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18 Evidentiality in Northern Asia

Abstract: Evidentiality – or grammaticalized encoding of information source – is a feature of many languages of Northern Asia. Our overview of evidential systems across the region focuses on the values of evidential terms and their distribution across language families and contact zones in the Altaic areal grouping, with a focus on Siberian Turkic, Tungusic, and North Mongolic, the Uralic family (Ob-Ugric and Samoyedic), a number of isolates – Ket as the only extant representative of the Yeniseian family, Yukaghir and Nivkh, and the languages of the eastern periphery of the region (Chukotko-Kamchatkan and Eskaleut). In most languages, the expression of evidentiality tends to be restricted to past tense and/or perfectives and resultatives. Newly developed forms tend not to have these restrictions. Turkic, Tungusic, and Mongolic have two or three evidentials (neutral and indirect, or neutral, direct, and indirect). Additional evidential values may develop on the basis of periphrastic forms. A further reported evidential tends to evolve via grammaticalization of speech verbs. Small systems with two choices (firsthand versus nonfirsthand) are a feature of Yukaghir, Aleut, and possibly Chukchi, Koryak, and Alutor, from the Chukotko-Kamchatkan family. Within the Uralic family, evidential systems in Samoyedic languages are the most complex. Elaborate evidentials in Nivkh are falling out of use, due to language obsolescence.

18.1 Evidentiality in Northern Asia: setting the scene

Evidentiality – or grammaticalized encoding of information source – is a feature of many languages of Northern Asia (see Aikhenvald 2004, 2014, 2018a and references there, on cross-linguistic features of evidentiality). Our overview of evidential systems across the region focuses on the values of evidential terms, their pathways of development, and their distribution across language families and contact zones.

The language groups discussed are:

(i) Altaic[1] with a focus on Siberian Turkic, Tungusic, and North Mongolic – § 18.2;
(ii) the Uralic family, with a focus on Ob-Ugric and Samoyedic – § 18.3; and

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1 See Schönig 2003 and Jankowski 2013 on the Altaic controversy, i. e. a genetic or an areal approach to a comparative study of "Altaic" languages; see Johanson and Robbeets 2009: 1–2 on the recent concept and term "Transeurasian" and its critique in Georg 2013.

(iii) isolates – Ket as the only extant representative of the Yeniseian family, Yukaghir, and Nivkh, with a brief foray into the languages of the eastern periphery, Chukotko-Kamchatkan and Eskimo-Aleut – § 18.4.

Japonic, Korean, and Ainu lie outside our purview here.

In addition to grammaticalized evidentiality, we address recurrent evidentiality strategies, that is, evidential extensions of non-evidential categories. Across the languages of Northern Asia, these are typical for perfective and resultative forms. Reinterpretation of these forms often leads to the development of dedicated evidential paradigms (see the discussion of these and other mechanisms in Aikhenvald 2018a, 2021a,b, and references there).

Across the region, evidential and mirative distinctions tend to develop on the basis of "finitization" of erstwhile non-finite forms, with participles and converbs acquiring the status of main clause predicates.[2] Within a periphrastic construction, attrition and loss of an auxiliary may result in the emergence of a special evidential form. A further pathway involves reinterpretation of participles, originally used as modifiers with head nouns meaning 'speech' or 'sound'. As a consequence of grammaticalization of an erstwhile head noun into particles or affixes, and concomitant phonological depletion, a participle may develop into a bona fide evidential.[3]

Mirativity – grammaticalized expression of speaker's surprise, lack of expectation of knowledge, and unprepared mind (DeLancey 1997, 2001, 2012; Aikhenvald 2012) – is a pervasive feature of the region. In some languages, it is integrated within an evidential system. In others, mirativity acquires its own, autonomous, expression (sometimes restricting the use of evidentiality). This issue is of special import for "mirativity-dominant" Ob-Ugric languages (see § 18.3.1).

Our discussion is confined to clausal, or propositional, evidentiality in declarative clauses. So far, no instances of evidentiality with noun phrase scope (or non-propositional evidentiality (see Jacques 2018) have been described for the region. Along similar lines, egophoric distinctions – reflecting privileged access to knowledge – appear to be

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2 See Robbeets 2015: 330–5, 2016: 210 and Malchukov 2013. The processes (which may apply to numerous verbal categories, including evidentials) typically involve reduction of the matrix predicate to an affix, loss of a copula associated with a non-verbal predicate, reinterpretation of a dependent clause as a main clause, and concomitant direct reanalysis of a non-finite form as finite. Desubordination, or reinterpretation of an erstwhile dependent clause as a main clause in the development of evidential systems was addressed by Campbell (1991) for Estonian; see also Friedman 2018, and Aikhenvald 2004: 281–3, 2021b. Similar developments were addressed by Evans (2007: 367) under the term "insubordination" (see Aikhenvald 2010, 2015, on the terminology).

3 This is reminiscent of the concept of a "mermaid construction" introduced by Tsunoda (2013: 39, 2020) as a metaphor for grammaticalization of a head noun within an erstwhile adnominal clause. Both grammaticalization and reinterpretation tend to take place in a "general noun-modifying construction" (GNMC) (Matsumoto et al. 2017: 5). The principles of grammaticalization and concomitant phonological reduction are in line with Kuteva et al. 2019.

atypical (see Brosig & Skribnik 2018: 574–577 on the contact-induced development of egophoricity in Southern Mongolic varieties, including Mangghuer).

A further common thread runs across most minority languages of Northern Asia. As pointed out by numerous scholars (including Krauss 1997 and Vaxtin 2001), an overwhelming number of languages are no longer spoken by all generations. The twentieth century has seen the extinction of at least a dozen languages in the region. The processes of language obsolescence have resulted in a drastic reduction of evidentiality and related categories absent from dominant national languages, especially Russian. The loss of evidential distinctions in Udihe, a Tungusic language (Girfanova 2002, 2009) is a telling example (§ 18.2.2.2). The system of evidentials in the moribund Nivkh can only be "reconstructed" based on older sources; see Gruzdeva 2021, Krejnovič 1979, Aikhenvald 2004: 299–302, on the impact of language obsolescence on evidential systems. As traditional narrative genres and ways of saying things fall into disuse, so do the evidentials specific to each genre. In all likelihood, some of the evidential systems discussed here have undergone depletion and reduction in the frequency of their use. The impact of language obsolescence on evidential systems in the region is a matter for further in-depth study.[4]

18.2 Altaic languages

The term "Altaic" (family or Sprachbund) encompasses Turkic, Mongolic, and Tungusic languages. In all three language families, evidentials form part of TAM systems. Evidentiality tends to be distinguished in past tense only (in agreement with dependencies in Aikhenvald 2021a: 84–109), with some exceptions. TAM systems typically include "evidentially neutral" form(s) (used if the speaker does not wish to specify the information source).

For each family, we will offer a detailed discussion for one or two representative languages. Comparative notes on other sister languages will be added as appropriate.

18.2.1 Turkic family

A common feature of Turkic languages is the existence of a catch-all form reflecting different kinds of indirect information source (Johanson 2000). This form, labelled "indi-

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4 This chapter is largely based on existing sources and reflects the state-of-the art of the studies for most languages under discussion. For a number of languages, the lack of comprehensive descriptions and flaws in data and its analysis create additional problems warranting further in-depth investigations. All examples are given in the transcription of the sources; our own materials from languages with official Cyrillic orthography have been straightforwardly transliterated.

rective", covers the meanings of reportative, or hearsay, and inference and assumption. "Indirectivity" is often expressed by participles in finite use, "vacillating between evidential and non-evidential meanings" (Johanson 2018: 512). The source forms involve predominantly perfective and resultative – along the lines of the "pan-Eurasian evidential perfect" (see Haarmann 1970, Aikhenvald 2004: 112–115).

An overwhelming majority of languages distinguish the neutral past (a finite form marked with *-DI* and its allomorphs) and indirective past (past participle in finite use, i. e. a verb marked with *-GAN* or *-MIš* and their allomorphs). This basic opposition was already in place in Old Turkic.[5] In a number of languages, the system further expanded by a variety of periphrastic forms. These included constructions with auxiliaries *är-* 'be' and *tur-* 'stand'. The auxiliary *är-* further grammaticalized into a series of particles with evidential or mirative meanings, e. g. *ä(r)-gän* 'as it turns/turned out'. The auxiliary *tur-* grammaticalized to indirective clitics and suffixes of the type *-PtIr*, *-TIr*, used in combination with the converbal suffix on the lexical verb (*-B tur-*) (Johanson 2000: 72–3, 2018: 515–517, cf. Kononov 1980: 3).

Additional constructions, developed in modern Turkic languages, include reported evidential particles grammaticalized on the basis of speech verbs (see for instance Greed 2014 on Tatar; more on this in Johanson 2021). A newly developed specialized mirativity strategy involves desubordinated complement clauses with a participle in the predicate slot marked with an accusative suffix. This is a feature of Siberian Turkic, including Sakha (or Yakut), Altay-kiži, Tuvan (Tybykova 1991: 189–193), and Shor (Nevskaya 2002). An example appears in (1):

(1) Altay-kiži (Tybykova 1991: 191)
　　 Altay-ïs-tïŋ　　　　　d'aran-gan-ïn!
　　 Altay-POSS1pl-GEN　　get.beautiful-PTCP.PST-POSS3:ACC
　　 'How beautiful our Altay has become!'

These highly emphatic constructions express speaker's surprise or strong emotional reaction to unexpected stimuli. Their development may be due to the ellipsis of the verbs 'see' and 'hear' (Ubryatova 1950: 257; 1976: 248 f.; Nevskaya 2002).

The literature on evidentials in South and North Siberian Turkic is quite extensive. In contrast, little is known about West Siberian Turkic (including several varieties known as Siberian Tatars). All of these appear to belong to "a Turkic "indirective belt", which has exerted influence on many neighbouring languages due to intensive contacts" (Johanson 2000: 83). We now turn to a few South and North Siberian Turkic evidential systems, for which comprehensive descriptions are available.

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5 This was also described as "constative preterite" vs. "inferential preterite" (Erdal 2004: 265, 268, 272), or as direct evidence vs. indirective or as neutral past vs. perfect (Isxakova et al. 2007: 474).

18.2.1.1 South Siberian Turkic

The Turkic languages of the Altay-Sayan highlands have a complex contact history (Schönig 1997). The Turkicization of this region must have started in the second half of the first millennium CE (in all likelihood, somewhat earlier on the southern slopes of the Sayan mountains). The substrate languages are Uralic (Ob-Ugric and Samoyedic) and Yeniseian. Traces of strong influence from Mongolic are discernible in some languages, especially Tuvan. Multiple interactions with other Turkic languages also played a role. The most recent intensive contact is with Russian. We start with an analysis of a typical system in Altay-kiži (§ 18.2.1.1.1), and then briefly turn to several other languages (§ 18.2.1.1.2).

18.2.1.1.1 Altay-kiži

A complex system of evidential forms in Altay-kiži[6] – whose meanings and functions show partial overlap – appears to reflect several chronological layers. The renewal of obsolescent periphrastic forms in the language has resulted in the emergence of a number of innovative constructions with evidential meanings (along the lines of renewal of categories as suggested in Heath 1998). In each case, a number of particles emerged, based on reinterpretation and phonological contraction of erstwhile auxiliaries. In contrast to other Turkic languages, evidential meanings are not limited to past tense.

The following examples illustrate a common Turkic opposition of two terms – an evidentially neutral and an indirective form. A finite verb with suffix -*DI* is shown in (2).

(2)   Altay-kiži
       ene-m   iš-teŋ   d'ed-ip   kel-di
       mother-POSS.1sg   work-ABL   come-CVB   AUX-PST.3sg/pl
       'My mother came back from work.' (neutral; possibly I've seen her coming)

This statement is neutral with regard to the information source. It may have an overtone of visually acquired information. This reading depends on the context and can be interpreted as a result of contextual implicature.

The indirective form marked with suffix -*GAn* has a wide range of meanings encompassing inference, assumption, and also speech report (in the sense of Johanson 2000, 2018). An inferential reading of this form is shown in (3).

(3)   Altay-kiži
       ene-m   iš-teŋ   d'ed-ip   kel-gen
       mother-POSS.1sg   work-ABL   come-CVB   AUX-PST.INDIR.3sg/pl

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6 The analysis and examples are from Skribnik and Ozonova (2007).

'My mother came back from work, it seems.' (e. g. I see her coat: inferential reading).

The form goes back to a perfective-resultative participle.

The third past tense form in *-ptIr* combines an inferential and a mirative meaning. The marker has grammaticalized from a combination of a converb marked with the suffix *-p* and the auxiliary *tur-* 'stand'. It is quite rare in the modern language. There, it is being replaced by particles based on this same form.

Further evidential forms consist of particles grammaticalized from different auxiliaries, accompanied by suffixes *-DI* and *-ptIr*. The particle *edi* (the *DI*-form of the archaic 'be'-auxiliary *är-*) expresses direct perception par excellence. It can combine with two participial forms in positive and in negative polarity. The resulting forms are *-GAn/-bA-GAn edi* "direct evidential past" and *-AtAn/-bAjtAn edi* "direct evidential past habitual", illustrated in (4) and (5). In both instances the information was acquired visually.

(4)   Altay-kiži
        bu   stol-dï   d'anïnda   bis   ekü-deŋ   öskö   tuura
        this   table-GEN   near   we   two-ABL   except strange
        kiži   bol-bo-gon   edi
        person   be-NEG-PST.INDIR   PTL.EVID
        'Except the two of us, no strange people were near this table.' (we were present there all the time)

(5)   Altay-kiži
        ene-m-niŋ   d'akši küün-i   tut-qan-da,   ol   qara
        mother-1sg-GEN good   mood-POSS3   hold-PTCP.PST-LOC   this   black
        qajïrčaq-tï   ač-atan   edi
        box-ACC   open-PTCP.HAB   PTL.EVID
        'When my mother was in a good mood, she used to open this black box.' (I saw it)

Indirective evidentiality and mirativity can be expressed with two further polysemous particles. The particle *emtir* – illustrated in (6) – goes back to a combination of the archaic auxiliary *-är-* 'be' and the suffix *-ptir* (with its erstwhile inferential and mirative meaning).

(6)   Altay-kiži
        bu   körmös-tör   taaj-ïm-dï   soklo-gon   emtir,
        this   devil-pl   uncle-POSS.1sg-ACC   beat-PERF   PTL.EVID
        dep   uulčaq   sanan-dï
        QUOT   little.boy   think-PST.3sg/pl
        'These devils must have beaten my uncle, the little boy thought.'

The other particle *boltïr/boluptïr*, whose meaning is similar to *emtir*, derives from a combination of an innovated auxiliary *bol-* 'be' and the suffix *-ptir*.

The particles *turbaj* and *turu* – formed on the basis of the auxiliary *tur-* 'stand' – in combination with the emphatic particle *ne* express strong surprise.

Mirative meaning can also be expressed via a "desubordinated" complement clause with a participial predicate marked by accusative, as shown in (1). In terms of their semantics and pragmatic import, these markers reflect differing degrees of speaker's surprise: from a mirative extension of an indirective form in (6) to a strong degree of unexpectedness.

We are faced with a curious phenomenon. A set of co-existing markers of mirativity within the language reflect differing degrees of speaker's surprise and "expectation of knowledge" (using Hyslop's 2014 term). Diachronically speaking, the markers belong to different chronological layers. The older the marker, the weaker the mirative effect. We hypothesise that historically older markers (such as *-ptIr*) underwent weakening and bleaching of their pragmatic effect, with new markers being developed to express stronger surprise and "unprepared mind". This constant renewal and strengthening of mirativity may be indicative of its communicative importance and is reminiscent of Jespersen's cycle in the evolution of negation (see, for instance, Miestamo 2017). Relatively new grammatical means encode highly surprising information, while older forms are depleted and can be considered weaker miratives (resonating with suggestions by Hyslop 2023 on the constant renewal and development of stronger miratives in Kurtöp, a Bodish (Tibeto-Burman) language).

Altay-kiži has several other markers of reported evidentiality. These appear to be in the process of being grammaticalized from forms of the sociative voice of the quotative verb *de-*: *de-*SOCIATIVE-TENSE[Ø 3 sg/pl], as in (7).

(7) Altay-kiži
     de-š-ti say-SOC-PST   'they said'
     de-š-ken say-SOC-EVID.INDIR 'they said'
     de-ž-et say-SOC-PRS   'they say'

They typically accompany indirective forms. An example is in (8).

(8) Altay-kiži

D'apraa	örökön	tulaan_ay-dïŋ	uč-ïn-da	božo-p
NAME	old_man	March-GEN	end-poss.3sg-LOC	die-CVB
qal-gan		de-š-ken		
AUX-PST.INDIR.3sg/pl		say-SOC-PERF		

'At the end of March old Dyapraa died, they say.'

These forms preserve the original morphological structure of reporting verbs, and do not show any phonological reduction. Based on their semantics and use, we hypothesise that they are in the process of incipient grammaticalization (along the lines of gradual grammaticalization of reportative particle *dizque* in a number of South American Spanish varieties: Travis 2006, Alcázar 2018). Similar processes take place in neighboring Mongolic languages.

18.2.1.1.2 Other South-Siberian Turkic languages

We now turn to a selection of other South-Siberian Turkic languages for which some information is available – Shor, Khakas, and Tuvan.

Shor has a tripartite system of past tense distinctions spanning evidentiality and mirativity. According to Isxakova et al. (2007: 487), the language has a neutral past in *-DI*, perfect/indirective in *-GAn*, and a mirative past in *(-p)tIr* ("unexpected past" with reportative-mirative and inferential-mirative readings). According to Nevskaya (2002), *-DI* is a direct evidential, and *-GAn* a neutral past with contextually determined perfective and inferential readings. She also mentions a special use of *-GAn* in folklore texts as a token of the genre. If the form is accompanied by possessive personal suffixes instead of predicative personal markers, it has a mirative meaning of unexpected action, as shown in (9):

(9)　　Shor (Nevskaya 2002: 311)
　　　qanïq　　　kel　　　anaŋ　　čaɣïr-ïbïz-a　　　　per-gen-i
　　　be.angry　come:AUX　then　chase.away-PERF-CVB　give:AUX-PTCP.PST-POSS3
　　　'He (suddenly) got angry and began to chase (his guests) away.'

The discrepancy in the analysis of the forms in *-DI* reflects a contentious issue in Turkic linguistics. Some overtones of direct information sources described for the past tense in *-DI* may be due to pragmatic implicatures. Their exact status remains an open question.[7]

In addition, a series of periphrastic forms containing a number of participles and auxiliaries – marked by *(-p)tIr* – express indirective-mirative meanings with different TAM nuances. The forms in the sources include the past perfect *-GAn pol-tïr*, habitual *-čAŋ pol-tïr* with the auxiliary *pol-* 'be; become', imperfective *-(p) čat-tïr* (this refers to present or past events simultaneous with the moment of reference) with the auxiliary *čat-* 'live; lie' etc. The form *pol-tïr* is analysed as an indirectivity particle (Nevskaya 2002).

The quotative verb *te-* and the verb of speech *ajt-* 'say' tend to be used as reportative markers following any verb form, except those marked with *-DI* 'direct perception'. The reportative forms have impersonal reference and are marked for 3sg (zero) or 3pl (*-lAr*). Examples include *ajt-ča / ajt-ča-lar* or *tep-ča / tep-ča-lar* say-PRS(-PL) 'it is said', as well as sociative forms like *te-š-ča / te-š-ča-lar* say-SOC-PRS(-PL) 'it is said' 'it is collectively said'.

For Khakas, Borgojakova (2019) analyses forms with the suffix *-DI* as past resultative, *-GAn* as a neutral past with no evidential or modal extensions, and *–(p)tIr* as an indirective/mirative past (see also Kaksin 2013). Similar to Shor, a rich subsystem of periphrastic forms involves a few combinations of participles and auxiliaries in *-(p)tIr*. The auxiliary *pol-* 'be; become' is the most frequent. The form *pol-tïr* 'indirective' does

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7 According to Johanson (2000: 65, 2018: 512), "the widespread claim that unmarked items such as *Gel-di* 'X has come/came' consistently signal 'direct experience' or 'visual evidence' is clearly fallacious. Clauses unmarked for evidentiality … simply do *not* signal that the event is stated in an indirect way".

not appear to have acquired the status of a particle. The combination of a converb with the suffix *-(p)* and *čat-tïr* (from *čat-* 'live, lie') is considered an evidential present (direct perception) with a mirative extension (Kicheeva 2018). The exact meaning and the use of each term require further investigation (see also Anderson 1998: 35–36, for some examples of the indirect evidential in myths).

Tuvan appears to have an evidentiality system with two basic markers *-DI* 'direct perception' and *-GAn* with an indirective meaning (similar to the archaic Old Turkic runic inscriptions: Isxakova et al. 2007: 474). This pair is complemented by two further secondary forms with the contracted auxiliary *tur-*. These are (a) *-AdIr* labelled "direct non-visual perception (hearing, taste, touch) of an event simultaneous with its perception" (Shamina and Ondar 2003: 36, Oorzhak 2012), in (10), and (b) indirective-mirative past in *-ptIr* in (11).[8]

(10) Tuvan (Oorzhak 2012: 100)
      daštïn   ï't   eer-edir
      outside   dog   bark-PRS.AUD
      'Outside a dog is barking (I hear it).'

Similar to Shor, the marker *-ptIr* can have a reportative and an inferential reading, with mirative overtones. With the first-person subject, it describes an uncontrolled action and 'sudden realization' – see (11). This is reminiscent of the 1st-person-effect typical for indirective forms (see also Aikhenvald 2014).

(11) Tuvan (Shamina and Ondar 2003: 37)
      udu-j   beri-ptir   men
      sleep-CVB   AUX-INDIR.MIR.PST   1sg
      'As it turned out, I fell asleep.'

In summary: The Tuvan system comprises four synthetic forms. The sources on the language also list a large number of periphrastic constructions formed by participles and auxiliaries, with a number of evidential-like meanings. For instance, the sequence *-GAn tur-* is said to refer to direct perception, or to have an indirective reading with admirative overtone depending on tense markers on the auxiliary (Ondar 1999: 170–171). The negative form of the past participle with the auxiliary verb *čor-* 'to go' has the meaning of 'unrealized expectation' (Shamina & Ondar 2003: 38). These forms appear to be grammaticalized to a different extent. Their exact reading as exponents of direct perception or of mirativity largely depends on the context.

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8 A grammar sketch in Anderson and Harrison (1999: 50–1) does not reflect the full gamut of evidential distinctions in the language.

18.2.1.1.3 An interim summary

The South Siberian evidential systems preserve a common Turkic binary opposition of evidentially neutral vs. indirective past. The neutral past often acquires the readings of a direct evidential. Most languages add to this a number of periphrastic constructions whereby a set of participles or converbs combine with various auxiliaries producing evidentiality-related meanings. Some of the periphrastic forms have undergone formal fusion and can be synchronically treated as markers of additional past tenses. A prime example is the indirective-mirative in *-ptIr* which has developed into the third member of the past tense system across the subgroup (and beyond; see also Johanson 2018: 515).

Mirativity is a particularly salient feature of every system. It can be expressed with particles (originating in erstwhile periphrastic constructions) or a specialized construction involving desubordination. Grammaticalization of quotative verbs into established reportative markers does not appear to be a prominent trait in any of these languages.

18.2.1.2 North Siberian Turkic: Sakha (Yakut) and Dolgan

Sakha (also known as Yakut) has been shaped by a substrate or adstrate influence of Tungusic and Mongolic languages, and also Yukaghir (a Paleo-Siberian isolate). Dolgan – previously considered a dialect of Sakha – has been influenced by Evenki, a Tungusic language, and also by Nganasan (Samoyedic) (see § 18.2.3 and § 18.3.2.3). Sakha and Dolgan share innovative developments of the pan-Turkic past tense system.

The binary opposition of neutral finite past in *-DI* vs. past participle in *-BIT* as indirective has evolved into a three-term past-tense system. Note that *-BIT* corresponds etymologically to *-mIš* in East Old Turkic. Forms in *-BIT* can take both personal possessive and personal predicative suffixes, thus setting apart aspectual and evidential meanings. Similar phenomena can be found in the archaic language of traditional narratives in Shor; see Nevskaya 2002, and (9). The *BIT*-form is used as a perfect with possessive (nominal) personal suffixes, e. g. *umnu-but-um* (forget-PTCP.PST-POSS.1sg) 'I've forgotten'. It can also occur with verbal personal suffixes as a resultative/indirective with a mirative extension (*umnu-bup-pun* (forget-PTCP.PST-1sg) 'I've forgotten, as it turned out'). Korkina (1970: 86) points out that the indirective *BIT*-form in Sakha denotes delayed realization of a past event (not perceived at the time of happening) on the basis of visible results.

The indirective form of the archaic existential verb *e-* (a reflex of the Old Turkic *är-*), in combination with *-BIT* has grammaticalized into a mirative particle *ebit*. The particle occurs with the past participle, as in (12), and with the future participle, as in (13) (Buder 1989: 99; Efremov 2011, 2013; Filippov & Oorzhak 2020).

(12)   Sakha (Efremov 2011: 330)
      kini   bar-bɨt   ebit
      he   go-PTCP.PST   PTCL.MIR.3sg
      'He is (already) gone (as it turned out).'

(13)   Sakha (Efremov 2013: 104–5)
        Kuuhuma   kel-en   kini-ni   suorħannittan   tardɨalaa-n
        NAME   come-CVB   he-ACC   blanket.3sg.ABL   tug-CVB
        uhugun-nar-a   tur-ar   ebit
        wake_up-CAUS-CVB   AUX-PTCP.FUT   PTCL.MIR.3sg
        '(As he woke up,) it turned out that Kuz'ma has come and is waking him, tugging at his blanket.'

The old periphrastic forms appear to have been re-analyzed as a mirative past and present respectively. According to Efremov (2011: 32), the finite past form -*DI* has a direct evidential reading. A similar reading has been described for the periphrastic "present actual", that is, continuative forms with the following structure:
        converb in -*A* + auxiliaries *olor-* 'sit', *tur-* 'stand', *sit-* 'lie' and
        converb in -*An* + *is-* 'go'.

These forms are said to describe speaker's immediate perception of events, simultaneous with the speech act (Efremov 2011: 329). Whether or not this interpretation results from a pragmatic implicature remains an open question (cf. Johanson 2000: 65, 2018: 512).
        A number of grammaticalized nouns are used as reportative markers, with epistemic overtones (Efremov 2011: 330). These include:
        reportative-1 (older, neutral) *ühü* < archaic *ös-ö* 'word; speech' +POSS.3sg;
        reportative-2 (newer, less certain) *suraxtaaħa* < *surax* 'news, rumour' + proprietive in -*LAAX* + poss.3sg.

These particles typically follow the indirective form in -*BIT*, and serve to specify the information source of the utterance. Other forms of participial origin – but not the finite form in -*DI* – can also occur with these particles. This can be seen as indication of their origin as head nouns with a participial modifying clause (known as GNMC).
        The only reportative marker developed from a speech verb is the impersonal *diiller* (from *diə-iir-ler* 'say-FUT-3pl'), shown in (14) as an alternative to *ühü*. According to Efremov (p.c.), it cannot be considered fully grammaticalized.

(14)   Sakha (Efremov 2011: 330)
        kel-bit   diiller/ühü
        come-PST.INDIR.3sg   PTCL.REPORTATIVE
        '(He) has arrived, they say.'

According to Ebata (2020: 371, 375), several nouns meaning 'appearance,' 'shape', 'sign', each in combination with the proprietive suffix and a participial attributive clause, may have been grammaticalized as markers of inference on the basis of perceptible traces:

(15) Sakha (Ebata 2020: 371)

bɯhaʁ-ɯm	syp-pyt	keriŋ-neex
knife-POSS.1sg	disappear-PTCP.PST	appearance-PROPR.3sg

'It seems that my knife has disappeared.'

Dolgan is similar to Sakha in that it distinguishes the neutral, non-evidential past in -*TI*, e. g. *bar-da* 'he went', and two past forms developed on the basis of the past participle in -*BIT* (Ubryatova 1985, Däbritz 2022). Similar to Sakha, the *BIT*-participle as a finite predicate offers two options. It can be used either with personal possessive suffixes ("non-evidential postterminal past", 3sg *bar-bit-a* 'he is gone') or with personal predicative suffixes ("evidential postterminal past", hearsay or inference, i. e. indirective, as in *bar-bit* 'he went apparently').

The indirective past form of the copula/auxiliary *e-* (*e-bit*, sometimes contracted to *e:t*) is described as an evidential particle which can follow participles, nonverbal predicates, and finite verbs. This form may acquire a mirative extension and an epistemic overtone of uncertainty, especially in the first person context: see (16).

(16) Dolgan (Däbritz et al. 2019; AkEE_19XX_BoySister_flk.156)

kïhïn-ï	meld'i	utuj-bup-pun	ebit.
winter-ACC	whole	sleep-PST2-1sg	EVID

'I slept the whole winter, apparently.'

The participle in -*TAK* with possessive suffixes expresses inference/assumption on the basis of present circumstances, but not hearsay (3sg *bar-dag-a* 'he went apparently'). For instance, an old couple sees a young man lying under their daughter in the tent and says (17).

(17) Dolgan (Däbritz 2022: 296)

e: d'e,	kütü͡öp-püt	bu͡ol-lag-ïŋ, […].
eh well	son.in.law-POSS.1pl	become-INFER-POSS.2sg

'Well, you are apparently our son-in-law …'

The Sakha counterpart of this example will employ either a similar form involving the participle in -*TAK* (analyzed as epistemic modality with the meaning of supposition) or the mirative particle *ebit.* Its allomorph *ebik-* is illustrated in (18).

(18) Sakha (Efremov, p.c.)

en	bihigi	kütüöp-püt	buol-laħ-ïŋ	(ebik-kin)	duu?
you	our	son.in.law-1pl.POSS	be-SUPP-2sg	(PTCL.MIR-2sg)	Q

'Are you our son-in-law (supposedly / as it turns out)?'

Dolgan has three other evidential particles used after finite verb forms. These are inferential *eni* and *buollaga* (a lexicalized inferential form in -*TAK* from *buol-* 'become', as in (18)), and reportative *ühü* (compare Sakha *ühü* < archaic *ös* 'word' + poss.3sg). Dolgan, in contrast to Sakha, did not develop any reportative particles from a quotative verb (Chris Lasse Däbritz, p.c.)

In summary: North Siberian Turkic languages demonstrate a few specific features not shared with their southern relatives. As Johanson (2021: 127) put it, "the long contacts with Mongolic, Tungusic, and Yukaghir led to remarkable innovations".

In particular, both Sakha and Dolgan languages have developed evidential forms additional to the common Turkic binary opposition of a finite past with a neutral (or direct evidential meaning) and a past participle with indirective meaning, based on reinterpretation of participles with two sets of personal markers. This has resulted in a three-term system which differentiates a neutral past with direct evidential readings, a non-evidential perfect, and an indirective-mirative. Periphrastic forms containing the existential verb (< *är-) are reduced to particles and not renewed, in contrast to the South Siberian Turkic.

The so-called "general noun-modifying constructions" (GNMC) play a special role in grammaticalization of evidentiality. Combinations of nouns of "perceptional" semantics (often with a proprietive suffix), and participial attributive clauses, reanalyzed as finite predicates with an evidential particle, give rise to further evidential markers. Reportative particles develop from nouns meaning 'speech' or 'word'. They typically follow *BIT*-forms (that is, a past participle and finite indirective past) in its indirective meaning, thus specifying the evidential value. Exponents of inferential markers are in the process of evolving from nouns with a general meaning of appearance and shape. The development of a quotative verb into a reportative marker has been marginally attested in Sakha and is absent from Dolgan.

18.2.2 Tungusic languages

Tungusic languages have small evidentiality systems, with a consistent distinction between indirect (noneyewitness or inferential) and an evidentially neutral past tense term.

Details of analysis vary. In his description of evidentiality in Tungusic languages, Malchukov (2000: 441) states: "The inferential perfect may be regarded as the core of the evidential system in Tungusic languages, although its evidential semantics is more conspicuous in some Tungusic varieties (Western Even, Udihe) than in others". All Tungusic languages are said to "exhibit a contrast between two series of predicative forms: verbal forms (older formation) and participial forms (new formation)" (2000: 442). The verbal forms function only as predicates of independent clauses and take predicative personal markers. In contrast, the participial forms are polyfunctional: They can occur as predicates of all types of subordinate clauses as well as of independent clauses and take personal possessive (nominal) marking.

North Tungusic languages are similar to Turkic in that they have a binary opposition of a neutral finite past vs. a past perfect of participial origin with evidential (inference and other types of indirectivity) and mirative extensions. The same forms have a different meaning in South Tungusic. For instance, in Nanai participial forms are evi-

dentially neutral, while the finite forms have developed assertive epistemic meaning (Avrorin 1961; Malchukov 2000: 450). Some forms of the quotative verb (*gun-/göön-/un-/wən-* 'say') have grammaticalized into reportative particles; examples include the particle *göön* in some varieties of Even, an enclitic *=(j)am* in Nanai (from *un-* 'say' plus the simultaneous converb in *-mi*) (Malchukov 2000: 462) and indirect evidential particles in Udihe (Nikolaeva and Tolskaya 2001: 461–462). In South Tungusic languages of the Lower Amur river (Nanai, Udihe, Ulch, Oroch) particles grammaticalized on the basis of the verb of speech have developed from reportatives to markers of new knowledge, as "weak admiratives" (Gusev 2014).

We now turn to evidentiality in Even, the best described language of the family, whose numerous dialects are spread across an extensive geographical area.

18.2.2.1 North Tungusic: Even

Even past tense system includes three forms: (i) the finite nonfuture ("aorist") form in *-RA,* (ii) the imperfect past in *-Ri* (both evidentially neutral) and (iii) the inferential perfect in *-čA*.

The inferential perfect contains the perfect participle in *-čA*. Third person is zero-marked, and first and second person forms involve a combination of *-čA* with the copula *bi-* (Malchukov 1995: 17). This form appears to have an indirective meaning (similar to Turkic languages; see Johanson 2021) with some mirative overtones (Malchukov 2000: 443–445). This is illustrated in (19).[9]

(19) Even (Malchukov 2000: 444)

Egđen   moden   evgide-du-n   nulge-sen-ce-l   bi-se-p.
big   flood   this.side-DAT-3sg   nomadize-MOM-PERF-PL   be-NFUT-1pl
'(It turned out that) we have nomadized just before the flood.'

The form in *-čA* is also a token of folk tales and traditional stories about historical events and personalities (Malchukov 2000: 444; Greed 2018: 954–956).

Two evidentially neutral past tense forms are the finite nonfuture ("aorist") form in *-RA* and the imperfect past in *-Ri* (both are also of participial origin). They can be used in the contexts involving direct perception or participation of the speaker (possibly, as a result of pragmatic inference). In (20) the speaker describes an event perceived directly using a form with the suffix *-Ri*.

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9 As Malchukov (2000: 443) puts it, "In central and western dialects the evidential meaning may be considered the primary interpretation of the perfect form in view of the restrictions on its use in the 1st person".

(20) Even (Greed 2018: 951)

Tịmarran	ammụ	ńan	ejmu	ịaw
next.day	father:POSS.1sg	and	mother:POSS.1sg	what:ACC

gen-ne-ri-tnen	ịrụŋka-w
look_for-INTENT-PST-POSS.3pl	load_left_on_the_way-ACC

'The next day my father and mother went to fetch the load left on the way.'

The continuation of this, in (21), contains the verb marked with *-čA* in its indirective meaning. The speaker gives his opinion as to why (21) happened.

(21) Even (Greed 2018: 951)

Tar	čụgas-la,	ahụkan-dụ	eme:n-če-l	bi-če-l.
DIST	near-LOC	near-DAT	leave-PRF.PTCP-pl	be-PERF-pl

'They had left that somewhere close by (it appears).'

According to Greed (2018), the suffix *-čA* is ten times more frequent in western than in eastern dialects of the language, based on a corpus study by Zippel (2012) (see also Malchukov 2000: 444–445). In Kamchatka Even this type of participle is predominantly used as a modifier. In Western varieties its main use is that of an "indirective evidential narrative tense" (Zippel 2012: 60–61, Greed 2018: 945). This is believed to be a consequence of Sakha (Turkic) influence on Western dialects. Even has an additional clause-final particle originating from a similative construction, *urečin / uručun* 'apparently', with an evidential meaning of inference (Malchukov 2000: 461).

18.2.2.2 Other Tungusic languages

Similar to Even, Evenki – the largest Northern Tungusic language, formerly known as Tungus – shows a strong dialectal differentiation. The southern variety, known as Barguzin Evenki, has been influenced by Buryat, a Mongolic language. The northern varieties bear an imprint of Sakha, a Turkic language.

According to Nedjalkov (1997: 237–243), the past tense system of Evenki is characterized by an opposition of the nonfuture form in *-RA* "recent past, present of prolonged state or habitual" and the "past indefinite" in *-čA* (of participial origin). The forms in *-RA* normally, but not necessarily, imply direct evidentiality. The *čA*-form expresses indirect evidentiality, combining reported and inferential meanings (cf. Boldyrev 2007: 681); see (22a, b).[10]

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10 Periphrastic forms containing forms in *-čA* and the existential auxiliary *bi-*, in addition to various tense markers, are described by Nedjalkov (1997: 241, 243–244) as having only a perfect meaning, though some examples appear to allow for an inferential or prospective reading.

(22) Evenki (Nedjalkov 1997: 239)
      a. Eni   eme-re-n.   b. Eni   eme-če-n.
      mother   come-NFUT-3sg   mother   come-PST-3sg
      'Mother came.' (I saw it)   'Mother came.' (as I learned)

Malchukov (2000: 449) points out that those Evenki varieties which have the past form in *-Ri* exhibit an evidential contrast between *Ri-* and *čA*-forms in a way very similar to Even.[11]

The status of evidential distinctions in Negidal and Solon remains a matter for further investigation (see Malchukov 2000: 457 on the grammaticalization of the *čA*-forms in both languages, and Malchukov 2000: 453 on the replacement of verbal forms by participles in Orok and Oroch, other members of the family).

Tense forms grammaticalized from erstwhile participles in Nanai are evidentially neutral. Fully inflected (finite) forms have assertive epistemic meanings (Avrorin 1961, Malchukov 2000: 450). According to Oskolskaya (2020: 316), these forms "appear to mark the involvement of the person who is in charge of assertion", and thus appear to have egophoric overtones.

The expression of evidentiality in Udihe, a highly endangered Southern Tungusic language, is a matter of some controversy. According to Shnaider (1936: 118–119), the distinction between two past tenses involved information source: Past I, based on a reinterpreted participial form, expressed indirect evidentiality, while Past II, based on a fully finite form, had the meanings of a direct evidential. Girfanova (2009: 54) analyses Past I as evidentially neutral and Past II as a direct evidential (which has overtones of certainty and speaker's participation).[12]

According to Girfanova (2002: 30), evidential distinctions are falling out of use and are no longer familiar to the remaining speakers. Differences in the analysis of two past forms in Udihe may reflect different analytic approaches. Perexvalskaya suggests that perfective meanings of Past II may have developed relatively recently (middle of the 20th century) as a consequence of a reinterpretation of the erstwhile direct evidential (2016: 584).

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11 In contrast, Bulatova and Grenoble (1999: 38) describe the form in *-rkA* being "used when the speaker infers that an action will probably occur" as "evidential". In other grammars this form is regarded as an epistemic modality with the meaning of "past probable" (Boldyrev 2007: 735). In some dialects it is one of three forms expressing degrees of certainty: probability in the present or recent past (*-nA*), in the past (*-rkA*) and habitual (*-rgu*) (Lebedeva et al. 1985: 145–148, Nedjalkov 2007: 265). Since these forms have strong epistemic overtones, their inclusion in the evidentiality system appears problematic.

12 Kormushin (1998: 95) emphasises assertive overtones of Past II. Malchukov (2000: 454) describes Past I and Past II as indirect perfect and witnessed imperfect respectively. Nikolaeva and Tolskaya (2001: 253–255) refer to the same sets of forms as "past" and "perfect". What they call "perfect" (= Past II) appears to have resultative meaning with overtones of 'hot news' (presumably mirativity).

Alternatively, the original evidentiality system (as described by Shnaider 1936, and also Girfanova 2002, 2009) may have undergone reinterpretation as a result of language obsolescence under pressure from the dominant Russian with no evidentiality distinctions (along the lines of changes in the evidentiality system in Wintu: see Pitkin 1984 and Aikhenvald 2004: 299–300).

Nikolaeva and Tolskaya (2001: 461–464) list a number of evidential particles (*gune, gunei, guŋkini,* and *gum(u)*), etymologically linked to the speech verb *gun-* 'say, tell'. These particles appear to have a full array of meanings typical for non-firsthand (or unwitnessed) evidentials.[13] Two further particles with mirative meanings (*bese* and *bubu)* occur in conjunction with the focus marking clitic.

Further to the South, Manchu has no grammaticalized evidentiality. The language has a number of lexical expressions referring to information source, e. g. *tuwa-ci* (look-COND) 'taking a look' as parentheticals (Gorelova & Chen 2015). The absence of evidentiality in Manchu could be attributed to prolonged contact with Chinese – an issue which requires further study (David Holm, p.c.).

18.2.2.3 An interim summary

Tungusic languages feature a binary opposition of an evidentially-neutral finite form and a participial form in finite use with indirective meaning, similar to a common Turkic system. The development of evidential meanings appears to have involved reanalysis of participial forms as evidentials (or "direct verbalization").

The exact semantics of this binary distinction shows geographic variation. Within a contact zone with the Turkic language Sakha, we see a Sakha-like opposition between neutral vs. indirective past. Outside of this zone we find a distinction between past and perfect/resultative with evidential extensions. In Nanai the opposition finite vs. participial form was completely reanalyzed: Participial forms became evidentially neutral, and finite forms became assertive. As a consequence, the evidential distinction was lost.

Reportative markers have evolved on the basis of the verb of speech in the South Tungusic branch (Matić & Pakendorf 2013, Gusev 2014) and in some varieties of Even (Malchukov 2000: 462) (but apparently not in Evenki). No evidentials have been developed out of grammaticalized nouns, in contrast to Turkic languages.

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13 This source does not mention the existence of evidentiality distinctions in past tense forms briefly addressed by Girfanova (2002: 30, 2009).

18.2.3 North Mongolic: focus on Buryat

Middle Mongolian (MM) spoken in the 13th and 14th centuries in what is now modern Mongolia is the language with the earliest records within the family. Evidentiality in Middle Mongolian was expressed in the past only. The language distinguished (a) neutral past in *-bA* versus (b) indirect evidential past in *-jUGU* covering inference and hearsay versus (c) direct evidential past in *-lUGA* covering firsthand information (Poppe 1987: 265, Street 2009: 131–132; Binnik 2012: 8; Brosig 2014: 54).

Due to the extensive geographic spread of the family and the impact of language contact, evidential systems in modern Mongolic languages display substantial diversity. The original system – attested in Middle Mongolian – is lost in the South and in the North. Evidential systems in Mongolic languages of the Southwest have been reanalysed under the influence of Tibeto-Burman languages, especially Amdo Tibetan (see Brosig & Skribnik 2018, for more details). Khalkha-Mongolian and Oirat preserve the original system.

Other Mongolic languages show additional innovations. Kalmyk – spoken further to the west in the Volga River basin – is a case in point. The language has developed a multi-term evidential system in three tenses, through reinterpretation of periphrastic forms involving participles and different auxiliaries (see Skribnik & Seesing 2014). Precious little is known on Oirat, Kalmyk's closest relative. An investigation of evidentiality in Oirat and its comparison with Kalmyk would be instrumental in understanding the dynamics of development of the category in two closely related languages. Potential impact of contact between Oirat and South Turkic languages remains another open question.[14]

We now turn to the evidentials in Buryat, a North Mongolic language (based on Brosig and Skribnik 2018, Skribnik & Darzhaeva in preparation). Buryat is spoken in the Baikal region and is believed to have undergone substrate influence from Tungusic. Other neighbouring languages are South Siberian Turkic (especially Tuvan and Tofa). Buryat was previously in contact with Kurykan Turkic (the linguistic ancestor of Sakha), Samoyedic, and the Yeniseian languages (Skribnik 2003: 102–103).

Of the three Middle Mongolian (MM) past forms, only the evidentially neutral *-bA* has been retained in the meaning of a general past. No reflexes of MM indirective *-jUGU* have been attested. The reflex of the MM direct evidential past *-lAi* (from MM *-lUGA*) has been reanalyzed as a preventive form (*una-lai-š!* fall-prev-2sg 'Don't you fall!'). A number of non-evidential particles contain this suffix, e. g. *gelei* 'even accepting that V, still' and assertive *belei* (cf. the direct evidential particle *bilä* in Kalmyk).

All means of expressing evidentiality in Buryat are recent innovations. We find reportatives built on the quotative verb. Several periphrastic constructions with aspec-

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tual meanings, especially perfect / resultative and continuative, and modal meanings, can have evidential and mirative extensions.

Some forms of the quotative verb *ge-* are developing into reportative markers. This is the major function of its present tense sociative form (*ge-lse-ne*), shown in (23).

(23) Buryat (Skribnik & Darzhaeva in preparation)
üsegelder   hüni   türme-höö   terjed-ee   ge-lse-ne
yesterday   night   prison-ABL   flee-PST.3sg/pl   say-SOC-PRS.3sg/pl
'Yesterday night (he) escaped from the prison, they say.'

To express common knowledge, the habitual participle *ge-deg* either with or without sociative voice is used. This is what we see in (24), an example of a proverb.

(24) Buryat (Skribnik & Darzhaeva in preparation)
barildaan-da   balsan   xereg-tei   ge-lse-deg
wrestling-LOC   muscle   thing_to_do-PROPR   say-SOC-PTCP.HAB.3sg/pl
'For wrestling muscles are needed, they say.'

Further information sources are expressed with a variety of evidentiality strategies (see Brosig & Skribnik 2018: 570). Periphrastic constructions involving participles constitute a very complex and elaborate system. The number of participles ranges from 9 to 12 depending on the sources, the two most frequent auxiliaries carrying the personal and TAM inflection are *bai-* 'be' and *bolo-* 'become'. Some combinations of 'participle + auxiliary' have developed indirective evidential and mirative extensions. For instance, the perfect-cum-resultative marker *-hAn bai-* (past participle + 'be') can have both indirective and mirative reading. In his comment to (25), Cydypov (1972: 161) mentions that the source of information is inference rather than direct perception. This is what we see in the translation.

(25) Buryat (Cydypov 1972: 161)
Baatar   Moskva   ošo-hon   bai-na
NAME   NAME   go-PTCP.PST   AUX-PRS.3sg/pl
'Baatar went to Moscow, as it turned out.' (The speaker was in Bataar's office and found out that he is absent)

Example (26) contains the first-person subject. The source of information is speech report, with mirative overtones. This is similar to the "first-person effect" of an indirective form.

(26) Buryat (B. Cyrenov, p.c.)
bi-š   xürš-in-göö   üüde   nyeerge-hen   bai-gaa-l-bi
I-POSS.2sg   neighbour-GEN-REFL   door   bang-PRCP.PST   AUX-PST-PTCL.FOC-1sg
'(I was so drunk yesterday, they say,) I was even banging at the neighbour's door.'

The continuative construction consisting of the present participle in *-AA* and the 'be'-verb denotes a present state that started in the recent past. This form may also acquire

an evidential reading of inference or assumption, as in (27), often with a mirative overtone.

(27) Buryat (Skribnik & Darzhaeva in preparation)
Tiime, tiime ... mart-aa-güi   bai-na-t,   Dambii ...
so   so   forget-PTCP.PRS-NEG AUX-PRS-2pl NAME
'(Watching the reaction of the hearer:) So, so... (It seems) you did not forget, Dambii ...'

This construction can express (re)interpretation of information acquired in the past, with an overtone of "deferred realization" (along the lines of de Reuse 2003). In these meanings, it is used in combination with perfect or habitual forms, e. g. *-hAn bai-* (perfect, PTCP.PST + 'be') combined with *-AA bai-* > *-hAn bai-gaa bai-*; *-dAg(güi) bai-* (habitual, PTCP. HAB (NEG) + 'be') combined with *-AA bai-* > *-dAg(güi) bai-gaa bai-*. A combination of the resultative participle in *-nxAi* with the auxiliary *bai-* shows a mirative extension only in one temporal form. The auxiliary is added when it is necessary to specify the time of perception of a visible result, e. g. *-nxAi bai-na* for the present, *-nxAi bai-xa* for the future, *-nxAi bai-gaa* for the actual ("hot news") past. However, the neutral past *-nxAi bai-ba* (28) describes counterexpectation (rather than the perception of a past event).

(28) Buryat (Skribnik & Darzhaeva in preparation)
Žargal Bajarmaa xojor jaba-ša-nxai   bai-ba
NAME   NAME   two   go-INTENS-PTCP.RES AUX-PST.3sg/pl
'As it turned out, Zhargal and Bayarmaa have left already.' (I expected to meet them but did not)

A corpus study (Skribnik & Darzhaeva in preparation) shows that also some other, less frequently used participles may acquire mirative readings in combination with the neutral past auxiliary form *bai-ba,* but not with other temporal forms of this auxiliary. These include, inter alia, the passive participle in *-AAtAi* and *nondum*-participle in *-AA-düi* 'not yet'.

Buryat has also developed a number of modal constructions based on reinterpretation of "general noun-modifying constructions" (GNMC). Such clauses containing participles and a head noun with either a proprietive or a privative suffix (*-tAi/-güi*) have been grammaticalized to modal markers. Many of these have evidential extensions. For instance, *xeber-tei* 'apparently, probably' (proprietive from *xeber* 'similarity, appearance') expresses epistemic uncertainty with conclusions inferred from sensory evidence ('it looks like …'). With the future participle, an uncertain prospective meaning is prevalent: see (29).

(29) Buryat (Skribnik & Darzhaeva in preparation)
xura   oro-xo   xeber-tei
rain   enter-PTCP.FUT look-PROPR.3sg/pl
'It will probably rain / It looks like it will be raining.'

As a particle, *xebertei* can now occur with finite forms such as neutral past in *-bA*.

Verbal periphrastic constructions with modal semantics regularly also demonstrate evidential extensions. For instance, combinations of the future participle in *-xA* and its derivatives with auxiliary verbs *bai-* 'be' and *bolo-* 'become' express circumstantial necessity, and also general assumptions about past and future events, depending on the tense of the final suffix.

In summary: Buryat has lost the tripartite evidential system described for Middle Mongolian. The language has developed a substantial number of periphrastic forms with varied semantics. These include aspectual (especially perfective and resultative) and modal expressions with evidential/mirative extensions. Each of these can be considered an evidential strategy. Surprisingly, neutral past forms of the 'be'-auxiliary (*bai-ba* be-PST.3SG/PL) in combination with various participles develop mirative meanings. The importance of periphrastic constructions in the expression of evidentiality in Buryat is reminiscent of Kalmyk, and also South Siberian Turkic languages.

Grammaticalization of nouns into exponents of epistemic modality with mirative extensions, within general noun modifying constructions, is a feature shared by Buryat and Sakha. Specialized reportative markers are emerging on the basis of the verb of speech, similarly to South Siberian Turkic and also South Tungusic. All in all, the evidentiality system in Buryat appears still to be in the process of reorganization considerably, diverging from the Old Mongolic patterns. Further mirativity distinctions are being grammaticalized.

18.2.4 An interim summary

Modern Turkic, Tungusic, and Mongolic languages display a number of commonalities in their evidential systems, as well as some marked differences. An archaic system in Middle Mongolian included a neutral, a direct, and an indirect evidential past (all expressed via finite forms). In contrast, Turkic and Tungusic languages distinguish a finite evidentially neutral past (sometimes reinterpreted as a direct evidential) and its indirective counterpart based on a non-finite – usually participial – form.

"Finitization" of participles and converbs is known as "one of the driving forces of morphosyntactic change in the Transeurasian languages" (Robbeets 2015: 330, and § 18.1). The pathways of finitization involved in the development of evidentiality systems appear to have an areal distribution. Numerous periphrastic forms with evidential and mirative extensions are deployed in South Siberian Turkic languages and Buryat (North Mongolic) which are known to have been in contact for centuries. Erstwhile non-finite forms with evidential readings in Tungusic languages are a feature of those varieties which are in contact with Sakha, a Turkic language with similar phenomena.

A further feature of Altaic languages is the development of reportative evidential markers on the basis of quotative verbs framing direct speech reports and verbs of speech. In North Mongolic and South Siberian Turkic, the process of grammaticalization

of quotative verbs and verbs of speech involves sociatives, impersonal passives, and habitual forms. This relatively common grammaticalization path is shared with numerous Tibeto-Burman languages (see, for instance, Saxena 1988, Zhang 2014).

North Mongolic languages and Sakha share a tendency to grammaticalize nouns meaning 'appearance' into modal markers with evidential extensions (note that Sakha shows a strong impact of Mongolic languages, due to past contacts). Nouns with the meaning of 'word, speech' grammaticalize into reportative markers only in North Siberian Turkic languages. There is no evidence for such grammaticalization paths in Tungusic.

18.3 Uralic languages

Evidentiality systems across the Uralic family show substantial diversity (for an overview, see Skribnik & Kehayov 2018 and references there; also Jalava 2016). The focus of this section is on the Ob-Ugric and Samoyedic branches.

18.3.1 Ob-Ugric branch

Evidentials in Ob-Ugric languages Khanty and Mansi have been developed on the basis of past and present participles. In the north of the Ob-Ugric-speaking area – North Mansi and North Khanty – their mirative overtones came to be dominant. Their use in narratives follows the development of the plot: The forms occur at the turning point in each story, often in what we call "premirative contexts". In agreement with the concept of Hero's Journey (see J. Campbell 2008 [1949], also Propp 1928), the Hero, leaving his oikumene to fulfil his task, is confronted by people and things previously unknown to him. In these instances, sequences "motion verb + verb of perception" (*veni, vidi*) are almost invariably followed by one of the mirative forms (Skribnik 2023).

Ob-Ugric languages tend to be topic-prominent (in the sense of Li and Thompson 1976). As a corollary, their salient feature is extensive use of numerous topicalizing mechanisms. These include passives which play a role also in the formation of evidential-mirative systems. North Mansi and North Khanty have systems consisting of two evidential values and three markers:

(i) direct perception / "immediate" mirative expressed by a present participle,

(ii) indirective (predominantly inferential) / mirative meaning, expressed by

– a past participle in active clauses,

– a past passive participle (North Mansi -*ima*) or a converb (North Khanty -*man*) in passive clauses.

The expression of direct perception is limited to contexts of immediate reaction to unexpected phenomena. As a consequence, it acquires a present tense reading. The

ensuing system is symmetrical with two neutral finite tenses, past and present/non-past, and two evidential-mirative tenses.

Across Ob-Ugric, past and present participles, within relative clauses, are neither active nor passive, but "contextually oriented" (Haspelmath 1994: 153, Shagal 2019: 39–98), i. e. they can relativize on a wide range of participants depending on the context. In contrast, when these forms occur in the predicate slot in their evidential and mirative meaning, their use is limited to active contexts. North Mansi is exceptional in that it has developed a specialized past passive participle and uses it as an evidential/mirative marker.

18.3.1.1 North Mansi

Evidential forms in North Mansi have pronounced mirative meanings (see Skribnik 1999, based on a narrative corpus and confirmed by consultants).

The past "active" participle in -*m* can take either subject or subject-object agreement suffixes: the former if only the subject is topical, the latter if both subject and direct object are topical, and the verb agrees with both the subject and the object, as in (30).

(30)   North Mansi
luw-e   la:γl-e   no:ηχ=o:lm-am-e
horse-POSS3sg   leg-POSS3sg   high=keep-MIR.PST-sg<3sg
(To his surprise) 'His horse keeps one hoof high.'

In contrast, the passive participle in -*ima,* similarly to the standard passive form, takes only subject agreement suffixes – see (31).

(31)   North Mansi
xo:nt-na   joxt-im-et   pusən   al-im-et
army-DAT   come-MIR.PST.PASS-3pl   all   kill-MIR.PST.PASS-3pl
'The army (unexpectedly) appeared and they were all killed.' (lit. they were 'arrived at' by the army and all killed).

The passive participle is also used in a periphrastic form -*ima o:l-* with the auxiliary *o:l-* 'be'. It then has a purely resultative meaning with no inferential or mirative overtones.

When used in the predicate slot, present participles marked with -*n* have a mirative meaning, with surprise (immediate reaction) of the speaker or the protagonist based on direct perception. This use involves desubordination of erstwhile complements of verbs of perception (compare example (1) above). Present participles in their mirative use always take possessive personal markers, the way they do in non-finite complement clauses. An example is in (32).

(32) North Mansi

nasatʲi, taw   e:kwa-te   o:s   manʲsʲi   ne: o:l-ne-te
PCL.MIR   he   woman-POSS3sg   also   Mansi   woman   be-MIR.PRS-POSS3sg
'As it turns out / astonishingly, his wife is also a Mansi woman!'

The form *nasatʲi*, a mirative particle meaning 'as it turns out', appears to have been grammaticalized quite recently, from a parenthetical expression *nas ātʲi* ('simple, usual' + negative existential) '(It's) not usual'. Its frequency has grown exponentially in the modern language. The influence of a functionally close Russian expression, the parenthetical *okazyvaetsja* 'as it turns out', may have played a role in its emergence and expansion.

Ivdel Mansi – spoken by a small, isolated group of Mansi on the western slopes of the Ural mountains – stands apart from its other Ob-Ugric relatives. Finitized participles appear to have just non-firsthand evidential – or indirective – meanings, without any mirative overtones. Examples (33a) and (33b) come from the beginning of a folk tale published in the newspaper *Lu:ima: Se:ripos* (Nr. 29, November 2012, narrated by Aleksandra Anyamova). The present tense indirective form in (33a) is an instance of a historical present, whose function is to make the narrative sound vivid. Evidentials are in bold.

(33a) Ivdel Mansi

Akwmat   pa:wəl-t   ma:χum   **o:l-ne:-nəl**
once   village-DAT   people   be-EVID.PRS-3pl
'[As they say,] Once there lived (lit. live) people in a settlement.'

(33b) **O:l-m-ət,**   **o:l-m-ət,**   Atajpe:kwa-n   **joχt-ima-t**
be-EVID.PST-3pl   be-EVID.PST-3pl   NAME-DAT   come-EVID.PST.PASS-3pl
'So they lived and lived, and were visited by the Atajp-woman.'

More studies on Ivdel Mansi are needed, in order to understand the pathways of historical development. If mirative meanings of similar forms in other Mansi varieties are to be considered a later development, the indirect evidential in Ivdel Mansi may reflect an archaic feature. Alternatively, we may be faced with an independent development in an areally isolated variety of Mansi.

18.3.1.2 North and East Khanty

The evidentiality system in North Khanty is similar to that in North Mansi. The system contains three terms, each with a pronounced mirative meaning.[15] We find:
  (i) present participle in -*t* "direct perception; mirative (based on direct perception)",
  (ii) past participle in -*m* "past indirective; mirative",

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15 According to Kaksin, a native speaker and an expert in Kazym Khanty (2010: 54) they should be characterized as miratives rather than evidentials.

(iii) the form in -*man*, also functioning as a converb, "past passive indirective; mirative".[16]

In contrast to Mansi, Khanty evidential forms can take only possessive personal marking (Csepregi 2014). In addition, the language has several mirative particles, including *neš* and *mɐttə* 'as it turns out'. Erstwhile participial noun-modifying constructions (of the "mermaid" type: Tsunoda 2020) contain grammaticalized nouns, such as *piš* 'possibility'. These are reported to have developed additional evidential extensions (Kaksin 2016: 293).

For East (Surgut) Khanty, Csepregi (2014) describes evidentials of participial origin in -*t* (present) and -*m* (past). The forms are predominantly attested in traditional songs, and are quite rare in the modern spoken language. An innovated construction with the particle *tåɣi* accompanying an erstwhile participle is used instead (Csepregi does not mention any mirative extensions). An example is in (34).

(34)   North Khanty (Csepregi 2014: 207)

t'u	imi	quntintə	kił-m-ał	tåɣi
that	old.woman	a.long.time.ago	get.up-PTCP.PST-POSS.3sg	EVID.INDIR

'(It seems) the old woman got up a long time ago.'

The indirective evidential particle *tåɣi* comes from a grammaticalized noun 'place' (in a "mermaid" construction). The development of an evidential out of a locational expression is reminiscent of the scenario described by Thurgood (1986) (see similar examples in Aikhenvald 2021b). East Khanty has several participial constructions with grammaticalized head nouns, e. g. *kim* 'possibility', with epistemic meanings and possible evidential extensions (Sosa 2017: 52).

18.3.1.3 An interim summary

We find a strong dialectal differentiation in the expression of evidentiality and mirativity in Ob-Ugric. Evidentials in the westernmost variety, Ivdel Mansi, show no mirative extensions. In contrast, North Mansi and North Khanty are characterized by pronounced mirative extensions of evidentials, and a wide use of passive forms. Evidentials of participial origin in the spoken varieties of East Khanty have been replaced with a particle.

The pathways of the development of evidentials include:

(a) direct finitization of past participles and the North Khanty converb in -*man*,

(b) putative omission of the auxiliary in periphrastic constructions with resultative meanings for past passive participles, and

(c) desubordination of present participles.

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16 See Kaksin (2010); Csepregi (2014). Nikolaeva (1999) does not include the form in -*man* in her analysis.

East Khanty adds to these the grammaticalization of a head noun in a "mermaid" construction (*tåγi* 'place' resulting in an evidential marker; Csepregi 2014).

18.3.2 Samoyedic branch

Extant Samoyedic languages have elaborate evidential systems, with a special term for auditory information. An equally elaborate system of epistemic modality markers interacts with evidentials. The use of participles is particularly relevant in the formation of evidentials across Samoyedic. In grammatical descriptions, participial evidentials are listed either under non-finite forms (e. g. Tundra Nenets auditive in Nikolaeva 2014: 113, Nganasan auditive in Wagner-Nagy 2019: 273–274) or within general verbal paradigms (e. g. Forest Enets auditive in Siegl 2013: 300).[17] Not enough is known about extinct Sayan-Samoyedic languages and their expression of information source.

18.3.2.1 Nenets

Burkova's work (2010, 2022) contains the most comprehensive analysis of evidentiality in Nenets, based on continued immersion fieldwork in Nenets-speaking communities. Her results are the basis of our discussion here.

For Tundra and Forest Nenets Burkova (2010, 2022: 691–696) lists five evidential suffixes, some of them polysemous. These include the "auditive" or "non-visual sensory" marked with the suffix *-m(ʌn)oʔ$_2$ / -w(ʌn)oʔ$_2$* – (see (40) and (47)), in addition to four evidentials expressing inference and assumption or logical reasoning – see Table 1. Visually acquired information is usually expressed with evidentially neutral indicative forms.

The evidential system in Nenets extends beyond past tense. The two "forecast" forms – sensory forecast and cognitive forecast – involve future prediction based on either sensory information or on logical reasoning. While the assumptive and inferential evidentials involve the interpretation of information acquired prior to the speech act, the "forecast" forms are oriented towards future. This is reminiscent to the "prospective evidentials" in Yukaghir (Maslova 2003a: 175–176) and in Kalmyk (Skribnik & Seesing 2014: 153). The presence of symmetrical evidential distinctions in the past and in the future is a special feature of Nenets.

The forms in *-mi/-wi, -na/-ta, -mʌnTa/-wʌnTa* developed from participles. The auditive in *-m(ʌn)oʔ$_2$ / -w(ʌn)oʔ$_2$* takes the possessive (nominal) personal markers indicative

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Tab. 1: Inference and assumption in Nenets evidentials

INFORMATION SOURCE	TIME OF ACQUISITION OF INFORMATION	FURTHER MEANINGS	TERM USED	COMMONLY ATTESTED ALLOMORPHS	EXAMPLES
hearsay or inference	prior to speech act	mirative	indirective	*-mi/-wi -*	(36), (38)
assumption, logical reasoning			assumptive or presumptive	*-na/-ta*	(39)
future projection on the basis of sensory information	simultaneous with speech act: future projection		sensory forecast	*-mʌnTa/ -wʌnTa*	(43)
future projection on the basis of the speaker's logical reasoning			cognitive forecast	*-pt͡su*	(37), (40)

of its non-verbal origin. Example (35), from Tundra Nenets, illustrates the nonvisual sensory (or auditory) evidential.

(35)   Tundra Nenets (Burkova 2022: 693)
　　　　pʲi:-x°nʲa　　jibʲe-mon-ta
　　　　outside-LOC　　become.warm-EVID.SENS-POSS.3sg
　　　　'It has got warmer outside (the speaker can feel it).'

An indirective evidential with a hearsay meaning from Tundra Nenets is shown in (36). The same evidential can acquire a mirative reading.

(36)   Tundra Nenets (Burkova 2022: 693)
　　　　nʲadaŋi-ʔ1　　tʲikʌna　　jilʲe-wi-ʔ$_1$
　　　　NAME-PL　　there　　live-EVID.INDIR-3pl
　　　　'The Nyadongis lived there (they say).'

The "cognitive forecast" evidential in (37) contains speaker's prediction based on his knowledge and experience.

(37)   Tundra Nenets (Burkova 2022: 694)
　　　　sʌwa-w°na　　xa-b°ʔ$_1$-naʔ$_1$　　　　ta-pt͡su-doʔ$_2$
　　　　good-PROL　　ask-COND-POSS.3pl　　give-EVID.CF-OBJ.3pl
　　　　'If asked in a friendly way, they (will probably) give us [a woman].' (Speaker's prediction is based on his knowledge and experience).

Three epistemic modalities in the language differ as to their occurrence with evidentials. The superprobabilitive modality in -*manᵒŋkʌbʲa* implies 'high degree of certainty with no indication of the source' and cannot combine with evidentials.

The probabilitive modality in -*ke* implying low degree of certainty based on cognitive information source, obligatorily requires an evidential suffix specifying the source of information. This can be the indirective evidential as in (38), the assumptive evidential as in (39), or the marker of cognitive forecast as in (40).

(38) Tundra Nenets (Burkova 2022: 695)
jirʲi   sʌt͡ʃ   xʌnʲi-me-ki   tʲedalʌx°nα   jαli
old_man   very   get_frozen-EVID.INDIR-PROB.3sg   up_to_now   shiver.3sg
'The old man must have got pretty frozen – he is still shivering.'

(39) Tundra Nenets (Burkova 2022: 695)
tʌmnα   jαŋku-ʔ₁   pæ:w°dʲα-x°nα   joxo-dα-ki-ʔ₁
still   NEG.EX-3pl   dark-LOC   get_lost-EVID.ASSMP-PROB-3pl
'They are still absent. Probably they got lost in the dark.'

(40) Tundra Nenets (Burkova 2022: 695)
wʌrom-jα   mʲertʲα   xʌr°-tα   xanʌ-b͡tsα-ke-dα
get_dirty-IMP.3sg   wind   self-POSS.3sg   take_away-EVID.CF-PROB-OBJ.3sg
'([In windy weather] – If you lie down, your clothes will get dirty.) – Let it get dirty, the wind will blow it all away.' (my prediction on the basis of prior knowledge)

The approximative -*rʌxα* 'low degree of certainty based on sensory information' can be used on its own to indicate direct visual perception the speaker is not sure of (or if the speaker is prevented from seeing things properly), as in (41).

(41) Tundra Nenets (Burkova 2022: 695)
 tʲuku°   nʲe   nʲu:-x°wα-dα   xonʲo-rʌxα
this   woman   child-AFF-POSS.3sg   fall.asleep-APRX.3sg
'It looks as if his daughter has fallen asleep.'

The approximative can also occur together with four out of five evidential suffixes. The sensory non-visual or auditive, marker is placed after the approximative suffix, as in (42).

(42) Tundra Nenets (Burkova 2022: 695)
pʲixi pʲi-x°nʲ α   sʲidʲα   xunglʲα-r°   to-r°xα-wʌnon-dʲiʔ₂
outdoor_outside-LOC   two   NAME-POSS.2sg   come-APRX-EVID.NONV-POSS.3du
'(When it had got dark,) something was heard outside, as though the two Hunglias had come.'

The assumptive and the sensory forecast markers precede the approximative suffix, as in (43).

(43)　Tundra Nenets (Burkova 2022: 695)
　　　tʲuku˚　　jalʲa　　xajer°ʔ₁　　ŋʌdʲi-mʌndɑ-rʌxɑ
　　　this　　　day　　　sun　　　　appear-EVID.SF-APRX.3sg
　　　'It's going to be sunny today, it seems.' (I assume this with some doubt on the basis of visual perception)

The indirective suffix can occupy one of two slots with a difference in meaning. If the indirective marker precedes the approximative suffix, -rʌxɑ, it expresses inference, as in (44).

(44)　Tundra Nenets (Burkova 2004: 369)
　　　sʲudbʲɑ　　nʲanʲo　　　　sʲertɑ-we-r°xɑ-nʲuʔ₁
　　　giant　　　bread.ACC.PL　　bake-INDIR-APRX.3sg-DIP
　　　'The giant has baked the bread (as I see).'

If the approximative suffix precedes the indirective, the meaning is mirative, as in (45).[18]

(45)　Tundra Nenets (Burkova 2022: 695)
　　　xi:num-kʌwɑ-rɑʔ₁　　　　tʌnʲɑ-rʌxɑ-wi-nʲuʔ₁
　　　prayer-AFF-NOM.POSS.2pl　EXIST-APRX-INDIR.3sg-DIP
　　　'Your prayers seem to have had an effect!'

Past-tense forms are attested just for the auditive evidential. This is what we see in (46), from Taimyr Nenets.

(46)　Taimyr Nenets (Nikolaeva 2014: 113–115; Siegl 2016: 200)
　　　čenjaana　　pixine　　　weńaku　　mađar-mon-ta-ś
　　　yesterday　　night.LOC.SG　dog　　　bark-AUD-3sg-PST
　　　'Yesterday in the night, the dog barked.'

Combining the auditive marker with a tense suffix may be indicative of their origin in an erstwhile analytic construction with a grammaticalized auxiliary (see § 18.3.2.5).

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18 In other sources (e. g. Tereshchenko 1947, Labanauskas 1974, 1982, Salminen 1997, Ljublinskaja and Malchukov 2007, Nikolaeva 2014, Jalava 2014, 2017) the analyses of evidentials and their combinations with modal forms vary considerably (see also note 17).

18.3.2.2 Selkup

The evidential system in North Selkup[19] is composed of three terms:

(i) past narrative (or past inferential, in Urmanchieva 2014) marked with the suffix *-mpɨ*;

(ii) auditive marked with the suffix *-kunæ / -kun*;

(iii) non-firsthand evidential, also called "latentive", marked with the suffix *-nt*, which can combine with tense markers and the past narrative form.[20]

The three forms are in a paradigmatic opposition with an evidentially neutral indicative form. Similar to numerous languages in the region, this form may express directly acquired information (see Urmanchieva 2014: 69).

Evidentials are productively used in North Selkup, and only marginally so in South Selkup (Urmanchieva 2014: 66). The auditive forms with the suffix *-kunæ / -kun* are attested mainly in the Taz dialect of North Selkup (Gusev 2017b: 17) in the texts collected in 1920s; in texts from 1970s and later they are quite rare, practically replaced by the *nt*-forms (Urmanchieva 2014: 72).

The auditive is mainly used to talk about what the speaker learnt through sensory perception, primarily by hearing, as in (47).

(47) Selkup (Kazakevich 2022: 799)
      ukkɨr   tʃonto:-qɨt   nɪʎtʃi-k   yntɨ-ɲ-ɲ-ɨtɨ
      one   middle-LOC   such-ADV   hear-HAB.DUR-EP-3sg.OBC
      qup   tɑp   pɑtʃi-tɨ-kunæ
      man   this   chop-HAB-AUD.3sg
      'Once he hears: a man here is chopping (wood).'

The forms in *-mpɨ* "narrative past" regularly occur in folklore texts, often as an opening of a story, as in (48), and in narratives about the past.

(48) Selkup (Kazakevich 2022: 797)
      ilɨ-mp-ɑ   irɑ   imɑqotɑ-n-tɨ-sæ   kɨ-t   tʃonto:-t
      live-PSTN-3sg   man   old.woman-GEN-POSS.3sg-INS   river-GEN   middle-LOC
      'A man lived (long ago) with his wife (lit. his old woman) in the middle flow of a river.'

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19 The analysis is based on Kuznetsova et al. (1980), Urmanchieva (2014), Gusev (2017 a, b), Kazakevich (2022).

20 The "latentive" form (Kuznetsova et al. 1980) is labelled "narrative mood" by Prokof'ev (1935), and "inferential" by Helimski (1998b).

They are also used to express inference, with mirative overtones, as shown in (49).

(49) Selkup (Urmanchieva 2014: 79).
      Mannymp-a-ty: ira   kərty-mpa   captät
      look-AOR-3sg.OBC   old_man   nomadize-PSTN.3sg   long_ago
      '(He) looks: the old man moved off long ago.'

The nonfirsthand forms in *-nt* (labelled "latentive") are used in describing events in which the speaker did not participate. Information about them can be perceived directly or indirectly, accompanied by inference. The suffix *-nt* (with allomorphs) can be used on its own. The resulting form may be alternatively interpreted as a combination of the latentive marker with the formally unmarked aorist, as shown in (50).

(50) Selkup (Kazakevich 2022: 799)
      seʎtʃi   lɨmpɨ   ilɨ-nt-α   nɑj
      seven   eagle   live-LAT.EV-3sg   so.it.is
      'Seven eagles live (there) (they say / it is seen).'

The *-nt*-form can combine with future tense forming a prospective evidential, as in (51).

(51) Selkup (Kazakevich 2022: 799)
      il-ɛnnɨ-nt-ɨ
      live-FUT-LAT.EV-3sg
      '(He) will live.' (either based on visual perception or on logical reasoning)

In (52), it co-occurs with the past narrative marker.

(52) Selkup (Kazakevich 2022: 799)
      qən-mɨ-nt-ɔːn   nɑ   iːlɨ-læ   qən-mɨ-nt-ɔːn   nɑj
      go-PSTN-LAT.EV-3pl   so   rise-CVB   go-PSTN-LAT.EV-3pl   so.it.is
      'They flew off (lit. went) (it is seen), so, rising, flew off (went) (it is seen).'

These examples show that the *nt*-form covers (a) inference based on direct perception and ensuing inference, and (b) inference based on speech reports. The gamut of its meanings is reminiscent of indirective evidential, typical for the region. The semantic differences between forms with *-mpɨ*, *-nt* and the combination of *-mpɨ* and *-nt* require further study.[21] These forms – all of participial origins – tend to occur accompanied by verbs of perception, cognition, and speech. We hypothesise that the process of their desubordination may be in progress.

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21 Urmanchieva (2014: 83) suggests that the difference between *-mpɨ* and *-nt* in inferentive contexts could be described as "inference-statement" (*-mpɨ*) and "inference-hypothesis" (*-nt*); she does not include combined forms in her analysis.

18.3.2.3 Nganasan

Three evidential terms have been identified in declarative sentences in Nganasan:
(i) auditive or non-visual sensory,
(ii) inferential, and
(iii) "renarrative" (Helimski 1998a, Gusev 2007: 415) or "reportative" (Wagner-Nagy 2019, 2022).

In addition, the evidentially-neutral indicative is used (a) if the information has been witnessed, or (b) the speaker is sure of the veracity of it, or (c) if its source is not relevant. Tales and mythological narratives are cast in the indicative (Gusev 2007: 418).

The common North Samoyedic suffixes *-munəʔ* and *-munuj-* (with various allomorphs) mark information as auditive, as in (53), other sensory, and endopathic. The forms may reflect information acquired visually and by hearing if the auditory source is more important. The form takes possessive agreement suffixes (reflecting its non-finite origins).

(53)   Nganasan (Wagner-Nagy 2019: 283)
taharia̍a   ŋonəə   ba-mi   logi̯a-mini̵-či
now   one.more   dog-POSS1du   bark-AUD-POSS3sg
'Now our dog is barking [s/he can hear it].'

The inferential form also has a mirative extension, as shown in (54).

(54)   Nganasan (Gusev 2007: 425)
Tʼeliʔmid'i-ʔə-ʔ   baarbə-δuŋ   huntə-δuŋ   i-hᵘaδu
slow_down-PERF-3pl   master-POSS3pl   authority-POSS3pl   be-INFER.3sg
'(Slow down! – he cried.) They slowed down – evidently, their master is an authority for them.'

Further periphrastic inferential constructions consist of participial (past or present) forms of the lexical verb and a 'be'-auxiliary with inferential marking (*i-hᵘaδu*). The "narrative"/ "reportative" is marked with an allomorph of the suffix -HANHU- (with allomorphs) in (55).

(55)   Nganasan (Wagner-Nagy & Szeverényi 2022: 667)
ɲɑ:gəi-ʔ   bɑsu-bɑhu-ŋ.
good-ADV   hunt-REP-2sg
'They say that you are good at hunting.'

A further two forms within this category are "renarrative imperative" and "renarrative interrogative" (Gusev 2007) (alternatively analyzed as "reportative future" and "interrogative reportative" in Wagner-Nagy 2019: 281–282).

The renarrative imperative is formed by a combination of the renarrative suffix with the future tense marker. Its main function is transmitting a command by proxy.

This is shown in (56). This is an example of evidential in command (uncommon in the languages of North Eurasia, in contrast to other areas: Aikhenvald 2018a). The same form may have a prospective or a necessitive reading, depending on the context.

(56) Nganasan (Gusev 2007: 437)
   D'intə-güa-t'ə   ńi-ntə-bⁱambi̭-ŋ   koi-ˀ
   bow-PTCL-ACC.PL.2sg   NEG-FUT-REP-2sg   leave-CNG
   '(The master said, you must work for me and) Don't forget your bow (and arrows).'

The interrogative reportative in *-ha* is used for passing on somebody's question to another addressee, as in (57), or in echo-questions (similar examples are mentioned in Aikhenvald 2018a: 19–20).

(57) Nganasan (Gusev 2007: 439)
   ŋəmsu-ruˀ   təj-hᵘa
   meat-2pl   there.is-REP.INTER.3sg
   '(I was sent to ask:) Do you have meat? (lit. Does the meat of yours exist?)'

Evidential forms of the existential verb *i-* tend to grammaticalize into evidential particles (reportative *ibahu*, reportative-interrogative *ihᵘa*) accompanying indicative temporal forms (Wagner-Nagy 2019: 254).[22]

18.3.2.4 Enets

According to Siegl (2013, 2016, 2022), both Forest and Tundra Enets have the auditive evidential in *-(m)unu* (with allomorphs). Auditive can be marked for past tense, as in (58).

(58) Forest Enets (Siegl 2016: 199)
   ää-b'   nodu-bi-đa-š   kiđi   morä-unu-đa-š
   mother-POSS.1sg   hear-PERF-sg<3sg-PST   cup[ACC]   break-AUD-3sg-PST
   'My mother heard that [the child] broke a cup.'

The perfect in *-bi/-pi* and several modal forms appear to have evidential extensions (Siegl: 2013: 264, 300, 2022: 733). In contrast, Urmanchieva argues that *-bi/-pi* is a bona fide non-firsthand evidential ("indirective") with inferential, reportative, mirative meanings (2016: 123), rather than a perfect. She also shows that Forest Enets has developed a unique system of combined inferential and different modal meanings, via a combina-

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22 An evidential extension was also mentioned for primarily epistemic "speculative" mood marked by *-NTUə-RəKU* (present participle + similative suffix) (Wagner-Nagy 2019: 260–261). This form corresponds to the "approximative" in Burkova's and Nikolaeva's descriptions of Nenets.

tion of inferential and approximative suffixes ("speculative" in Siegl 2013: 288), similarly to Nenets. An alternative technique involves a set of analytic constructions with the past participle and an auxiliary 'be' in different modal forms (Urmanchieva 2016: 133).

In Forest Enets the assertive form 3sg of the verb 'say' *mańu*, often reduced to *mań*, "begins to resemble a quotative particle" with generic reference to the source of speech report, as in (59).

(59)   Forest Enets (Siegl 2013: 301)
        ḃäđi-xo   ni   kebi   mań
        iron-INDEF   NEG.AUX.3sg   be.sin.CNN   QUOT
        '(Keeping) something made of iron was not a sin (one says).'

For Tundra Enets, Künnap (2002: 146) describes an auditive, the "narrative" in *-bi/-pi*, and several "probabilitives" that express "an inferred action" and are said to be differentiated by temporal reference. Siegl (2022: 733) speaks about one clear evidential, auditive, and evidential overtones of several epistemic moods.

18.3.2.5 An interim summary

Samoyedic languages have complicated evidentiality systems, with a variety of meanings related to information source and epistemic modalities. Their unusual properties include:

(i) Combinability of evidentials with tense suffixes, with some sequences becoming synchronically noncompositional.

(i-a) Selkup has three temporal forms of "latentive" *-nt*, future tense > prospective;

(i-b) Nenets and Enets have past tense forms of the auditive;

(i-c) Nganasan has a narrative + future tense > rennarrative imperative.

(ii) Combinability with epistemic modality markers, including the "'similative" / "apprehensive" in North Samoyed.

(iii) Combinability of various evidentials with each other in Selkup.

Further special features include a tendency to form prospectives, thus expanding evidentiality into future. The most elaborate system is found in Nenets (Table 1): The language has a symmetrical pattern of past- and future-oriented inferential and assumptive evidentials. Selkup has just one prospective (future-oriented) evidential. The use of reported ("renarrative") evidential in questions and commands in Nganasan sets it apart from other languages in the family and in the region. Directly acquired information is expressed through evidentially neutral past tenses.

The meanings of the auditive form are consistent across Samoyedic. Auditive is used to cover one's own feelings ("endopathic" contexts), and to describe extrasensory perception (we return to this in § 18.4). The origin of the common Samoyedic auditive is a matter of some controversy. Künnap (2002: 151) interprets it as the result of grammat-

icalization of the common Samoyedic noun *mun (or *mon) 'voice' or, in Selkup, of the word *ku- 'ear; to hear'. This is reminiscent of the grammaticalization of nouns within a ("mermaid") GNMC construction. According to an alternative analysis by Gusev (2017a, b), the marker goes back to the verbal noun in *-mon (in Selkup to a verbal noun in *-ku) through desubordination of complement clauses with perception verbs. The auditive tends to be used mostly with the verbs of speech – another point in favour of Gusev's (2017b: 17) approach.

18.4 Other language families and isolates

We now turn to further language families and isolates – Yeniseian languages (§ 18.4.1), the two isolates, Yukaghir (§ 18.4.2) and Nivkh (§ 18.4.3), and Chukotko-Kamchatkan (§ 18.4.4) and Eskimo-Aleut (§ 18.4.5), spoken in the Eastern periphery of North Asia.

18.4.1 Yeniseian languages

Yeniseian languages appear to be relatively poor in categories related to the expression of speaker's knowledge. No grammatical evidentiality has been documented for Ket or the extinct Kot (Werner 1997a, b). One particle, *bin*, was described in Krejnovič (1969: 24–5) as a marker of an event that "took place in the absence of the speaker, without his participation and volition, in sleep, without his knowledge, in an unknown way". In his discussion, Shabaev (1982) treats *bin/ben* (with its several allomorphs) as an aspectual marker with perfective meaning. However, many of his examples are used in typical "pre-mirative contexts" and have mirative reading, as in (60):

(60)　Ket (Shabaev 1982)
　　　bu　　qa:　　di:mbes',　bur'a　ket　　qot　　　ben　　du:nu
　　　he　　home　he.came,　his　　man　　already　MIR　　he.died
　　　'He came home (but it turned out that) his friend had died already.'

Georg (2007: 320) analyses *bi:n* or *ben* as a mirative or inferential particle (no examples are given); according to Vajda (2004: 90), this is a purely mirative particle. In (61), *bān* 'portrays the narrated event as noteworthy and unexpected'.

(61)　Ket (Vajda 2004: 90)
　　　sa²q　　　bān　sóòŋ　dáɣàraq
　　　squirrel　MIR　there　she.lives
　　　'It turns out that a squirrel lives there.'

The particle is homonymous with the negator (the two are distinguished by intonation only). In addition, it appears that the particle *qai* (Gajer 1971, Grishina p.c.) also marks

mirativity in pre-mirative contexts. In (62), *qai* indicates an abrupt change of situation in the next clause.

(62)   Ket (Gajer 1971)
  Buí qai qe:n-il-dam-en   taj-as'
  they PTL face.down-lie-PST-PL.SUB frost-INS
  d-ej-q-oŋ-on-a
  he(Sub)-kill-start-them(Obj)-PST-ONCE
  'They were lying down, (and then) he started to kill them with frost'.

In a pre-mirative context, the clause following *qai* has a mirative reading, as in (63).

(63)   Ket (Gajer 1971)
  Qai d-k-ol-du,   bilä hʌnen-em, bilä d-oːt-e-v-et
  PTCL he-at-PST-look how small-PRED how I(Sub)-upland-PRS-it(Obj)-carry
  'He looked – how small it is! How can I carry (water) in it?'

Some of the expressive particles mentioned in Werner (1997a: 316) may also have mirative overtones.

18.4.2 Yukaghir

Yukaghir has a direct and an inferred evidential as well as a prospective form with evidential meanings (Maslova 2003b: 233–234; 2003a: 172–174, and Lukina 2018). A resultative nominalization can be used as evidentiality strategy, to refer to inference made on the basis of visually obtained information (Maslova 2003b: 233). The inferred evidential may acquire mirative overtones (Maslova 2003b: 229). Maslova (2003a: 409–411) mentions an additional complex construction which consists of an instrumental form of a deverbal noun followed by the verb of auditory perception, to refer to events perceived aurally. In combination with motion verbs, the construction can refer to "extrasensory perception". The construction itself is reminiscent of the auditive (or non-visual evidential) in Selkup (Gusev 2017b). In both languages, this evidential is used for extrasensory perception, and may be considered indicative of language contact in the past.

 Ilyina (2017) suggests that the prominence of auditive forms could have to do with the type of tundra dwellings – skin-covered tents which allow one to hear what is happening outside without seeing it. She also suggests that treating supranatural events as "invisible" by speakers of Samoyedic languages and of the unrelated Yukaghir could be accounted for by shared mythological concepts and similar material culture. Across the world's languages, non-visual evidentials are, not infrequently, the preferred choice in talking about supranatural experience. This is a feature of languages spoken in the tropics and surrounding regions, e. g. Tariana (an Arawak language) and East Tukanoan languages in Brazil and Colombia, Cariban languages in Brazil and Suriname, Wintu (an

isolate from California) and the non-propositional evidentiality in Dyirbal, an Australian language (see Aikhenvald 2018a, Dixon 2014). The fact that auditory evidential is used in a similar way across different languages and cultures is indicative of a universal tendency shared by a number of forest- and tundra-dwelling minorities.

18.4.3 Nivkh

Nivkh, another Paleo-Siberian isolate, is a highly endangered language. Detailed materials available are based on Krejnovič's earlier work with full speakers of the language, in addition to publications by the late Galina Otaina (a native speaker) and the discussion and analysis in Nedjalkov and Otaina (2013). Gruzdeva's work (1997, 1998, 2001, 2002, 2021) is based on a summary of earlier sources and original work with partial speakers of the language (an additional problem with her analysis lies in the lack of clear boundaries between modality and evidentiality). The information in the existing sources is partly contradictory, which makes the analysis difficult.

Nivkh appears to have – or to have had – two subsystems of evidentiality distinctions.

I. A three-term distinction of direct (eyewitness), reported, and quotative evidentiality (typical for the region) has been documented for statements. According to Krejnovič (1979: 316), direct (or "witnessed") evidentiality is marked with the suffix *-if(u)-/-iv(u)* (see also Panfilov 1965: 118). The direct evidential can refer to visually obtained information, as in (64). The evidential marker co-occurs with a modal (Gruzdeva 1998: 29, 43).

(64) Nivkh (Gruzdeva 1998: 43, 1997: 14)
      Jaŋ   ra-iny-ryɣm-d
      he   drink-MOD-EVID-FIN
      'He is going to drink.' (I see this)

The suffix *-ra* (Nedjalkov and Otaina 2013: 113) appears to be a focus marker, used to "attract the interlocutor's attention". Gruzdeva (2021: 310–312) considers it an exponent of "direct evidentiality" and "emphasis", and a clause-chaining marker which is occasionally used in independent sentences, in combination with the progressive suffix, if the speaker has personally observed the situation s/he is talking about. It remains unclear how the varied markers of direct evidentiality as outlined by different authors interact (or interacted) in the language (see further below).

Reported information – referred to by Krejnovič (1979: 316–317) as "indirect" (or "nonwitnessed") – is expressed with a complex form consisting of the verb with the suffix *-vu-t/-vu-r* accompanied by the speech verb *itnt/itt'* (see also Panfilov 1965: 122–123). According to Nedjalkov and Otaina (2013: 191), verbal forms marked with this suffix combine two meanings – of reported speech and of a quotative evidential, since the author of the speech report can be stated.

In contrast, the morpheme =*furu/=pʰuru/=vuru* is analysed a reported evidential par excellence (with the source of speech report not being identified: Nedjalkov & Otaina 2013: 191). This bound morpheme is classified as a particle in Gruzdeva 1998: 57, and as a clitic in Gruzdeva 2021. It attaches to a fully inflected verb, as in (65).

(65) Nivkh (Gruzdeva 1998: 57)
      T'olf   qhav-katn-i-d-furu
      summer   be.hot-INTENSIFYING-FUT-FIN-REP
      'It is said (that) summer will be very hot.'

According to Nedjalkov and Otaina (2013: 191), the meaning of the morpheme =*furu/=pʰuru/=vuru* goes beyond reported evidentiality: This can be used as a device "for rendering inaccurate or hearsay information of unknown origin" and may extend into the domain of inferentiality. This is also used in folktales as the token of the narrative genre. The reported evidential can combine with nouns and adverbs in one-word ellipti-cal sentences (however, the information is not sufficient to decide whether this can have non-propositional scope: Nedjalkov and Otaina 2013: 199–201).

II. A binary distinction of visual versus nonvisual information source in apprehensive, or "preventive", modality was documented by Krejnovič (1934, 1979: 316). According to Gruzdeva (2001: 70), the firsthand preventive markers "express prevention in situations where the speaker directly observes the actions, whose adverse consequences he wants to prevent, being performed by the listener" (sic). In contrast, nonfirsthand (or "non-ev-idential") preventive forms are used "to stress that his/her anticipation of adverse con-sequences is prompted not by observing some actual facts but by some 'previous "neg-ative" experience'" (Gruzdeva 2001: 70). It is unclear whether younger Nivkhs – who no longer master the language in its entirety – use the two apprehensive forms (other instances of the restructuring of Nivkh under the influence of Russian in the situation of language obsolescence are discussed by Gruzdeva (2002). This distinction is rare, but hardly unique to Nivkh. The existence of visual and nonvisual apprehensives have been documented in a few other languages across the world (including Tariana, an Arawak language from Brazil; Aikhenvald 2010: 141).

An unusual feature of Nivkh used to be a special case marker on the subject of a speech report, called "reported nominative" by Nedjalkov and Otaina (2013: 52), fol-lowing Krejnovič (1979: 302; 1973: 63). This case is particularly productive in the East Sakhalin dialect, and only partially survives in the Amur dialect. An example is in (66) (Nedjalkov and Otaina 2013: 52, repeated with different glosses in Gruzdeva 1998: 21).

(66) Nivkh (Nedjalkov & Otaina 2013: 52)
      Tu+tulf   Muzgun-χan   mirn+wo-roχ
      this winter+NOM   Muzgun-RNOM   we+village-DAT/ADD
      laɣ-nə-vu-r   it-nt
      visit-FUT-REP-CONV:NARR:3sg   say-IND
      '[They) say [that] this winter Muzgun is going to visit our village.'

The scope of the marker is the whole clause; that is, it cannot be considered an exponent of non-propositional evidentiality along the lines of Tsou, a Formosan language, with evidentiality distinctions with NP-scope fused with cases (see Aikhenvald 2021a, for a discussion). The Nivkh "reported speech case" is unusual in that it expresses an evidential specification on the clausal level in clauses marked for reported evidentiality (using a fixed combination of -*vu*- "reported evidential" and -*r* "narrative converb" third person; Nedjalkov and Otaina 2013: 43, 78). Note that no examples of non-propositional evidentiality have been found so far in the languages of the region.

Nivkh appears to have a mirative marker *hari*, based on a grammaticalization of the verb *haD'*- 'be' (Panfilov 1965: 216; some examples are in Gruzdeva 2021: 311–312). Panfilov considers it an independent verb, while Gruzdeva treats it as a clitic. Gruzdeva (2021) considers this form an "obvious" combination of the verb *ha*- 'do so' and an "expressive variant of the emphatic/evidential suffix -*ra*". This hypothesis requires further evidence. In the Amur variety the marker is analyzed as a a suffix (-*cʰari*) (Nedjalkov and Otaina 2013).

Cross-linguistically, visual or direct evidentials rarely have any mirative extensions (Aikhenvald 2021a: 35; see § 18.3.1.1–2 on Ob-Ugric languages). As mentioned in I above, the status of the suffix -*ra* remains unclear (since it is not considered a marker of evidentiality by either Nedjalkov and Otaina 2013: 113 nor by Krejnovič 1979: 316).

In summary: the system of evidential distinctions in Nivkh has undergone drastic changes due to language obsolescence, under the impact of the dominant Russian. A three-term distinction documented by Krejnovič and also Nedjalkov jointly with Galina Otaina (native speaker and scholar of Nivkh) appears to be no longer in use by partial speakers and rememberers of the language. Along similar lines, a visual versus non-visual distinction in the apprehensive modality is no longer in use.

18.4.4 Chukotko-Kamchatkan languages

The existence of evidentiality in Chukotko-Kamchatkan languages is problematic (see a full grammar in Dunn 1999). According to Volkov et al. (2012), Chukotko-Kamchatkan languages have evidential distinctions based on the opposition of two types of finite verbal forms (reminiscent of the opposition of a finite verb versus a participle in Altaic and Uralic languages):

(a) 'personal' which may include person and number markers for subject and object as well as markers of aspects and modalities, and

(b) 'adjectival' whose morphological structure is similar to that of adjectives in predicative function in Chukchi, predicative and attributive function in Koryak and Alutor.

Volkov et al. (2012: 431–432) argue that the difference between personal and adjectival perfect forms in Chukchi, Koryak, and Alutor can be interpreted in certain contexts as

neutral/direct evidence (preferred in personal stories) and indirect evidence, inferential or reportative, possibly with mirative nuances (preferred in folklore texts and stories about other persons); the perfect in Chukchi has mirative connotations more often than inferential (Volkov and Pupynina 2016: 547). Volkov et al. (2012: 434, 438–439) suggest that adjectival perfect could historically be an evidential, retained this function in folklore narratives, and was "reduced" to perfect (i. e. background information outside of the main story line) in colloquial language.

According to Volodin (1976), the Itelmen "infinitive 2", known also as present participle, denotes an action directly perceived, visually or acoustically, but only as a dependent component in constructions with perception verbs (1976: 288–289, 291); "infinitive 3" however, also known as past participle or perfect, is very frequent as an independent predicate (1976: 294–296) and "practically every folkloric text starts with the 3rd infinitive form" (1976: 296). Volkov and Pupynina (2016: 560–561) offer examples of its reportative use.

These authors postulate an areal distribution of extensions of the Kamchatkan perfect: a continuum Chukchi – southern dialects of Chukchi – Koryak – Alutor – Itelmen. In the South the tendency is to develop indirective extensions, in the North – emphatic ones. In the North the perfect is said to be used for backgrounded information in narratives, in the South it is the main narrative form (Volkov and Pupynina 2016: 564–565). Chukchi, Koryak and Alutor usually show similar characteristics different from Itelmen (sometimes considered an isolate rather than part of the Chukotko-Kamchatkan family). If identified correctly, these properties of the perfect forms set Chukchi apart from the other three languages. Similarity between Koryak and Itelmen perfects could be explained by areal influence (Volkov and Pupynina 2016: 565).

A periphrastic construction with mirative overtones in Chukchi was identified by Fortescue (2009), based on Dunn (1999). Maltseva (1998: 172) describes an aspectual affix denoting "suddenness, unexpectedness, accidental character" of an action in Alutor verb, reminiscent of mirativity.

18.4.5 Eskimo-Aleut languages

The descriptions available to us are based primarily on the varieties spoken in North America; not much is known about the varieties spoken in Northern Asia, west of the Bering strait.

Evidential distinctions across Eskimo languages are expressed with a variety of sentential suffixes which do not constitute one paradigm. For this reason, they have been described as examples of "scattered" expression of evidentiality (Fortescue 2003: 294–296, Krawczyk 2012: 6; see also Miyaoka 2012: 1264–1271). Examples include an indirect evidential, a perfect marker referring to inference based on visually obtained information, a further perfect marker referring to a logical assumption, and a reportative marker. The reportative *-guuq-* appears to be frequent in narrative discourse and

may have additional overtones of information obtained via hearsay and relevant for the present moment (MacLean 1995: 162, on Inupiaq). In addition, participial forms accompanied by the stative/resultative suffix *-(u)ma* in Central Alaskan Yupik may have a meaning of an inferred evidential, translated as 'evidently' (Fortescue 2017: 699, 693). This is reminiscent of analytic expression of evidentiality across Northern Asia.

In their grammar of the Bering Island ("Siberian") Aleut, Golovko, Vakhtin and Asinovskij (2009: 243–244) describe an "evidential construction" which consists of a complex predicate with the verb in a finite or conjunctive form accompanied by the copula *aχta-*, always in the nonfuture form in *-ku* (*aχta-ku-*). Its semantics is described as follows: "the speaker does not take responsibility for the trustworthiness of information", and "in Russian translations almost always the word *okazyvaetsja* 'as it turns out' is used".

Judging by examples, it appears to be an indirective-inferential form with epistemic and mirative overtones. In (67), the 1st person effect goes together with the causative-passive meaning of the predicate.

(67)   Bering Island Aleut (Golovko, Vakhtin & Asinovskij 2009: 243)
      tiŋ   *saɣa-ni-na-χ*   *aχta-ku-q*
      1SG.OBJ   sleep-CAUS-PASS-3SG   AUX-NFUT-1SG
      'As it turned out, I fell asleep (lit. I was put to sleep).'

Note that for North America (Atka and Attu) Aleut Bergsland (1997: 85, 119) describes a small system of grammatical evidentiality (similar to A2 in Aikhenvald 2004) with the opposition between the inferential *-x̂ta* and evidentially unmarked forms. The inferential marker "indicates an event experienced otherwise than by eyesight". Further, an alternative to the inferential suffix is the copula *a-* followed by this suffix; with conjunctive and participial forms it forms a complex predicate with a similar inferential meaning (Bergsland 1997: 102, 199, 209). The inferential complex predicate "indicates an event or state of affairs inferred from circumstances or report, including stories, or experienced by senses other than eyesight" (see also pp. 211, 246). The auxiliary in the present tense form indicates inference about the present or the immediate past (Bergsland 1997: 209), and with remote past it indicates a past event "being discovered or talked about" (Bergsland 1997: 322). However, it is unclear whether there are any mirative overtones. A simple present form may indicate something immediately perceived (Bergsland 1997: 321).

The form *ax̂ta-* in North American Aleut appears to be analysable (as it is part of the inferential marker). In contrast, marker *-χta-* in the Bering island Aleut functions as a resultative (Golovko, Vakhtin and Asinovskij 2009: 84). The form *aχtaku-* is no longer synchronically segmentable, with only personal markers combining with it. We hypothesize that it is in the process of grammaticalization into an evidential particle.

18.5 Conclusion

Evidentiality systems in the languages of Northern Asia vary in their size and in the semantic distinctions expressed. Many expand on the basic types of distinctions outlined in Aikhenvald (2004; 2018a). Disparities in the quality of data and analytic approaches underlie recurrent difficulties in the interpretation of many of the systems. For some, the jury is still out.

All Altaic families – Turkic, Tungusic, and Mongolic – have evidentials (see also Johanson 2018, 2021, Malchukov 2000, Brosig & Skribnik 2018).

A typical Mongolic three-term system in past tenses – with a tripartite distinction of neutral, direct, and indirect suffixal finite forms – was attested in Middle Mongolian. This was lost in the North Mongolian Buryat. The language innovated a complex system of periphrastic forms (a participle + an auxiliary) with evidentiality distinctions, with at least four terms: indirect, direct, inferential, and common knowledge (on the basis of a quotative verb), with mirative extensions. This is in addition to other, autonomous means of marking mirativity.

Common Turkic is widely believed to have had an evidential system with two choices, restricted to past tense and employing one finite and one non-finite form. One term, referred to as "indirective", covers inference, assumption and logical reasoning, and speech report (a participle in finite use). The other term may allow for one of two alternative interpretations:

(i) as a special form with an evidential meaning covering information acquired through vision and other means of sensory perception, or

(ii) as an evidentially neutral form interpreted as referring to sensory perception as a consequence of discourse implicature.

As we saw in § 18.2.1, this is a typical issue for modern Turkic languages across the region. They tend to expand the erstwhile two-term system, in agreement with the following scenarios.

(A) The system of suffixal past tenses is expanded through a series of periphrastic forms (a converb or a participle + an auxiliary) with evidential and mirative extensions developing into main meanings. Forms referring to direct perception forms develop present tense reference.

(B) A third term is added to the system of suffixal past tenses. This can be either an evidentially neutral form (as in the case of the North Siberian Turkic perfect) or a specialized inferential-mirative, grammaticalized in South Siberian Turkic on the basis of periphrastic forms (a converb with an auxiliary *-p tur-* > inferential-mirative *-ptIr*).

(C) Particles with evidential meanings are grammaticalized on the basis of former auxiliaries.

(D) An additional reported evidential evolves via grammaticalization either of verbs of speech, or quotative verbs (see Matić & Pakendorf 2013), as in South Siberian Turkic, or of nouns meaning 'word, speech, rumour', as in North Siberian Turkic.

Both (B) and (C) result in the emergence of new semantic types of evidential systems, so far not attested in the typological literature. For instance, South Siberian Turkic languages have started to develop present tense evidential terms referring to direct perception which tend to acquire a mirative meaning in some contexts. We cannot exclude that these languages have larger and more elaborate evidential systems going beyond these terms. Directly acquired information tends to be expressed via forms which may alternatively be considered evidentially neutral.

Tungusic languages resemble Old Turkic in usually having two choices restricted to past tenses – finite neutral and participial perfect/indirect evidential (evidential readings being the more pronounced the closer the contact with Turkic). South Tungusic languages add to this a reported evidential (expressed via particles grammaticalized from the verb of speech). The interpretation of the evidentially neutral form varies from analyst to analyst, and is oftentimes associated with marking directly acquired information, like in Turkic studies. Even appears to add to these an inferential evidential (evolved from a particle of similative origin).

Similar small systems with just two choices are a feature of Yukaghir, Aleut, and possibly Chukchi, Koryak, and Alutor, from the Chukotko-Kamchatkan family.

Evidentiality is a pervasive feature of Uralic languages (Haarmann 1970, Skribnik & Kehayov 2018). Within the region, Ob-Ugric languages North Mansi and North Khanty stand apart from the rest of the region in their strong orientation towards expressing expectation of knowledge (mirativity) rather than source of knowledge (evidentiality). Both languages have a set of evidentials of participial origin. Each evidential has a strong mirative overtone, with a two-tense distinction: present tense direct perception/mirative and past tense inference/mirative, active and passive. These languages can be termed "mirativity-prominent". The exact pathways of the development of mirative distinctions at the expense of information source, and the usage of the forms, are issues for further investigation. Just one Mansi outlier, Ivdel Mansi, has the same set of forms with predominantly evidential meaning; East Khanty limited their use to folklore, developing a new indirective marker for the colloquial speech.

Within the Uralic family, Samoyedic languages offer the most complex picture. All the languages have a special auditive, or nonvisual sensory, evidential. Evidential forms can combine with tense markers (past or future). Selkup and Nganasan have three evidentials: auditive, reported (or past narrative), and inferential. The three-term system in Enets spans auditive, quotative, and apparently also an indirective evidential with inferential and reported meanings (and a special mirative form).

Samoyedic languages – and Yukaghir – tend to express prospectivity, extending evidentiality distinctions into the future (see the notion of "prospective evidential" in Maslova 2003a: 175–176; see also Aikhenvald 2021a). Nenets has the most elaborate and

typologically unusual system, in that inferential and assumptive evidentiality is also distinguished in future tense. The indirective/inferential term with past reference is paralleled by a special form for future projection based on sensory information ("sensory forecast"). The assumptive term – whose use is based on logical reasoning based on past experience – also has a counterpart in future. This term indicates projection of what is going to happen based on reasoning ("cognitive forecast").

Nivkh, an isolate, is another language with a number of dauntingly unusual features. According to older sources (section 18.5). the language had a three-term system: direct, reported or indirect, and quotative evidentials in statements, and a visual/nonvisual distinction in apprehensive modality (in addition to a special mirative marker). Sadly, due to the advanced stage of language obsolescence and the nature of existing sources, the exact nature of each distinction is hard to ascertain.

Eskimo languages offer a classic example of scattered expression of evidentiality, with numerous distinctions in various places within the verbal word (including indirect evidential, inference based on visually obtained information, logical reasoning, and speech report).

In most languages, the expression of evidentiality tends to be restricted to past tense and/or perfective and resultative aspects (along the lines of the "Pan-Eurasian" evidential perfect outlined by Haarmann 1970; see also Aikhenvald 2021a). Newly developed forms tend not to have these restrictions. Present tense forms of evidentials in Ob-Ugric and South Siberian Turkic express immediate perception with mirative meanings. Future tense forms (or prospectives) have been described for inferred and assumed information sources. This is especially striking in Samoyedic languages. Further investigation is needed, as the status of numerous periphrastic forms and particles remains unclear. Constant renewal of forms and introduction of new ones based on different grammaticalization pathways, from reinterpretation of analytic constructions to desubordination is a pervasive feature of the region.

Another notable feature of the area is the consistent presence of a catch-all indirective term, which typically covers inference, reasoning, and speech report (this differs from other regions, including Amazonia and the Tibeto-Burman domain, where terms of this nature are a rarity). A catch-all indirective form has been attested in tense systems of various sizes, from a binary opposition of past tenses to systems with further complexity.

Numerous languages of the region have evidentially-neutral terms. Such forms may be interpreted as referring to visual, or directly acquired information, as a result of discourse implicature. No indigenous languages of North Asia have a two-term system consisting of an evidentially neutral form versus a reported evidential. This contrasts with many other regions of the world where such systems appear to be common; examples include Estonian (Uralic), Basque (isolate), and Língua Geral (Tupí-Guaraní).

Languages of the region share several pathways in the evolution of evidentiality and mirativity. Table 2 features some of these.

A special point of interest for numerous languages of Northern Asia concerns the role of non-finite verb forms in the development of bona fide evidential and mirative distinctions (see Table 2). In some instances, erstwhile non-finite (or nominalized) forms undergo the processes of "finitization" (discussed at some length by Robbeets 2015 and 2016) and evolve into independent predicates of main clauses (see also Malchukov 2013, Jalava 2016).

Following a relatively common process of desubordination, an erstwhile non-main clause (typically a complement clause) will acquire the status of a main clause due to conventionalized omission of a matrix clause, developing a new paradigm (see, for instance, Campbell 1991 on the emergence of evidentiality in Estonian; Friedman 2018, Aikhenvald 2004: 281–283, and 2021a, for a summary of this and similar instances). This pathway has been attested for mirative forms in a number of Turkic languages (Sakha, Altay-kiži, Tuvan, and Shor: § 18.2), and Ob-Ugric North Mansi and Eastern Khanty (§ 18.3.1). A similar origin for the auditive, or nonvisual sensory, evidential in Samoyedic was suggested by Gusev (2017a, b).

Alternatively, the process of reinterpretation may involve grammaticalization of a copula or an auxiliary to a particle or an affix.[23] Whether the process of direct "finitization" of erstwhile non-finite forms is a corollary of the absence of copulas in nonverbal predication is a question for future study.

A further pathway involves reinterpretation of participles, or verbal adjectives, originally used as noun modifiers – often within what is known as "general noun-modifying construction"; it is another feature present in this region. As a consequence of grammaticalization and concomitant phonological depletion of the erstwhile head nouns into particles or affixes, participles may develop into independent evidentiality-sensitive predicates. Examples of grammaticalization of head nouns to evidentiality markers (see Tsunoda 2013, 2020), especially of nouns meaning 'word, speech' or 'sound' to reported evidentials, come from North Siberian Turkic, East Khanty, Yukaghir, and possibly Samoyedic (an earlier hypothesis ascribes the origin of the auditive to the noun 'sound'). In Ob-Ugric and North Mongolic this pathway of grammaticalization results in the emergence of nominalizers ('man', 'thing', 'place' etc.) in "standard" relative clauses and of modals with possible evidential extensions in GNMCs. We hypothesize that the grammaticalization process "head noun > functional word" is of an areal nature. Further research is needed.

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23 Or via what Evans (2007: 409) refers to as "direct reanalysis" without intermediate process of grammaticalization of forms (further examples are in Aikhenvald 2021a,b).

Tab. 2: Pathways of evolution of evidential and mirative markers in Northern Asia

	finite verb suffixes (of unclear origins)	finitization of participles as predicate heads	productive periphrastic constructions	development of aux > *particle* > suffix on a finite verb within a grammaticalized periphrastic construction	verb of speech > reportative *particle*	GNMC's head noun > *particle*	*particles of* other origins	desubordination
Turkic South	–	+	+	+	<+	–	+	+
Turkic North	–	+	–	+	–	+	+	+
Tungusic	–	+	(+)*	–	+	–	+	–
Mongolic	+	(+)*	+	+	<+	(+)*	+	–
Ob-Ugric	–	+	–	–	–	+ (East Khanty)	+	+
Samoyed	–	+	+	?	<+ (Enets)	+?	+	+?

Conventions:

<+: in the process of grammaticalization

+?: different opinions concerning categorization (Samoyedic auditive: either GNMC or desubordination)

(+)* present in other categories, e. g. aspectual or modal, possibly with evidential extensions (perfects in Evenki and Buryat, modals in Ob-Ugric and Buryat etc.)

Markers of reported speech, or hearsay, frequently develop on the basis of quotative verbs and verbs of speech (along the lines of Saxena 1988, Matić & Pakendorf 2013, Alcázar 2018). Examples come East to West from Nivkh (a Paleo-Siberian isolate), geographically close to it Southern Tungusic, then South Siberian Turkic languages and Buryat; in the North these are only marginally attested in Sakha, a Turkic language, and in Enets, a Samoyedic language. This also suggests some kind of areality.

Finally, one further distinctive feature of this region is the prominence of mirativity – in what could be called the West-Siberian mirativity belt. This is a salient feature of Ob-Ugric languages, Siberian Turkic (see § 18.2.1.1.1 on Altay-kiži where a large system of mirativity markers, with different degrees of strength of mirativity, may have been introduced at different time periods, along the principles similar to those of Jespersen's cycle) and of North Mongolic Buryat. We hypothesize that a Yenisean substratum may have played a role here. We can recall that Ket, the only extant language of the family, has exponents of mirativity rather than of evidentiality. This issue requires further study.

Our overview of evidentiality and associated concepts in the languages of North Asia offers a preliminary glance at a plethora of complicated and hitherto poorly understood systems. More studies – based on immersion fieldwork and comprehensive analysis – are de rigueur before we could get a complete picture.

Abbreviations and conventions

Forms in capital letters for Turkic and Samoyedic languages represent the most frequently attested underlying allomorphs. Personal names are glossed as NAME.

1, 2, 3	first, second, third person	CONV:NARR	narrative converb
ABL	ablative	CVB	converb
ACC	accusative	DAT	dative
ADD	additive	DIP	discourse particle
ADV	adverb	DIR.EVID.PST	direct evidential past
AFF	affix	EP	epenthetic
AOR	aorist	EVID	evidential
APRX	approximative	EVID.ASSMP	assumptive
AUD	auditive	EVID.CF	evidential cognitive forecast
AUX	auxiliary	EVID.INDIR	indirect evidential
CAUS	causative	EVID.NONV	evidential nonvisual
CNG	connegative	EVID.PRS	evidental present
COND	conditional	EVID.PST	evidential past

EVID.PST.PASS	evidential past passive	PERF.ASP	perfective aspect
EVID.SENS	evidential sensory	pl, PL	plural
EVID.SF	evidential sensory forecast	POSS	possessive
EXIST	existential	PRED	predicate
FIN	finite	PROB	probabilitative
FUT	future	PROL	prolative
GEN	genitive	PROPR	proprietive
GNMC	general noun modifying construction	PRS	present
		PRS.AUD	present auditive
HAB	habitual	PST	past
HAB.DUR	habitual durative	PST.INDIR	indirective past
IMP	imperative	PSTN	past narrative
IND	indicative	PTCL	particle
INDEF	indefinite	PTCL.FOC	focal particle
INDIR.MIR.PST	indirect mirative past	PTCL.MIR	mirative particle
INFER	inferred	PTCP.FUT	future participle
INS	instrumental	PTCP.HAB	habitual participle
INTENT	intentional	PTCP.PRS	present participle
LAT.EV	latentive evidential	PTCP.PST	past participle
LOC	locative	PTCP.RES	resultative participle
MIR.PRS	mirative present	PTL.EVID	evidential particle
MIR.PST	mirative past	Q	question
MIR.PST.PASS	mirative past passive	QUOT	quotative
MOD	modal	REFL	reflexive
MOM	momentative	REP	reported
NEG	negation	REP.INTER	reported interrogative
NEG.AUX	negative auxiliary	RNOM	reported nominative
NEG.EX	negative existential	sg	singular
NFUT	nonfuture	sg<3sg	third person subject fused with object (any person)
OBC	object conjugation		
PCL.FOC	focal particle	SOC	sociative
PERF	perfect; perfective	Sub	subject
PERF_PTL.EMPH	perfect emphatic particle	SUPP	supposition

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