

Telling apart temporal locating adverbials and time-denoting expressions

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Abstract

This paper is concerned with the identification of two semantically close categories – temporal locating adverbials and time-denoting expressions. The dividing line between these categories is difficult to draw, inasmuch as there are several phrases that occur with the same surface form in the typical contexts of both of them (e.g. in adverbial position and as the complement of verbs like *to date from*). These ambivalent phrases include relatively simple expressions like *yesterday* or *last week*, but also – a fact that has gone practically unnoticed in the literature – structurally complex ones, like those headed by *before*, *after*, *when* or *ago*. In this paper, a uniform semantic categorisation of these phrases as mere time-denoting expressions is advocated and some of its consequences for the grammatical system are assessed. The analysis postulates a null locating preposition (with a value close to that of *in*) in the contexts where the ambivalent forms occur adverbially. A corollary is the partition of the set of particles traditionally classified as temporal locating into two sets: the truly locating ones – like *in*, *during*, *since* or *until* – and those that are mere heads of (structurally complex) time-denoting expressions – like *before*, *after*, *between*, *when*, *ago*, or *from*.

1 Introduction

In this paper, Portuguese and English – chosen as examples of the Romance and Germanic families – will be the object languages in an attempt to draw a dividing line between two semantically close subcategories of temporal phrases – **time-denoting expressions** and **temporal locating adverbials** (henceforth TDEs and TLAs, respectively). Nevertheless, the advocated hypotheses are expected to apply to comparable expressions in other languages as well. The formal framework for analysis will be the Discourse Representation Theory (DRT).

In general informal terms, the difference between TDEs and TLAs can be put as follows: the former include (direct or indirect¹) representations of intervals, or sets of intervals, while the latter include phrases which locate entities (e.g. eventualities) on the time axis. Often, the distinction between them is unproblematic:

- (1) *a.* Portugal became a Republic [in [1910]].
- b.* Several epidemics swept through Europe [during [the 14th century]].

In these examples, the expressions within the inner brackets – *1910*, *the 14th century* – are clearly TDEs, while the prepositional phrases that contain them as complements – *in 1910*,

¹ Indirect representation of intervals is performed, e.g., by temporal subordinate clauses or situational NPs, which primarily describe eventualities, but can act as derived TDEs when used as complements of temporal prepositions – cf. e.g. Rohrer (1977) and Hamann (1989).

during the 14th century – are TLAs, which temporally locate the eventualities represented in the remainder of the clause.

Sometimes, however, the dividing line between these two categories is unclear. This is due namely to the existence of expressions that can surface with exactly the same form in the typical contexts (to be defined below, in section 2) of both TDEs and TLAs, hence appearing to be **ambivalent**. This is the case of relatively simple expressions like English *now*, *then*, *yesterday*, and *last week*, for instance (or their approximate Portuguese counterparts *agora*, *então*, *ontem*, and *a semana passada*, respectively). See the following pairs of sentences, where the expressions in italics occur in a typical context of a TDE (namely as the complement of *since* or *until*) in the *a* sentences, and in a typical context of a TLA (namely in adverbial position) in *b*:

- (2) *a.* John has been in Paris since *yesterday*.
b. John left the hospital *yesterday*.
- (3) *a.* Until *then*, John had been happy.
b. *Then*, John felt very miserable.
- (4) *a.* John has been in Paris since *last week*.
b. John left for Paris *last week*.

More interestingly, this is also the case of relatively more complex expressions, which include a temporal preposition (or prepositional-like particle), such as English *before*, *after*, *between*, *when*, *ago* or *from* (or their approximate Portuguese counterparts *antes*, *depois*, *entre*, *quando*, *há* and *de (...a)* respectively):

- (5) *a.* John has been a clerk since *before 1980*.
b. John graduated *before 1980*.
- (6) *a.* John was a clerk until *three years ago*.
b. John graduated *three years ago*.

This distribution raises a categorisation issue that I will try to tackle in this paper, namely whether this kind of **apparently ambivalent phrases** should be regarded as temporal locating adverbials, as time-denoting expressions or as both. My contention here will be that they should (all) be taken as **mere time-denoting expressions**, i.e. expressions that denote intervals, or sets of intervals, but that do not – just by themselves – locate eventualities on the time axis, therefore requiring the presence of an – explicit or implicit – temporal preposition like *in*, *during*, *since*, *until*, or the like, when used adverbially. Before proceeding to the arguments,

let us briefly consider some basic semantic and syntactic properties of the categories under analysis.

2 Basic semantic and syntactic characterisation

The semantic characterisation of TDEs and TLAs, already briefly sketched above, is next formulated.

Time-denoting expressions represent intervals or sets of intervals. They do not, just by themselves, locate the eventualities (or other entities) described in the structures to which they apply. Formally, within a DRT- framework, a given time-denoting expression **TDE** simply introduces a time discourse referent **t**, together with a condition of the form **TDE (t)**. TDEs may (but need not) occur as part of a TLA – cf. *Paulo died in 1980* vs. *1980 was a splendid year*.

Temporal locating adverbials contribute a more complex meaning. More specifically, I assume that they play two concurrent roles (cf. Mória 2000a, for details): (i) they define the location time of the sentence – **t** – out of the interval represented by the complement TDE of the temporal preposition – **t_c** –, i.e. that state that some relation **R** holds between the two intervals: **R (t, t_c)**; for instance, **t_c** may coincide with **t** (with e.g. *in-* or *during-*phrases), or set one of its boundaries (with e.g. *since-* or *until-*phrases); (ii) they contribute to defining a relation **R'** (e.g. overlap or inclusion) between the location time **t** and the located eventuality **ev** (which is described in the basic sentence) – **R' (ev, t)**.

These differences in **denotation** go, quite naturally, on a par with differences in **distribution**. An obvious one involves the *(im)possibility of direct combination with eventuality descriptions*. Being mere designators of intervals, or sets of intervals, TDEs – as such – are expected not to combine directly with descriptions of eventualities, this combination requiring the presence of a locating particle, such as *during* or *in*. This clearly tells *1910* apart from *in 1910*, for instance:

- (7) Portugal became a Republic *(in) 1910.

Conversely, other contexts are apparently exclusive to TDEs. In these contexts, temporal expressions headed by e.g. *in*, *during*, *since* or

until cannot (in principle) occur. Four of such contexts are described as follows: (i) arguments of temporal nominal predicates like *period*, *year*, or *month* – cf. (8a) – or of non-temporal predicates (like *terrible* or *disaster*) representing properties that can be predicated of time stretches – cf. (8b); (ii) arguments of equative *be*, in constructions where the other member of the equation is an (undisputed) TDE – cf. (8c); (iii) (normally prepositioned) complements of temporal predicates, like *schedule (for)*, *date (from)* or *date back (to)* – cf. (8d-e); (iv) complements of temporal prepositions like *since* or *until*: – cf. (8f):

- (8) a. (*In) 1910 was a very tense year in Portugal.
 b. (*In) the year 1980 was a disaster to me.
 c. (*In) 1910 was the year in which Portugal became a Republic.
 d. The elections are scheduled for (*in) June.
 e. This bridge dates from (*in) the 12th century.
 f. Portugal has been a Republic since (*in) 1910.

Many temporal expressions only occur in the typical contexts of TDEs, and can therefore, rather uncontroversially, be classified as such. Some examples in Portuguese and English are: *o século XX / the 20th century*, *os anos 70 / the seventies*, *o ano de 1910 / the year 1910*, *Janeiro / January*, *11 de Outubro / October 11*, *as três horas / three o' clock*, or *o meio-dia / noon*. However, as was said above, many other expressions may occur, with the same surface form, in the typical contexts of both TDEs and TLAs, thus raising the already mentioned categorisation issue. Let us now consider these apparently ambivalent expressions in some detail.

3 Apparently ambivalent time-denoting / temporal locating expressions

A first group of apparently ambivalent phrases is composed of sequences that can freely occur *with or without* a temporal locating preposition, without semantic variation, when combined with eventuality descriptions. Some examples, in Portuguese, are the names of days of the week – e.g. *sábado [Saturday]* – and expressions with the deictical adjective *passado [last]*, like a

semana passada [last week]. See the following Portuguese sentences (whose parenthesised elements may or may not be expressed):

- (9) O museu foi reaberto (em) a semana passada.
 “the museum was reopened (in) the week past”
 [The museum was reopened last week.]
 (10) O museu estará aberto (no) *sábado*.
 “the museum will-be open (on-the) Saturday”
 [The museum will be open on Saturday.]

In these examples, if the parenthesised elements are omitted, the expressions in *italic* are used as complete TLAs; otherwise (i.e. if the preposition *em* is explicit), they are used as mere TDEs (as is, for that matter, the case if they are preceded by an explicit preposition like *desde [since]*).

In general, the (non-)mandatory character of the preposition in this type of constructions seems to be syntactically or lexically determined, varying from language to language for parallel expressions. Note, for instance, that the grammatical English equivalent of (9) is obligatorily non-prepositioned, while the counterpart of (10) is prepositioned.

A second (larger) group of apparently ambivalent phrases includes expressions that systematically occur *without* any (explicit) temporal locating particle in adverbial position. English expressions like *last week*, or referentially dependent English and Portuguese adverbs like *today / hoje*, *yesterday / ontem*, *tomorrow / amanhã*, *now / agora*, and *then / então* belong in this group. Accordingly, the main difference with respect to the first one (mentioned above) is the ungrammaticality of the use of a temporal preposition like English *in* or Portuguese *em* in sentences where these expressions occur adverbially:

- (11) a. Ana got a new job (*in) *yesterday*.
 b. A Ana arranjou um novo emprego (*em) *ontem*.
 (12) a. Ana is in his office (*in/at) *now*.
 b. A Ana está no escritório (*em) *agora*.

This contrasts with the possibility of using the same expressions as complements of other temporal prepositions, like English *since* or *until*, and their Portuguese counterparts *desde* and *até*:

- (13) *a.* Ana has been working in this company since *yesterday*.
b. A Ana trabalha nesta empresa desde *ontem*.
- (14) *a.* Ana was in her office until *now*.
b. A Ana esteve no escritório até *agora*.

The non-prepositioned adverbial cases illustrated in sentences (9)-(12) above are treated by many authors – regarding English and other languages – as involving a null preposition with a value close to that of *in* (or *on* or *at*, depending on the complement). Examples are Asher *et al.* (1995: 109) for the French adverbial *hier* [*yesterday*], and Kamp and Reyle (1993), for the English adverbials with *last*: “from a semantic viewpoint *last Sunday* functions rather like a prepositional phrase, with an empty preposition whose semantic contribution is the same as that of *on* in *on Sunday*. This is what we assume the syntax of the adverb *last Sunday* to be” (p. 623).

At this point, it must be stressed that, under this “null preposition analysis”, the expressions at stake are *not ambivalent*: they are **mere time-denoting phrases** in all the contexts in which they occur. The property that distinguishes them from other “canonical” TDEs (like *1910*) is the fact that they can – or must – occur with a null locating preposition, when they are used adverbially.

I will embrace this analysis and will, furthermore, advocate – departing in this case from the analyses currently adopted in the semantic literature – that several other expressions that are normally treated as “canonical” TLAs should be put on a par with those just mentioned, i.e. they should also be treated as **mere time-denoting expressions that in adverbial contexts occur with a null locating preposition**. These are namely the structurally complex expressions headed by the English particles *before*, *after*, *between*, *when*, *ago*, or *from* (and possibly others, similar to them), and their counterparts in Portuguese, and possibly other languages (cf. Table 1 below).

Notice that these complex expressions already contain an explicit temporal particle (prepositional or similar). Thus, when occurring in adverbial position with no other explicit preposition, I will postulate the existence of a **second invisible temporal particle**:

- (15) *a.* John graduated \emptyset_{in} *before 1980*.
b. John graduated $\emptyset_{in/at}$ *three years ago*.

I think that at least four groups of these structurally complex expressions – listed below – can be distinguished (attending to the process by which they define time intervals). The question of how, precisely, intervals are defined via these complex expressions, i.e. of what specific properties these intervals have, will be addressed only superficially, since this question is far too complex to be tackled within the limits of this paper. In the sets of sentences given below, examples *a* illustrate the occurrence of the italicised expressions in a characteristic context of a TLA, and examples *b* their occurrence in a characteristic context of a TDE.

I. Phrases expressing anteriority or posteriority, in particular those headed by English *before* and *after*, and Portuguese *antes* and *depois*:

- (16) *a.* Ana got married *after 1980*.
a'. A Ana casou *depois de 1980*.
b. Ana worked in this company until *after 1980*.
b'. A Ana trabalhou nesta empresa até *depois de 1980*.

These expressions define intervals (**t**) by explicitly defining one of their boundaries (**t₁**) – cf. Mória (1998):

- (17) *a.* *before* COMPL: $[\text{COMPL}(t_1)] \wedge [t \supset \subset t_1]$
b. *after* COMPL: $[\text{COMPL}(t_1)] \wedge [t_1 \supset \subset t]$

II. Phrases with English *between*, and Portuguese *entre*:

- (18) *a.* Europe was at war *between 1914 and 1918*.
a'. A Europa esteve em guerra *entre 1914 e 1918*.
b. This painting dates from *between 1914 and 1918*.
b'. Este quadro data de *entre 1914 e 1918*.

These expressions define intervals (**t**) by explicitly defining both their boundaries (**t₁** and **t₂**):

- (19) *a.* *between* COMPL₁ and COMPL₂:
 $[\text{COMPL}_1(t_1)] \wedge [\text{COMPL}_2(t_2)] \wedge$
 $[\text{beg}(t) \subseteq t_1] \wedge [\text{end}(t) \subseteq t_2]$

- b. *between* COMPL²: [COMPL(T)] \wedge
 $[T = t_1 \oplus t_2] \wedge [\text{beg}(t) \subseteq t_1] \wedge$
 $[\text{end}(t) \subseteq t_2]$

III. Phrases with English *when*, and Portuguese *quando*:

- (20) a. The president hired a new secretary
when he returned from Brazil.
 a'. O presidente contratou uma secretária
 nova *quando regressou do Brasil.*
 b. The president scheduled a meeting for
when he returns from Brazil.
 b'. O presidente marcou uma reunião para
quando regressar do Brasil.

These expressions define intervals (**t**) via one of a series of possible relations **R** with the eventuality expressed in the sentence they include (**ev**)³:

- (21) *when* COMPL: [COMPL: ev] \wedge [t = R (ev)]

IV. Phrases like English *X ago*, *X from* COMPL, *X before/after* COMPL, and Portuguese *há X*, *de* COMPL *a X*, *X antes/depois (de)* COMPL (where *X* is either a predicate of amounts of time – like *two hours* – or a quantified predicate of times, or eventualities, like *three weekends*, or *three classes*):

- (22) a. Ana will get married *two months from now.*
 a'. A Ana vai casar *daqui a dois meses.*
 b. The law will be in force until *two years from now.*
 b'. A lei estará em vigor até *daqui a dois anos.*

These expressions define intervals (**t**) by measuring time, or counting temporally ordered entities, from anchor points (**Apt**)⁴. Two examples of the relevant logic conditions (expressed in the language of DRT), for cases involving time measurement, are as follows:

² (19b) applies to structures with plural complements, like *between the two world wars*.

³ **t** may either be the “loc” (in the sense of Kamp and Reyle, 1993) of **ev**, its resultant state, or its preparatory phase, for instance; in more complex cases, an eventuality derived from **ev** by Aktionsart shift may be involved (cf. e.g. Moens, 1987 and Carecho, 1996). These complex issues are obviously beyond the scope of this paper.

⁴ Cf. Mória (2000a [chapter 7] and 2000b) for a more thorough analysis of these expressions.

- (23) a. COMPL *ago*: [COMPL (mt)] \wedge
 $[\text{dur}(t_1) = \text{mt}] \wedge [\text{beg}(t_1) \approx t] \wedge$
 $[\text{end}(t_1) = \text{Apt}]$
 b. X-TIME *before* COMPL: [X-TIME (mt)],
 $[\text{COMPL}(\text{Apt})] \wedge [\text{dur}(t_1) = \text{mt}] \wedge$
 $[\text{beg}(t_1) \approx t] \wedge [\text{end}(t_1) = \text{Apt}]$

I. temporal locating particles	
Portuguese	English
<i>em, a</i>	<i>in, on, at</i>
<i>durante</i>	<i>during, for</i> ⁶
<i>enquanto</i>	<i>while, as long as</i>
<i>ao longo de</i>	<i>throughout</i>
<i>desde, a partir de</i>	<i>since, from</i>
<i>até</i>	<i>until, by</i>
<i>de...até / a</i>	<i>from...until / to</i>
II. heads of (structurally complex) time-denoting expressions	
Portuguese	English
<i>antes</i>	<i>before</i>
<i>depois</i>	<i>after</i>
<i>entre</i>	<i>between</i>
<i>quando</i>	<i>when</i>
<i>haver</i>	<i>ago</i>
<i>de...a</i> ⁷	<i>from</i>
X-TIME <i>antes</i>	X-TIME <i>before</i>
X-TIME <i>depois</i>	X-TIME <i>after</i>

Table 1. Partition of the set of particles traditionally classified as temporal locating

It must be stressed that by analysing all these four groups of expressions as mere TDEs, the set

⁵ The condition [beg (*t*₁) \approx *t*] must be read as: “the interval **t** (which is the interval denoted by the expression as a whole) is an interval surrounding (up to a contextually dependent limit) the beginning of **t**₁”. This definition is motivated by the fact that these phrases do not behave as punctual, but rather as extended ones (cf. Mória, 2000a).

⁶ I take *for* to be a temporal locating preposition in structures like *for the last two months* or *for those two months* (cf. Mória, 2000a [chapter 5]).

⁷ The discontinuous particle *de...a* can form a TLA – e.g. *de 1980 a 1985* (*from 1980 to 1985*) – or a TDE – e.g. *daqui a cinco dias* (*five days from now*).

of temporal particles that are traditionally classified as temporal locating is partitioned into two main groups, illustrated in Table 1.

So far, the analysis under discussion was essentially motivated by the multiple categorial behaviour of the expressions at stake, namely their ability to appear in the contexts of both TLAs and TDEs. The point to stress is that this analysis provides a uniform treatment of such phrases, avoiding a double categorisation, and, as a consequence, (arguably) conferring a stronger generalisation power to the system. In the next section, I will briefly show that independent motivation exists for the two components of the advocated analysis: (i) the assignment of the categorial-denotational status of TDEs to the relevant expressions; (ii) the postulation of a higher invisible temporal locating preposition.

4 Further motivation for the analysis

As for the assignment of the categorial-denotational status of TDEs to the relevant expressions, several arguments are supplied in Mória (1998) to support a time-denoting analysis of *before*- and *after*-phrases which can be adapted, in a broader perspective, to the group of expressions under analysis. Among these arguments, I underline the possibility of anaphoric reference to the intervals denoted (in adverbial or non-adverbial contexts)⁸:

- (24) *a.* Every student who graduated [before the stock market crashed]_t is presently employed. It was not so difficult to get a job [then]_t
b. This painting does not date from [before 1300]_t. There were no paintings like this [then]_t / at [that time]_t / in [that period]_t

As for the null locating preposition, the following facts can be taken as favourable arguments:

- i.** The systematic optionality of the postulated locating preposition with a subgroup of

⁸ Other advantages of the proposed analysis seem more specific to the *before*- and *after*- type of phrases (cf. Mória 1998, where I argue for an analysis in which these phrases, when occurring adverbially, do not directly assert anteriority or posteriority, but rather inclusion – marked by null *in* – in an interval defined along the lines of (17)).

ambivalent expressions – e.g. Portuguese *sábado* or *a semana passada* (cf. (9)-(10), repeated below):

- (25) *a.* O museu esteve encerrado (em) a semana passada.
b. O museu estará aberto (no) sábado.

ii. The (explicit) presence of the postulated preposition in comparable forms of other language variants, or of other languages – cf. e.g. *em antes* (literally, *in before*), in certain Northern Portuguese dialects, or *in between*, in English:

- (26) *a.* “...que as espigas, **em antes** de ir para o canastro, tinham de se pôr a secar”
 (*corpus* of oral discourse from the North of Portugal)
b. Berlin was well known for its good living **in between** the two world wars.
 (Collins Cobuild English Dictionary)

iii. The (explicit) presence of the postulated preposition before semantically equivalent structures with the predicate *period*:

- (27) *a.* That happened \emptyset_{in} [before Christmas].
b. That happened in [the period before Christmas].
 (28) *a.* Ana was travelling \emptyset_{in} [between June and October].
b. Ana was travelling in [the period between June and October]

Marginally, but quite symptomatically, it must be emphasised that the presence of null prepositions seems to be motivated also within other temporal subsystems, like duration and temporal quantification:

- (29) *a.* Ana only slept \emptyset_{for} about half an hour.
b. Ana went to Paris \emptyset_{in} every week.
 (cf. e.g. Rothstein, 1995)

In addition to the arguments already presented, the following (crucial) one can be adduced: the advocated analysis correctly predicts the possibility of **recursion of the particles treated as heads of complex TDEs** and the impossibility of recursion of the true temporal locating particles (given their role in defining the – unique – location time of the sentence). Compare the grammaticality of expressions like those in (30) with the ungrammaticality of e.g. those in (31):

- (30) *a.* *before* two months ago
a'. *antes de há* dois meses

- b. (in the period) *between* two years *ago* and six months *ago*
- b'. (no período) *entre há dois anos e há seis meses*
- c. *between two months before* the start of the war and the second week of the fighting
- c'. *entre dois meses antes* do começo da guerra e a segunda semana de combates
- d. More than three months elapsed *between* when the bridge was built and when the first vehicles crossed it.
- d'. Passaram-se mais de três meses *entre quando* a ponte foi construída e quando os primeiros automóveis a cruzaram.

(31) **since in*, **in since*, **until throughout*

Obviously, the occurrence of more than one of these heads in a sequence is limited by e.g. (i) specific properties of the connectives, which prevent, for example, in normal circumstances, the sequences *before after*, or *in X-TIME ago*, and (ii) discourse simplicity, which imposes the avoidance of some theoretically possible forms if simpler equivalent ones are available.

Note still that, given the appropriate conditions, these rather complex expressions may occur as the complement of an explicit temporal locating preposition, thus forming a particularly complex TLA:

- (32) A: I will give up smoking two weeks from now.
 B: I don't believe you. You will go on smoking *until long after* {*that* / ²*two weeks from now*}.

5 Conclusion

By analysing all the phrases discussed in this paper as mere TDEs, I depart from the usual picture of time adverbials in the literature (where the expressions at stake are often included in the class of frame, or locating, adverbials – cf. e.g. Bennett and Partee, 1978, or Kamp and Reyle, 1993 – or are grouped into different subclasses – cf. e.g. Quirk *et al*, 1985, or Smith, 1991). Given the limits of this text, it is not possible to go through the previously proposed categorisations here (cf. Mória, 2000a, for a brief analysis of some of them). Suffice it to say that those categorisations do not seem to account for the type of differences focussed on

in this paper, unless a double-category approach is assumed⁹.

The dividing line between temporal locating adverbials and time-denoting expressions I propose is drawn (for the structurally complex cases) according to the particle that heads them, as expressed in Table 1. This dividing line corresponds with significant distributional differences exhibited by the particles at stake.

Quite interestingly, a similar partition seems also pertinent within the **domain of spatial adverbials**. Apparently, (at least some of) the arguments used to advocate a time-denoting status for e.g. *before*-phrases can also be used to claim a comparable (space-denoting) status for expressions like *under the table*, which, in some languages, occur with an explicit spatial locating preposition – “AT under the table” (Chinese)¹⁰. Spatial homonyms of temporal locating prepositions – e.g. English *in*, *on*, *at*, *through(out)*, *from...to*, or Portuguese *em*, *através*, *desde*, *a partir de*, *até*, *de...a* – clearly qualify as **spatial locating particles**. Spatial prepositions like, for example, English *between*, *behind*, and *near* and their Portuguese counterparts *entre*, *trás*, and *perto* possibly qualify as **heads of (structurally complex) space-denoting expressions** – cf. their occurrence in argumental position in the following Portuguese example:

- (33) A Ana deslocou o sofá para {entre as duas portas / trás da porta / perto da janela}.
 “the Ana moved the sofa to {between the two doors / behind of-the door / near of-the window}”

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⁹ My primary concern is the distinction between TDEs and TLAs, based on the (generic) syntactic and semantic differences considered in this paper. Obviously, this does not preclude further subcategorisation of the expressions at stake (or of some of them), based on other syntactic or semantic properties (cf. e.g. the categorisations of Borillo, 1983, which pays heed to anaphoric properties, or Asher *et al.*, 1995).

¹⁰ James Higginbotham, p.c.

References

- ASHER, Nicholas, Michel Aurnague, Myriam Bras and Laure Vieu. 1995. "Spatial, Temporal and Spatio-Temporal Locating Adverbials in Discourse". In Pascal Amsili, Mario Borillo and Laure Vieu (eds.), *Workshop Notes of the 5th International Workshop on Time, Space and Movement TSM'95*: 101-119.
- BENNETT, Michael and Barbara Partee. 1978. *Toward the Logic of Tense and Aspect in English*. Indiana University Linguistics Club, Bloomington. (revision of a 1972 manuscript)
- BORILLO, Andr e. 1983. "Les Adverbes de Reference Temporelle dans la Phrase et dans le Texte". *DRLAV Revue de Linguistique*, 29: 109-131.
- CARECHO, Judite. 1996. *Sobre a Sem ntica das Constru es com quando*. Master's Thesis. Faculdade de Letras da Universidade de Lisboa.
- HAMANN, Cornelia. 1989. "English Temporal Clauses in a Reference Frame Model". In Alfred Schopf (ed.), *Essays on Tensing in English*, vol. II: *Time, Text and Modality*. Max Niemeyer Verlag, T bingen. 31-154.
- KAMP, Hans and Uwe Reyle. 1993. *From Discourse to Logic. Introduction to Modeltheoretic Semantics of Natural Language, Formal Logic and Discourse Representation Theory*. Kluwer, Dordrecht.
- MOENS, Marc. 1987. *Tense, Aspect and Temporal Reference*. Ph.D.Thesis. University of Edinburgh.
- M IA, Telmo. 1998. "On the Semantics of Temporal Operators Expressing Anteriority and Posteriority" (paper presented at the conference The Syntax and Semantics of Tense and Mood Selection, University of Bergamo, Italy, July 1998; to be published by Cambridge University Press).
- M IA, Telmo. 2000a. *Identifying and Computing Temporal Locating Adverbials with a Particular Focus on Portuguese and English*. Ph.D Thesis. Universidade de Lisboa.
- M IA, Telmo. 2000b. "On Temporal Constructions Involving Measurement and Counting from Anchor Points – Semantic and Pragmatic Issues" (paper presented at the Second International Conference in Contrastive Semantics and Pragmatics, University of Cambridge, England, September 2000; to be published in the proceedings).
- QUIRK, Randolph et al. 1985. *A Comprehensive Grammar of the English Language*. Longman, London.
- ROHRER, Christian. 1977. "How to Define Temporal Conjunctions". *Linguistische Berichte*, 51.
- ROTHSTEIN, Susan. 1995. "Adverbial Quantification over Events". *Natural Language Semantics*, 3: 1-31.
- SMITH, Carlota. 1991. *The Parameter of Aspect*. Kluwer, Dordrecht.