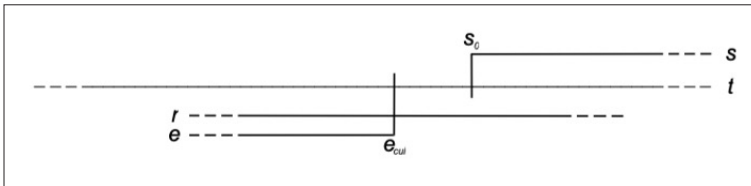


Figure 5 Temporality of *ruwehe an* with telic predicate

As a way to conclude this, I argue that the use of inferential forms provides systematic indication of tense reference for the scope predicate with respect to the temporal time frame of narration. This derivation is semantically determined and results in a relative present tense for predicates headed by *sirihī an*, *humihī an*, or *hawehe an*, regardless of telicity, and for atelic predicates headed by *ruwehe an*, while it results in a relative past tense for telic predicates headed by *ruwehe an*. Similar observations regarding the correlation between evidential form and reference tense have been made by Satō (2008, 178-9), with respect to *ruwe ne* and *siri ne* in south-western Hokkaidō Ainu, and by Takahasi (2013), with respect to *ru ne* and *sir ne* in the Tokachi dialect of central-eastern Hokkaidō. However, both studies argue for a one-to-one correspondence, according to which a present tense reference is always borne out by the use of *sir*-based forms while a past tense reference is always borne out by the use of *ruw*\*-based forms. While the first half of this conclusion

applies to SA as well, I have shown that telicity is decisive in specifying the either present or past tense reference with *ruwehe an*, for which therefore I do not recognise a one-to-one correspondence between form and reference tense. Table 3 summarises the steps and outcomes of the derivation.

**Table 3** Derivation of relative tense

Form	Superimposed E-R-s relations	Stimulus ontology	Scope predicate telicity	E-R-S concomitance	Relative tense
<i>ruwehe an</i> <b>INF.RSN</b>		<b>E_R / E,R</b>	telic atelic	<b>E_R,S</b>	past
<i>sirihi an</i> <b>INF.VIS</b>	<b>E &gt; R &gt; S</b>				
<i>humih an</i> <b>INF.FLT</b>	<b>R,S</b>	<b>E,R</b>	(irrelevant)	<b>E,R,S</b>	present
<i>hawehe an</i> <b>INF.HRN</b>					

## 6 Conclusions

In this paper I focused on inferential expressions in narration and on the indication of relative tense for the predicate under the scope of evidentiality as a byproduct of the use of inferential forms. Derivation of either a present or past tense reference is determined on a semantic and cognitive basis, by taking into account the inner semantics of inferential forms, the lexical contour of the scope predicate itself, and the phases that characterise the process of information acquisition through inference, and it is formalised within the framework of Reichenbach's (1947) Reference Tense Theory. As a study that deals primarily with tense and aspect, my analysis of SA inferentials adds to the still few investigations made on the tense-aspect-mood domain of the language and aims at providing a starting point for future more comprehensive research on this topic and on verbal and nominal semantics more generally.

## Abbreviations

3	third person
3P	third person plural
3S	third person singular
A	subject of transitive verb
ABL/ELA	ablative/relative
ADV	adverbial
APPL	applicative
CNCL	conclusive aspect
COLL	collective
COP	copula
CVB.SIM	simultaneous temporal converb
INF.FLT	non-visual inferential
INF.HRN	auditive inferential
INF.RSN	reasoning inferential
INF.VIS	visual inferential
INTS	intensive
LOC	locative
NMLZ	nominaliser
O	object
PC	paucal
PL	plural
POSS	possessive
PRM	participant referentiality mismatch agreement
PSR	possessor
PTV	partitive
S	subject of intransitive verb

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