



**HAL**  
open science

## Distance in tensed nominals

Evangelia Adamou

► **To cite this version:**

Evangelia Adamou. Distance in tensed nominals: A typological perspective. B. Sonnenhauser & A. Meermann. Distance in Language, Cambridge Scholars Publishing, 2015. halshs-01422909

**HAL Id: halshs-01422909**

**<https://shs.hal.science/halshs-01422909>**

Submitted on 22 Apr 2019

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# DISTANCE IN TENSED NOMINALS: A TYPOLOGICAL PERSPECTIVE

EVANGELIA ADAMO

## **Abstract**

The present paper focuses on the mapping of distance in space and its temporal expression by the so-called overt nominal tense and special attention is paid to distals. Overt nominal tense is a relatively rare phenomenon cross-linguistically and one that is clearly under-studied. Among the few languages that can be considered to use the nominal tense, only a handful exist that make systematic use of distal noun determiners to encode time. This small sample indicates that there is not a one-to-one relationship between distance in space and past or future reference. The available data rather encourage us to consider that, in tensed nominals, distal reference in space is associated with distal reference in time from a 'here and now' situation, be it in the past or the future.

## **1. Introduction**

Several scholars have drawn attention to the shared linguistic means encoding time and space across the world's languages. It has been argued that space is primary and therefore serves as a metaphor for time (Lyons 1977; Fleischman 1989; Heine, Claudi and Hünemeyer 1991). The mapping of space to time has been examined for tense and aspect markers (e.g. Traugott 1978; Dahl 1985; Bybee, Perkins and Pagliuca 1994), adverbials (Haspelmath 1997) and case systems (Evans 1995; Janda 2002). The present paper focuses on the mapping of distance in space and its temporal expression by the so-called overt nominal tense.

Overt nominal tense is a relatively rare phenomenon cross-linguistically and one that is clearly under-studied (Nordlinger and Sadler 2004), which has also been questioned (Tonhauser 2007) and still needs to be defined and examined using more solid empirical data. Its definition and a discussion of

the theoretical implications are presented in section 2. As shown in section 3, among the few languages, which can be considered to use nominal tense, only a handful exist that make systematic use of distal noun determiners to encode time. Some preliminary concluding remarks are presented in section 4.

## 2. Tensed nominals: theoretical background

It is widely accepted in contemporary general linguistics, within both the functional and generative tradition, that nouns are time stable as opposed to verbs. For example, Givón (2001) observes that nouns are among the most time-stable parts of speech whereas verbs are among the least time-stable and visualizes this distribution in a scale of temporal stability, reproduced in figure 1.

<b>most stable</b> .....	<b>least stable</b>		
tree, green	sad, know	work	shoot
noun, adj	adj verb	verb	verb

Figure 1. The scale of temporal stability, from Givón (2001, 54)

Similarly, Pinker and Bloom (1990, 715) note that “no language uses noun affixes to express tense”. These statements are part of a long tradition in occidental thinking, which can be traced back to Aristotle (*On Interpretation*):

By a noun (*onoma*) we mean a sound significant by convention, which has no reference to time [...] A verb (*rhema*) is that which, in addition to its proper meaning, carries with it the notion of time.

Indeed, many languages such as English express time with verbal tense and aspect as well as with adverbials. The independence of the temporal reading of nominals with regard to verbal tense has been put forward by Enç (1986) and Musan (1999). Musan (1999, 655), for example, observes that in the clause ‘Diana is talked about’, Diana’s lifetime is situated in the past with regard to the utterance time (TU) of the predicate ‘to be talked about’, as illustrated in figure 2.

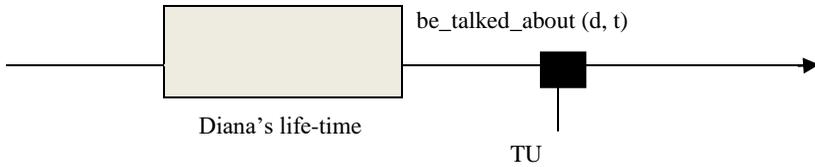


Figure 2. A subject-argument that is existence-independent relative to a predicate (Musan 1999, 625)

Moreover, cross-linguistic research drew attention to several languages in which ‘tense’, in a broad sense including tense, mood and aspect (TMA), is morphologically encoded in nouns. According to Nordlinger and Sadler (2004, 800–801) the past vs. non-past distinction is the minimal one, followed by distinctions for mood, while no distinctions have been documented so-far for aspect (with the possible exception of an analysis of the Guaraní suffixes as aspect markers as discussed by Tonhauser 2007).

We can identify at least three types of nominal morphological encoding frequently taking place through TMA markers (section 2.1), more rarely through case affixes (section 2.2), and also quite frequently through deictics, which partake in the formation of articles and demonstratives (section 2.3 and 3.2). As will be shown, in some languages, for example in Halkomelem and Tariana, nominal tense affects just the nominals, but not the proposition as a whole, and in other cases nominal tense affects the entire proposition, for example in Kayardild and Chamicuro.

## 2.1 TMA markers

The use of TMA markers in verbless clauses can be observed very frequently cross-linguistically (Nordlinger and Sadler 2004, 777). For example, in Mwotlap, an Oceanic language, several nominals may receive the TMA markers just like verbs do. In example (1), the noun ‘child’ is a predicate receiving the aorist marker *ni-*, the only TMA marker of the dependent clause (also note that Mwotlap is a zero-copula language) (François 2005):

- (1) Mwotlap (Oceanic)  
 kōyō ma-tayak kē, tō kē <ni-ēntē-yō togolgol>  
 3DU PFT-adopt 3SG then 3SG AOR-child-3DU straight  
 ‘They have adopted him, so that he (became) their legitimate son.’  
 (François 2005, 131)

Rather than raising the issue of nominal tense, languages like Mwothlap raise the issue of the existence of a clear-cut verb-noun distinction or, in other terms, that of determining which words can serve as heads of a clause in a given language. As is well known in the literature, and summarized by Lois and Vapnarsky (2006, 70) for Yukatekan languages, “an important number of roots are undetermined with respect of verbhood or nounhood and, are, consequently, polyvalent”.

To avoid this confusing factor in the discussion on nominal tense, Nordlinger and Sadler (2004) restricted their definition of tensed nominals to the languages in which tense is associated with nominals in dependent NPs, that is for cases where the nominal is an argument of the verb. This is for example the case in Halkomelem (Salish), where, as can be seen in (2a), the same past marker *-lh* may be suffixed to the noun (conveying the meaning ‘deceased’) and to the verb ‘be’. The use of the past marker with the noun is not a mere case of agreement between the noun and the verb since, as shown in (2b), the past marker *-lh* may be suffixed to the noun and be independent from the tense marker, here the future suffix *-cha*, of the verb ‘dream about’:

(2) Halkomelem (Salish)

- a. Éwe-lh            kw’étslexw    the-l            sí:lá:-lh  
 NEG.be-PST      see                            the.F-my      grandparent-PST  
 ‘He didn’t see my late grandmother.’ (Nordlinger and Sadler 2004, 782)
- b. El-éliyemet-tsel-cha                            the-l            sí:lá:-lh  
 RDP-dream.about-1SG.SUBJ-FUT            the.F-my      grandparent-PST  
 ‘I’ll be dreaming about my late grandmother.’ (Nordlinger and Sadler 2004, 782)

In both Mwothlap and Halkomelem discussed above, the TMA markers are shared between nominals and verbs and thus do not contradict Pinker and Bloom’s (1990) generalization that no language uses specialized noun affixes to express tense. Tariana (Arawak) is argued to be a language which has specialized TMA markers which can only be suffixed to nouns and are distinct from the TMA markers of the verbs. The most relevant examples are provided in Nordlinger and Sadler (2004) citing Aikhenvald. The noun ‘house’ in (3a), receives the future suffix *-pena*, while in (3b), it is the past suffix *-miki* which conveys a past reading for the clause:

(3) Tariana (Arawak)

- a. pi-ya-dapana-pena-naka  
2SG-POSS-house-NOM.FUT-PRES.VIS  
'This is your future house (I can see it).' (Nordlinger and Sadler 2004: 789)
- b. pi-ya-dapana-miki-ri-naka  
2SG-POSS-house-NOM.PST-NF-PRES.VIS  
'This is what used to be your house (I can see it).' (Nordlinger and Sadler 2004: 789)

Even if the examples (3a) and (3b) are found in verbless clauses, in which the noun 'house' is the head of the clause, it is also possible for Tariana speakers to use these suffixes in dependent NPs. Tariana could thus challenge the claim that no language uses tense affixes in nominals. Nonetheless, Tariana raises a different issue in the discussion of nominal tense, namely that of distinguishing between inflexion and derivation. In order to address this question, Nordlinger and Sadler (2004, 780) suggest that in Tariana and other language-candidates for nominal tense:

[...] nominal tense markers are fully productive, inflectional affixes that attach to all (regular) members of the nominal word class. The prefix *ex-* in English, by contrast, is quite restricted in its semantics and more clearly derivational in function.

Indeed, Aikhenvald (2003) provides quantitative evidence to defend the idea that nominal tense is widespread in Tariana (with 40% of the nominals in the corpus being inflected for tense), and although the nominal tense in Tariana is mainly used with animate referents it may also be used with inanimates. Nevertheless, a full list of the nouns that may be inflected for tense is not available in the otherwise extremely rich grammar of Tariana (Aikhenvald 2003) and could be of great interest for the discussion of this topic (also see Tonhauser 2007, 865 for a critical analysis of the Tariana data).

Lastly, Tonhauser (2007) carefully examines the nominal markers *-rã* and *-kue* in Paraguayan Guaraní, which have traditionally been described as temporal nominal markers. Tonhauser signals the relative rarity of these markers in a small free-speech corpus. She further tests the compatibility of these markers with various semantic noun classes showing that *-kue* (the past-time oriented marker) has restrictions for the nouns of the classes of food artifacts, natural kinds, and permanent/final stage human relations (Tonhauser 2007, 842). Moreover, Tonhauser compares verbal tense and nominal tense to conclude that the Guaraní suffixes are not best described as temporal nominal markers. She remains agnostic as to the most

appropriate way of qualifying them, i.e. as tense, aspect or modal markers. In their reply to Tonhauser’s paper, Nordlinger and Sadler (2008, 329) observe:

That is, why conclude that because Guaraní nominal temporal markers do not behave like verbal tenses, they necessarily must not be instances of tense, rather than concluding that because our characterizations of tense don’t adequately account for their properties, our notion of tense needs to be reexamined?

## 2.2 Case affixes

Kayardild, an Australian Tangkic language, offers an interesting example of ‘modal case affixes’ (Evans 1995, 108). As can be seen in (4a), (4b) and (4c), an allative case marker has to be used with a spatial meaning. Moreover, depending on the verb TMA markers of the clause, a different case suffix is used in each case; the so-called ‘proprietary’ case suffix agrees with the verb marker glossed ‘potential’ in (4a), the ‘ablative’ case with the ‘past’ in (4b), and the ‘oblique’ case with the ‘desirative’ in (4c):

### (4) Kayardild (Tangkic)

- a. Ngada            warra-ju        ngarn-kiring-ku  
    1SG(NOM)    go-POT        beach-ALL-M.PROP  
    ‘I will go to the beach.’ (Evans 1995, 108)
- b. Ngada            warra-jarra    ngarn-kiring-kina  
    1SG(NOM)    go-PST        beach-ALL-M.ABL  
    ‘I went to the beach.’ (Evans 1995, 108)
- c. Ngada            warra-da        ngarn-kiring-inj  
    1SG(NOM)    go-DES        beach-ALL-M.OBL  
    ‘I would like to go to the beach.’ (Evans 1995, 108)

Interestingly, rather than just agreeing with the TMA markers of the verb, the Kayardild case suffixes seem to carry an independent modal meaning, as shown in the examples (5a) and (5b). In these two verb-less clauses, the modal meaning is not concurrently expressed by any verbal markers and seems to be conveyed solely by the case suffixes:

### (5) Kayardild (Tangkic)

- a. Ngada            dathin-kiring-ku    kamarr-iring-ku  
    1SG(NOM)    that-ALL-M.PROP    stone-ALL-M.PROP  
    ‘I will (go) to the stone.’ (Evans 1995, 403)
- b. Jina-na            darr-ina            nying-ka            jirrka-an-kina?  
    where-M.ABL    time-M.ABL        2SG(NOM)        north-FROM-M.ABL

‘When did you come back from the north?’ (Evans 1995, 403)

## 2.3 Deictics

A number of languages appear to make use of articles and demonstratives to express temporal relationships. In Mojeño Trinitario (Arawak), a Bolivian language, two of the six available demonstratives seem to be related to tense and mood:

Demonstratives in *-kro* almost always refer to some irrealis referent (a future or hypothetical referent, as in ‘he/this one will come’), while demonstratives in *-ñgi* often refer to referents of the past, or not present any more in the speech event (‘in those years’, ‘that man (that passed by earlier)’). (Rose in press)

In Mojeño Trinitario, three different demonstratives are restricted to spatial relationships (*-ka* is a proximal, *-na* a distal, and *-ro* a medial) and a fourth one is used for anaphora, i.e. *-kni*.

Likewise, definite articles are found to express a [ $\pm$ past] temporal reference in the Peruvian Chamicuro languages (Arawak). The past reading in (6b) is obtained solely through the clitic *-ka*, opposed to the clitic *-na* in (6a), analyzed as definite articles by Parker (1999):

### (6) Chamicuro (Arawak)

- a. p-aškalaʔt-is=na čamálo  
2-kill-2PL-THE bat  
‘You<sub>pl</sub> are killing the bat.’ (Parker 1999, 553)
- b. p-aškalaʔt-is=ka čamálo  
2-kill-2PL-THE(PST) bat  
‘You<sub>pl</sub> killed the bat.’ (Parker 1999, 553)

In other languages, deictics encode both spatial and temporal relationships. This is the case in St’át’imcets (Salish), where the ‘absent/invisible’ article, *ni...a*, is related to the past (7b) and contributes to the temporal interpretation of the entire clause:

### (7) St’át’imcets (Salish)

- a. sécsec ti kel7áqsten-s-a ti US-a  
silly DET Chief-3SG.POSS.DET DET US-DET  
‘The (present) chief of the US is a fool.’ (Demirdache cited in Lecarme 2012, 708)
- b. sécsec ni kel7áqsten-s-a ti US-a

silly      DET      Chief-3SG.POSS.DET      DET      US-DET  
'The (former) chief of the US was a fool.' (Demirdache cited in  
Lecarme 2012, 708)

Examples concerning distals and their coding for time relationships are more thoroughly examined in section 3.2.

### 3. Distals in tensed nominals

#### 3.1 From space to time

Deixis is defined as “the location and identification of persons, objects, events, processes and activities being talked about or referred to, in relation to the spatio-temporal context created and sustained by the act of utterance and the participation in it” (Lyons 1977, 637). While deictics locate a referent in space in terms of distance from the deictic centre, their temporal uses can be viewed as locating the referent in time, following Comrie’s definition of tense as a grammaticalized location in time (Comrie 1985).

Thus time may be projected in a three-dimensional space in ways that appear to be language- and culture-specific. We know that for some languages the space-time axis is ‘front-back’. For example, in many Indo-European languages the future is situated in front of the observer and the past behind him metaphorically speaking (Radden 2011). This doesn’t seem to be a universal representation since, based on a multimodal study, it has been argued that in Aymara, the past is situated in front of and the future behind the speaker (Núñez and Swetser 2006). Another possible space-time axis is the vertical ‘up-down’ axis, with future and past being up or down depending on the languages (Radden 2011). Moreover, it has been argued that there is also a ‘left-right’ axis, at least at the cognitive level:

[T]he mapping from space to time takes place at the conceptual level rather than at the level of linguistic expressions, given that no language has been attested that has temporal expressions corresponding to the notions of left and right. (Ulrich and Maienborn 2010, 137)

Since the association of past and future in space seems to be not only language-dependent but also culturally specific, we would expect distals to have no specific temporal equivalent across the world’s languages. In section 3.2 we examine the uses and restrictions of space and anaphoric deictics in time as observed in languages without a nominal tense, and in 3.3. we examine how space and time are mapped in tensed nominals.

### 3.2 Spatio-temporal deictics with restricted uses

In section 2 it was shown that some languages may use TMA markers or case affixes for the nominal tense. A third way of marking nominal tense in different languages across the world is by means of deictics, which partake in the formation of articles and demonstratives. A distinction should be made here between the languages that use such temporal deictics with a large part of the lexicon and those that restrict these uses to nouns with a temporal meaning such as ‘hour’, ‘day’, ‘week’, ‘month’, ‘year’.

Restricted temporal uses of the spatial deictics are described for Nêlêmwa, an Oceanic language spoken in New Caledonia. Bril (2004) shows that the spatial deictics—suffixed to nouns, personal pronouns and demonstratives among others—can be used to express a time reference with some nominals with temporal meaning. The mid-distance deictic *-na* is used for the near future (8a) and (8b), while the distal *-ali* is used for the distant future (8c) and (8d):

(8) Nêlêmwa (Austronesian)

- a. Cae me ni hoona  
tomorrow and in that.DEICT  
‘Tomorrow and the day after tomorrow’ (Bril 2004, 108)
- b. pwaxa o taam maleena je me  
for REL day those.DEICT be.LOC towards.here  
‘for the days to come’ (Bril 2004, 108)
- c. hmwalux-ali  
month-that.DEICT  
‘next month’ (Bril 2004, 108)
- d. ni taan malaali  
in day those.DEICT  
‘in the future (more distant)’ (Bril 2004, 108)

The demonstrative *-xo*, used for indicating that the spatial distance is unknown, also denotes an uncertain future. Lastly, two anaphoric demonstratives are used to express a time reference: *-eli*, used for a referent which is known by the speaker, is not temporally marked (can be used for present, future or past), and *-bai*, for a referent known by the addressee, is used for past (near or distant).

Similarly, in Mokilese, an Austronesian language, the demonstrative suffixes combine with words with a temporal meaning: the suffix for the speaker’s sphere is used for the future, the suffix for the addressee’s sphere is used for the present, and the distal one is used for the past (Harrison 1976).

The restrictions of space and anaphora deictics with temporal nouns are also well known from the more familiar Indo-European languages. For example, in Modern Greek the spatial demonstratives may be associated with only some words with temporal meaning. Thus, the distal *ekini* ‘that.F’ can only be associated with a past reading (9a), its use for a future reading would be ungrammatical (9d). The proximal or often default demonstrative, *afti* ‘this.F’, is associated with the recent past (9b) or recent future (9c):

- (9) Modern Greek (Indo-European)
- a. *ekini ti xronja*  
that DEF year  
‘that year (remote past)’
  - b. *afti ti xronja [pu perase]*  
this DEF year which passed.3SG  
‘this year (recent past) [which passed]’
  - c. *afti ti xronja [pu mas erxete]*  
this DEF year which to.us coming.3SG  
‘this year (close future), [which is upcoming]’
  - d. *\*ekini ti xronja pu mas erxete*  
that DEF year which to.us coming.3SG  
‘that coming year’

These uses are also possible for *vðomaða* ‘week’:

- (10) a. *ekini ti vðomaða ixa repo*  
that DEF week had.1SG day.off  
‘that week (remote past), I had a day-off work’
- b. *afti ti vðomaða ixa repo*  
this DEF week had.1SG day.off  
‘this week (recent past), I had a day-off work’
- c. *afti ti vðomaða θa exo repo*  
this DEF week FUT have.1SG day.off  
‘this week, I will have a day-off work’.

For a more distant future reference which is identified in the speech, the distal may also be used, e.g. as an answer to the question ‘Will you be there during the first week of August?’, the answer *ekini ti vðomaða θa exo repo* ‘that week, I will have a day-off work’ is felicitous. The uses of demonstratives with the word ‘day’ are more complex and do not behave in a way similar to ‘week’ and ‘year’ (discussed above).

Iraqw, an Afro-Asiatic language, also seems to relate some of the space demonstratives with specific temporal readings in specific anaphoric

contexts. Iraqw has four demonstratives: *ká*, which is used for a referent near the speaker (glossed DEM1), *sing* used for a referent near the addressee (DEM2), *qá'* for a referent which is near neither of them but is visible (DEM3), and *dá'* for a referent which is far away (DEM4) (Mous 1993, 91). According to Mous (1993, 91), “the demonstratives *-dá'* and *-qá'* are often used for nouns that are mentioned earlier. *qá'* for present tense and *dá'* for past tense”. See in (11a) and (11b) examples of the [+far, +invisible] demonstrative (DEM4) used for the past, and in (11c) the [+far, +visible] (DEM3) used for the present:

(11) Iraqw (Afro-Asiatic)

- a. maray-dá'      balá'      a      'aseemi  
houses-DEM4    day:that    COP    flat:roof:roofed  
'Those houses of that period were flat roofed houses.'  
(Mous 1993, 91)
- b. xa'i i-na      túu'      xa'i-dá'  
trees O.N-PST    uproot:3SG.M-PST    trees-DEM4  
ka      kwáahh  
O.3:IMPS:O.N:PERF    throw:PST  
'He uprooted trees. ... Those trees were thrown away.'  
(Mous 1993, 91)
- c. gwara-r-qá'      hhiya-'ée'      i-r      gwâa'-i  
death-F-DEM3    brother-1SG.POSS    S.3-INSTR    die:INT-INF:S3  
'Is that a death for my brother to die?' (after a sentence about  
the way he died.) (Mous 1993, 91)

Despite the analysis of Iraqw as a language with tensed nominals in Lecarme (2012), it is not clear to us based on the data and the analysis provided by Mous (1993) whether these are not primarily anaphoric uses and just show compatibilities with some adverbials and verbal tense.

Lastly, Robert (2006) shows that in Wolof (Niger-Congo) the deictic suffixes largely organize the language by combining spatial and temporal reference for the predicate and the subordination (see Table 1).

Localization (in space, time or discourse) relative to the speaker

	proximity	distance	absence
	<i>-i</i>	<i>-a</i>	<i>-u</i>
Noun	proximal definite	distal definite	indefinite relative/interrogative
Predicate	proximal present	distal present	negation/passive
Subordination	close past	remote past	future/hypothetical

*Table 1.* Semantics and uses of deictic affixes in Wolof (Robert 2006, 168)

As can be seen in the examples below, in Wolof, the proximal *gi*, in (12a), contrasts with the distal *ga*, in (12b). The distal may also be used to refer to the remote past, shown in (12c), in agreement with the verbal tense:

(12) Wolof (Niger-Congo)

- a. Kër gi Ablaye jënd  
house CLF-i Ablaye buy  
'The house (nearby) that Ablaye bought.' (Robert 2006, 163)
- b. Kër ga Ablaye jënd  
house CLF-a Ablaye buy  
'The house (distant) that Ablaye bought.' (Robert 2006, 163)
- c. Kër ga Ablaye jënd-oon  
house CLF-a Ablaye buy-PST  
'The house (whether distant or not) that Ablaye had bought.'  
(Robert 2006, 163)

### 3.3 Spatio-temporal deictics in languages with tensed nominals

In a handful of languages, tense encoded in nominals through space deictics is a syntactic feature that is not restricted to the category of nouns with temporal lexical semantics but is widely used with common nouns, human, i.e. 'man', animates, i.e. 'cat', or inanimates, i.e. 'table'; although restrictions may apply to some parts of the lexicon, i.e. abstract entities or inalienable referents such as body part nouns (Lecarme 2004; Tonhauser 2007; Fenton 2010; Adamou 2011). These are the languages that we will examine in this section, paying special attention to the use of the distal determiners in order to determine their temporal uses (see Figure 3).

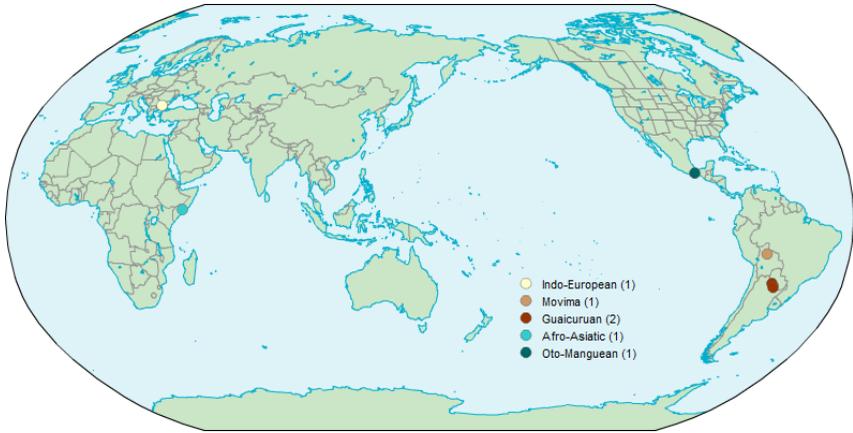


Figure 3. The distribution of languages with spatio-temporal determiners used in tensed nominals (map drawn with the World Atlas of Language Structures interactive tool <http://www.eva.mpg.de/lingua/research/tool.php>)

It will be shown that distal articles or demonstratives are used to express remote past in two languages, namely Zapotec (Zapotecan, Oto-Manguean) in Fenton (2010), and Movima (Amerindian isolate, Bolivia) in Haude (2004), and for unmarked past in Somali (Northern Cushitic, Afro-Asiatic) in Lecarme (1999). Distals are used for future and irrealis in two languages, Pilaga and Toba (Guaykuruan) in Vidal and Klein (1998), and Pomak (Slavic, Indo-European) in Adamou (2011).

We can distinguish two types of languages with tensed nominals in which time reference is expressed by spatio-temporal deictics: Type 1 includes the languages in which distals are used for past reference and Type 2, the languages in which distals are used for future reference. The two types are illustrated with examples in the sections 3.3.1. and 3.3.2.

### 3.3.1 Type 1: *distal* > *past*

Type 1 languages, which use distals for past reference, are Zapotec (Zapotecan, Oto-Manguean), Movima (Amerindian isolate, Bolivia), and Somali (Northern Cushitic, Afro-Asiatic).

Zapotec is a Mexican Oto-Manguean language. Teotitlán del Valle Zapotec has four determiners: the proximal *rè*, the medial *kang*, the distal *re*, and the distal/invisible *ki* (Fenton 2010). Fenton (2010, 136) argues that the distal/invisible *ki* is also used for remote past, contrasting with the distal

*re*, which is used for recent past. In (13a), the distal *re* cliticizes to the noun ‘person’ and refers to a moment situated in the immediate past, expanding over the current day. In (13b), the distal/invisible *ki* cliticizes to ‘person’ and refers to a moment that starts yesterday and expands to the remote past. According to Fenton, this is the only indication of a temporal reading in the clause and as such can be considered as a grammatical tense since in both cases the verb only receives the ‘completive’ aspectual marker *gu-*.

(13) Zapotec (Oto-Manguenan)

- a. tu bɛni=re gu-zuwa’a rɛ  
 who person=DIST COMPL-be here  
 ‘Who was that man who was (just) here?’ (Fenton 2010, 135)
- b. tu bɛni=ki gu-zuwa’a rɛ  
 who person=INVIS COMPL-be here  
 ‘Who was that man who was here?’ (i.e. more in the past; it could mean he was here yesterday.) (Fenton 2010, 135)

In Movima, an unclassified Bolivian language, Haude (2006) describes three articles; one article is used for the presential or non-past (*i’nes* in 14a), a second for the absential or immediate past (*kinos* in 14b) and a third one for a referent that has ceased to exist (*isnos* in 14c):

(14) Movima (Amerindian isolate, Bolivia)

- a. i’nes kwe:ya  
 ART.F woman  
 ‘the/a woman’ (Haude 2006, 13)
- b. kinos kwe:ya  
 ART.F.A woman  
 ‘the/a woman (absent)’ (Haude 2006, 13)
- c. isnos kwe:ya  
 ART.F.PST woman  
 ‘the/a woman (deceased)’ (Haude 2006, 13)

The article, which is used for the present (and could be glossed as a proximal) is also associated with the present and future. The article used for a referent which is absent but accessible, (and could therefore be glossed as distal) is also used for the recent past (*kinoj* in 15a). The article used for a referent, which is absent and not accessible is also associated to a referent that has ceased to exist (*isnoj* in 15b) (Haude 2006) or to the remote past (Haude 2004). The use of the absential and accessible in this context would be ungrammatical (*kinoj* in 15c):

- (15) a. *kinoj ney ay'ku di' jayna kayni*  
 ART.F.A DEF my.aunt REL already be.dead  
 'That (absent) aunt of mine who died [yesterday].'  
 (Haude 2004, 84)
- b. *la' n-oj soñ-tino:na' kayni isnoj ay'ku*  
 before O-ART.N other-IN:year be.dead ART.F.PST my.aunt  
 'Last year my aunt died.' (Haude 2004, 84)
- c. *\*kinoj ay'ku*  
 ART.F.A my.aunt  
 (Haude 2004, 84)

According to Haude (2006, 163), “the more time-stable the referent and the more relevant it is to the speaker, the less it can be referred to by the past article”.

The definite articles in Somali (Afro-Asiatic) encode a temporal [ $\pm$ past] distinction, alongside the four demonstratives that are restricted to spatial reference (Lecarme 1999, 2004). In (16a), the article *-da* agrees with the present form of the verb, whereas in (16b), the article *-dii* with the past form of the verb.

- (16) Somali (Afro-Asiatic)
- a. *dhibaatá-da Khalíj-ku welí way taagán tahay*  
 problem-DET.F Gulf-DET.M[+nom] still F.3S permanent is  
 'The Crisis of the Gulf still persists.' (Lecarme 2004)
- b. *dhibaatá-dii Khalíj-ku wáy dhammaatay*  
 problem-DET.F[+past] Gulf-DET.M[+nom] F.3S ended[+past]  
 'The Crisis of the Gulf ended.' (Lecarme 2004)

Lecarme in her work on Somali argues that nominal tense is independent of clausal tense. Moreover, she shows that nominal tense is inflectional in Somali in that it determines case assignment, agreement and deletion processes.

According to Lecarme (1999), the article used for the past, is also used for a referent which is distant, visible or invisible as shown in (17a), (17b) and (17c), although Lecarme (2012) revises this approach and relates the distal to the invisible feature (Lecarme 2012, 708):

- (17) Somali (Afro-Asiatic)
- a. *bug-gii wáa kan*  
 book-DET.M[+past] F DET.M-DEM  
 'Here is the book (distant but in sight/I have in mind/I told you about).' (Lecarme 1999)

- b. nimán-kii                      waa    macallimin  
 men-DET.M[+past]    F            teachers  
 ‘The men (over there/I have in mind/I told you about) are teachers.’ (Lecarme 1999)
- c. wil-kii                              áawey  
 boy-DET.M[+past]    where-is-he  
 ‘Where is the boy (not in sight/I have in mind/I told you about)?’ (Lecarme 1999)

In Somali, there is no distinction between recent and remote past at the level of definite articles; see (18a) and (18b) respectively:

(18) Somali (Afro-Asiatic)

- a. qabqabashá-dii                      shálay  
 arrests-DET.F[+past]    yesterday  
 ‘Yesterday’s arrests.’ (Lecarme 1999)
- b. qabqabashá-dii                      usbúuc-ii                      hore  
 arrests-DET.F[+past]    week-DET.M[+past]    before  
 ‘Last week’s arrests.’ (Lecarme 1999)

To summarize, in languages of the Type 1 we observe that distals are used for past and are opposed to proximals, which are used for present. Distals, possibly combined with the invisible feature, may also be used for remote past as opposed to proximals (possibly also visible), which are used for recent past (see figure 4).

proximal/visible (recent) past/present	distal/invisible (remote) past
---	-----------------------------------

deictic centre

Figure 4. Type 1 languages: distal > past

### 3.3.3 Type 2: distal > future, irrealis

Among Type 2 languages, which associate distals with future reference or irrealis, are Pomak (Slavic, Indo-European) and two Guaykuruan languages, Pilaga and Toba.

The analysis of a Pomak (Balkan Slavic) variety of Greece (Adamou 2011) shows the use of three deictics (-s-, -t- and -n-) for spatio-pragmatic and temporal-modal reference in nominals. These deictics, used among

others in noun modifiers such as definite articles and demonstratives, have two sets of uses. For ‘here and now’ situations, Pomak definite articles show a three-way distinction depending on whether the referent is considered to be part of the speaker’s sphere (19a), the addressee’s sphere (19b), or neither (19c):

(19) Pomak (Indo-European)

- a.    ǰjela                    nah            ǰmatsa-sa  
       come.IMP.2SG    to            table-DEF.S  
       ‘Come to the table (speaker’s sphere)!’ (Adamou 2011, 875)
- b.    na            ǰmatsa-ta  
       at            table-DEF.ADRES  
       ‘On the table (addressee’s sphere)!’ (Adamou 2011, 875)
- c.    pri            ǰmatsa-na  
       next table-DEF.DIST  
       ‘Next to the table (distal visible or invisible)!’  
       (Adamou 2011, 875)

In Pomak, when the process situation and the utterance situation coincide, the spatial reference is triggered, as illustrated in (20a). In contrast, when the referents are located in a space and time frame distinct from the utterance situation, the temporal and modal set of uses is triggered. In this case, the addressee’s *-t-* article no longer refers to the addressee’s sphere but to the past (see example 20b), while the *-n-* distal article is used for referents in the future that have relevance to the utterance situation (illustrated in the example 20c) or in habitual situations, whether they are located in the future or in the past. The distal is also used with irrealis referents, typically encountered in folk-tales<sup>1</sup> (see example 20d):

(20) Pomak (Indo-European)

- a.    gju ǰlutǰi-se    ǰǰæ-se    ǰnose-m    (ai ǰsa)    ǰjatse sa    ǰhubavi  
       glasses-DEF.S    which-S    wear-1SG    now        very        be.3PL    nice  
       ‘The glasses that I’m wearing (now) are very nice!’  
       (Adamou 2011, 881)
- b.    gju ǰlutǰi-te    ǰǰæ-te    ǰnoseh    (la ǰni)    ǰbeha  
       glasses-DEF.PST    which-PST    wore.1SG    last,year    were.3PL  
       gu ǰljami

---

<sup>1</sup> Irrealis is also morphologically encoded in Pomak in the temporal subordinators through an opposition between the subordinator with no deictic *aga* ‘when’ and the subordinator with the distal suffix *-n-* *agano* for an event which is located in the future with respect to the utterance time (Adamou 2011).

big

'The glasses that I wore (last year) were big.'

(Adamou 2011, 881)

- c. gjuʔɬlutʃi-ne      ʔæ-ne      ʃe      ʔkupe-m      sa      tʃeʔveni  
glasses-DEF.FUT    which-FUT    will    buy.1SG    be.3PL    red  
'The glasses that I will buy are red.' (Adamou 2011, 881)
- d. i                      petelʔfo-no      ʔvika      kokorigo  
and                    cock-DEF.DIST    say.3SG    kokorigo  
'And the cock says cock-a-doodle-do.' (Adamou 2011, 878)

In Pomak, there is no distinction between remote and recent past reference. As the examples below show, both the remote and the recent past require the *-t-* suffix:

- (21) a. laʔni      deʔti-te                      mi              ʔbeha      jaʔvaj  
last.year    children-DEF.PST    1SG.DAT    were.3PL    quiet  
'Last year, my students were easy going.' (Adamou 2011, 877)
- b. ʔftʃera    deʔti-te                      mi              ʔbeha      jaʔvaj  
yesterday   children-DEF.PST    1SG.DAT    were.3PL    quiet  
'Yesterday my students were easy going.' (Adamou 2011, 877)

Lastly, in Pomak, the main clause's temporal reference does not need to coincide with the noun's reference, as shown in (22):

- (22) miʔdyr    naʔpreʃn-et              ʃe              ʔdojde      ʔutre  
president    former-DEF.PST    will    come.3SG    tomorrow  
'The former president of the village will come tomorrow.'  
(Adamou 2011, 880)

Vidal and Klein (1998) argue that for Pilaga and Toba (Guaykuran) the distal markers, glossed as classifiers, *ga'* in Pilaga and *ka* in Toba (see examples 23a, 23b and 23c), attached to demonstratives and nouns among others, also express, by semantic extension, a hypothetical or unrealized event (see examples 24a and 24b):

- Distal, invisible

(23) Pilaga (Guaykuran)

- a. s-ciyo-geʔ                      gaʔ                      ar-qaya  
1SG-come-DIR.towards    CLF.distal    POSS.2SG-sister  
'I came from your sister's.' (The referent is out of view.)  
(Vidal and Klein, 1998, 181)

- b. w'o ga' l-wa  
 EXIST CLF.distal POSS.3SG-spouse/wife  
 'He has a wife (but I never saw her or I do not know her)'  
 (Vidal and Klein 1998, 181)

Toba (Guaykuruan)

- c. hayem wo'o ka-pio'q  
 PRO.1SG EXIST CLF.distal-dog  
 'I have a dog.' (Vidal and Klein, 1998, 181)

- Future, irrealis

(24) Pilaga (Guaykuruan)

- a. ñi-woren-a ga' harina  
 1SG-buy-AGR.SG CLF.distal flour  
 'I will buy flour.' (The flour is not present, but the speaker implies that it will be). (Vidal and Klein, 1998, 181)

Toba (Guaykuruan)

- b. ramari ya-nim haka-lere ka-Juan  
 PRO.3SG 3SG-give F.CLF.distal-book CLF.distal-Juan  
 'He will give the book to Juan.' (Neither Juan nor the book are present, but the speaker implies that they will be).  
 (Vidal and Klein, 1998, 181)

Moreover, for 'here and now' situations, the classifier *so* indicates a referent which according to the authors is in motion and is glossed as 'going away' (see 25a and 25b):

- 'going away'

(25) Toba (Guaykuruan)

- a. lakwalero n-waxa-t-ega so-wataxanak  
 ART-student 3PL-fight-PRG-INT CLF.going.away-police  
 'The students are fighting the police.' (The police are moving away from the students). (Vidal and Klein 1998, 181)
- b. ø-wayo-ta so-'i-loqoy  
 3SG-fly-PRG CLF.going.away-POSS.1SG-bird  
 'My bird is flying away.' (Vidal and Klein 1998, 181)

In the following examples it is shown how *so* 'going away' is associated with past reference (26a), whereas the distal *ga'* is used for a future reference (26b), without any temporal or modal specification in the verb:

(26) Pilaga (Guaykuruan)

- a. am-sa-nem so' paan  
2SG-1SG-give CLF.absent/going.away bread  
'I gave you bread.' (The bread is not there, but both the speaker and hearer know that it was.) (Vidal and Klein 1998, 183)
- b. am-sa-nem ga' paan  
2SG-1SG-give CLF.distal bread  
'I'll give you bread.' (The bread is not out there, but the speaker implies that there will be some, and then she/he will give it to the hearer.) (Vidal and Klein 1998, 183)

In Klein (1987), a distinction is made between *ka/ga'*, which is associated with the remote future and remote past and *so*, which is associated with the recent past. This analysis is cited in Radden (2011) but it seems that Vidal and Klein (1998) have revised their analysis since Klein's 1987 publication. Indeed in Vidal and Klein (1998), *ka/ga'* is translated as past but analyzed as irrealis (see example 27):

(27) Pilaga

- soote sa-noma da' setake awe-'et ga' nwosek  
before 1SG-know COMP want 2SG-make CLF.distal food  
'I knew that she wanted to prepare the food.'  
(Vidal and Klein 1998, 190)

Summarizing Type 2 languages, it seems that distals may be associated with future and irrealis references, as opposed to a referent, which is absent or close to the addressee and is associated with the past (see figure 5).

absent/addressee  
past

distal/invisible  
future/irrealis

deictic centre

Figure 5. Type 2 languages: distal > future

## 4. Conclusion

An overview of a small number of documented languages which appear to use tense markers for nominals in dependent NPs, shows that noun

determiners encoding distance in space are rarely associated to distance in time (see Table 2). A study of the six unrelated languages which appear to be using distals for time reference in nominals shows that distals may be used for future reference and irrealis, e.g. Pilaga and Toba, Guaykuruan (Vidal and Klein 1998), Pomak, Slavic (Adamou 2011). Nevertheless, distals seem to be more frequently associated with past reference, e.g. Zapotec, Otomanguean (Fenton 2010), Somali, Afro-Asiatic (Lecarme 2004), and Movima, a language of Bolivia (Haude 2006). Distals are also associated with past reference in languages which use deictics with only some nominals with temporal meaning, as in Nêlêmwa, Oceanic (Bril 2002) and partly in Modern Greek; in anaphora, as in Iraqw, Cushitic (Mous 1993); or in subordinate clauses as in Wolof, Niger-Congo (Robert 2006).

This small sample indicates that there is not a one-to-one relationship between the distance in space and past or future reference. The available data thus encourage us to consider that, in tensed nominals, distal reference in space is associated with distal reference in time from the 'here and now' situation, be it in the past or the future. This analysis is backed up by the fact that when a language encodes a distinction between past and remote past (e.g. Wolof, Zapotec), or immediate future and distant future (e.g. Nêlêmwa), the distal spatial determiner is always the one associated to distal temporal reference. Panare (Cariban) also confirms the non-relevance of the past/future distinction since, according to Gildea (1993), the distal demonstrative developed into a tense marker of both past and distant future reference (as opposed to the proximate demonstrative which became associated with the present and immediate future). This analysis accounts for the variation found in the central Rhodopean (Slavic) varieties as well where distal deictics are the preferred choice for past reference (Kanevska-Nikolova 2006, 79) rather than future reference as in the closely related Pomak varieties spoken in Greece (Adamou 2011). Moreover, this approach also seems to hold for the Modern Greek examples in (9) and (10), where it appears that what is relevant is the distance or proximity to the utterance time rather than the anteriority or posteriority to the utterance time.

In our sample, distals may also be associated with the 'invisible' feature (although this is not a universal feature and the two systems may be superposed in several languages). This 'evidentiality' feature of visibility is discussed in Lecarme (2012), who points out that the present is often associated with the visible, since there is direct evidence, whereas the past is associated with the invisible and may be related to indirect evidence. Nevertheless, the three languages in our sample, namely Pilaga, Toba and Pomak, show that the distal/invisible feature is instead associated with irrealis and in Pomak to future and irrealis. This is an important point for

discussion, although Lecarme (2012) also mentions that in several languages it is the past morphology that is associated to irrealis. Lecarme (2012) argues that past morphology in tensed nominals is in fact related to the more primitive feature of ‘exclusion’ between a topic time/world and the time/world of the utterance. We could also argue here, that distals seem to work this way in tensed nominals, but in order to make a robust claim more comparable data and a homogeneous analysis are needed for each language in order to fully understand the correlation of distance in space and distance in time as expressed by the nominal tense. Indeed, the second-hand data mentioned in this paper have been analyzed with various categories. Different authors analyzing the same data offer different interpretations (see Guaraní) and sometimes authors revise their own analysis of the phenomena under study in subsequent publications (see Movima, Somali or Pilaga and Toba). These limitations are of course well-known in the studies of typology and we tried to take them into account in the present paper.

Language	Family	Space &	Time		
Zapotec	Otoman-guean	proximal/ near past	distal, invisible/ remote past		
Movima	Unclassified (Bolivia)	presential/ non-past	absentia/ past	ceased to exist (remote past)	
Pilagá, Toba?	Guaykuran		‘going away’/ past	distal, invisible/ hypothetical, unrealized	
Pomak	Indo-European	speaker/ present	addressee/ past	distal/ future, habitual	(Ø/irrealis)
Somali	Afro-Asiatic	proximal (visible)/ present	distal (invisible)/ past		

*Table 2.* Time and space reference in distals in a small number of languages

## Abbreviations

In the present paper the authors’ abbreviations were sometimes changed for glossing consistency following the Leipzig glossing rules.

A–absentive; ABL–ablative; ACC–accusative; ADRES–addressee; AGR–agreement; ALL–allative; AOR–aorist; ART–article; CLF–classifier; COMP–

complementizer; COMPL–completive; COP–copula; DAT–dative; DEF–definiteness marker; DES–desirative; DET–determiner; DEICT–deictic; DEM–demonstrative; DIR–directional; DIST–distal; DU–dual; EXIST–existential copula; F–feminine; FUT–future; HAB–habitual; IMP–imperative; IN–incorporated noun; INF–infinitive; INSTR –instrumental; INT–intensive (for Pilaga) and interrogative (for Iraqw); INVIS–invisible; IRR–irrealis; LOC–locative; M–masculine; N–neuter; NEG –negation; NOM–nominative; OBL–oblique; PFT–perfect; POSS–possessive; POT–potential; PRES – present; PROP–proprietary; PRG–progressive; PRO–pronominal; PST–past; RDP–reduplication; REFL–reflexive; REL–relativizer; S–speaker’s sphere; SG–singular; SUBJ–subject; VIS–visible.

## References

- Adamou, Evangelia. 2011. Temporal uses of definite articles and demonstratives in Pomak (Slavic, Greece). *Lingua* 121(5), 871–889.
- Aikhenvald, Alexandra. 2003. *A grammar of Tariana, from Northwest Amazonia*. Cambridge: Cambridge University Press.
- Aristotle. *On interpretation*. Translation by E. M. Edghill. Accessed July 30, 2013 <http://ebooks.adelaide.edu.au/a/aristotle/interpretation/>.
- Bril, Isabelle. 2004. Deixis in Nêlêmwa (New Caledonia). In *Deixis and demonstratives in Oceanic languages*, edited by Gunter Senft, 99–127. Canberra: Pacific linguistics.
- Bybee, Joan, Revere Perkins and William Pagliuca. 1994. *The evolution of grammar. Tense, aspect, and modality in the languages of the world*. Chicago: The University of Chicago Press.
- Comrie, Bernard. 1985. *Tense*. Cambridge: Cambridge University Press.
- Dahl, Östen. 1985. *Tense and aspect systems*. Oxford: Blackwell.
- Enç, Mürvet. 1986. Towards a referential analysis of temporal expressions”. *Linguistic and Philosophy* 9(4), 405–426.
- Evans, Nicholas. 1995. *A grammar of Kayardild: With historical-comparative notes on Tangkic*. Berlin/New York: Mouton de Gruyter.
- Fenton, Donna. 2010. Multiple functions, multiple techniques: The role of methodology in a study of Zapotec Determiners. In *Fieldwork and linguistic analysis in indigenous languages of the Americas*, edited by Andrea L. Berez, Jean Mulder and Daisy Rosenblum, 125–145. Honolulu: University of Hawai’i Press.
- Fleischman, Suzanne. 1989. Temporal distance: A basic linguistic metaphor. *Studies in Language* 13(1), 1–50.
- François, Alexandre. 2005. A typological overview of Mwotlap, an Oceanic Language of Vanuatu. *Linguistic Typology* 9(1), 115–146.

- Gildea, Spike. 1993. The development of tense markers from demonstrative pronouns in Panare (Cariban). *Studies in Language* 17(1), 53–73.
- Givón, Talmy. 2001. *Syntax: An introduction. Vol. 1.* Amsterdam/Philadelphia: John Benjamins.
- Harrison, Sheldon P. 1976. *Mokilese reference grammar.* Honolulu: University of Hawaii Press.
- Haspelmath, Martin. 1997. *From space to time: Temporal adverbials in the world's languages.* Muenchen/Newcastle: Lincom Europa.
- Haude, Katharina. 2004. Nominal tense marking in Movima: Nominal or clausal scope? *Linguistics in the Netherlands* 2004, 80–90.
- Haude, Katharina. 2006. *A grammar of Movima.* PhD diss., Radboud University Nijmegen.
- Heine, Bernd, Ulrike Claudi and Frederike Hünemeyer. 1991. From cognition to grammar: Evidence from African languages. In *Approaches to grammaticalization. A companion series to the Journal Studies in Language. Vol. 2: Focus on types of grammatical markers*, edited by Elizabeth C. Traugott and Bernd Heine, 149–188. Amsterdam/Philadelphia: John Benjamins.
- Janda, Laura, 2002. Concepts of case and time in Slavic. *Glossos* 3. Accessed September 3, 2013 <http://slaviccenters.duke.edu/projects/glossos-journal>
- Kanevska-Nikolova, Elena. 2006. *Trojnoto členuvane v rodopskite govori.* Plovdiv: Univ. Izdatelstvo Paisij Xilendarski.
- Klein, Harriet E. M. 1987. The future precedes the past: Time in Toba. *Word* 38(3), 173–185.
- Lecarme, Jacqueline. 1999. Nominal tense and tense theory. In *Empirical issues in formal syntax and semantics 2. Selected papers from the Colloque de Syntaxe et Sémantique à Paris (CSSP 1997)*, edited by Francis Corblin, Carmen Dobrovie-Sorin and Jean-Marie Marandin, 333–354. The Hague: Holland Academic Graphics.
- Lecarme, Jacqueline. 2004. Tense in nominals. In *The syntax of time*, edited by Jacqueline Guéron, and Jacqueline Lecarme, 440–475. Cambridge: MIT Press.
- Lecarme, Jacqueline. 2012. Nominal tense. In *The Oxford handbook of tense and aspect*, edited by Robert I. Binnick, 696–718. Oxford: Oxford University Press.
- Lyons, John. 1977. *Semantics.* Cambridge: Cambridge University Press.
- Lois, Ximena and Valentina Vapnarsky. 2006. Root indeterminacy and polyvalence in Yukatekan Mayan languages. In *Lexical categories and root classes in Amerindian languages*, edited by Ximena Lois, and Valentina Vapnarsky, 69–115. Bern: Peter Lang.

- Mous, Marten. 1993. *A grammar of Iraqw*. Hamburg: Helmut Buske Verlag.
- Musan, Renate. 1999. Temporal interpretation and information-status of noun phrases. *Linguistics and Philosophy* 22(6), 621–661.
- Nordlinger, Rachel and Louisa Sadler. 2004. Nominal tense in a crosslinguistic perspective. *Language* 80(4), 776–806.
- Nordlinger, Rachel and Louisa Sadler. 2008. When is a temporal marker not a tense? Reply to Tonhauser (2007). *Language* 84(2), 325–331.
- Núñez, Rafael and Eve Swetser. 2006. With the future behind them: Convergent evidence from Aymara language and gesture in the crosslinguistic comparison of spatial construals of time. *Cognitive Science* 30(3), 401–450.
- Parker, Steve. 1999. On the behavior of definite articles in Chamicuro. *Language* 75(3), 552–562.
- Pinker, Steven and Paul Bloom. 1990. Natural language and natural selection. *Behavioral and Brain Sciences* 13(4), 707–784.
- Radden, Günter. 2011. Spatial time in the West and the East. In *Space and time in language*, edited by Mario Brdar, Marija Omazic, Visnja Pavicic Takac, Tanja Gradecak-Erdeljic and Gabrijela Buljan, 1–40. Frankfurt am Main: Peter Lang.
- Rose, Françoise. in press. Mojeño Trinitario. In *Lenguas de Bolivia*, edited by Mily Crevels and Pieter Muysken. La Paz: Plural Editores.
- Robert, Stéphane. 2006. Deictic space in Wolof. In *Space in languages: Linguistic systems and cognitive categories*, edited by Maya Hickmann and Stéphane Robert, 155–174. Amsterdam/Philadelphia: John Benjamins.
- Tonhauser, Judith. 2007. Nominal tense? The meaning of Guaraní nominal temporal markers. *Language* 83(4), 831–869.
- Traugott, Elizabeth C. 1978. On the expression of spatio-temporal relations in language. In *Universals of human language. Vol. 3: Word structure*, edited by Joseph H. Greenberg, Charles A. Ferguson and Edith A. Moravcsik, 369–400. Stanford: Stanford University Press.
- Vidal, Alejandra and Harriet E. Klein. 1998. Irrealis in Pilaga and Toba. Syntactic versus pragmatic coding. *Anthropological Linguistics* 40(2), 175–197.
- Ulrich, Rolf and Claudia Maienborn. 2010. Left–right coding of past and future in language: The mental timeline during sentence processing. *Cognition* 117(2), 126–138.