

Contrastive tense and aspect data

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Foreword

This report originated in a paper I was to write with Lauri Carlson on the semantics of tense and aspect, and which never became ready, since the formalization part could not be made good enough in the required schedule (first trimester of 1991). In the original paper, I tried to describe the data and propose a theory of my own. Now I decided to select only the description of the problems and the general philosophy of the treatment I was proposing at that time, and publish it as an INESC internal report.

This text is thus simply a linguistic paper on the differences between the English and Portuguese tense and aspect systems, conceived to explain the latter to non-Portuguese-speaking readers, and to show that the differences may bring significant insight for the study of each language.

As far as my own work is concerned, this is an historical paper, where the origins of my theory of aspectual classes can be found, with detailed justification and examples. However, at the time of my writing this introductory note (October 1991), I already have a more sophisticated theory of aspectual classification and a rather strong opinion on how the data presented here should be reformulated. Nevertheless, if the data are mainly correct, their presentation here, no matter how biased by an early view, should endure a longer life than ending in the wastebasket, I think. Not only the bare facts can be cited, but a comparison of different theories trying to explain these facts would be possible. I therefore hope to cite this report often from now on, if only to demonstrate how my new views are more adequate.

A word of caution should be added: this paper does not intend to cover **all** differences between English and Portuguese, just a few. It is also not very detailed on the similarities, since its purpose was to highlight problems for translation (or for modelling the same phenomenon with the same model in two different languages). Thus it is not to be read by the layman who wants to learn Portuguese. I would say it requires solid knowledge of the two languages, or that the reader is familiar with the tense and aspect literature and its problems.

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Tense and aspect data

1.1 Introduction

This paper reports a theory of tense and aspect (henceforth T&A) whose development is still at an initial stage, and thus many details are not totally worked out nor all problems solved. It seems that the reporting of this endeavour may however already be useful given that our approach incorporates a set of new ideas which we proceed to summarize.

The first point is methodological: we use as data (source of problems and confirmation of our ideas about the language) bilingual examples. This leads on one hand to a less intuition-driven discussion of T&A phenomena, providing sets of unarguable examples to start with; also, it makes the analysis less biased by the particularities of a specific language, and also hopefully broader in coverage.

In this paper, we argue for a unified theory of tense and aspect, where by *unified* we understand that the meaning of every and each T&A mechanism works essentially the same way, that is, syntactic categories do not imply at the level of semantics a fundamental distinction. While this idea is not original (see for instance Moens (1987)), we present the sketch of a formal translation into first-order predicate logic that obeys this condition.

The departing point, aspectual classes, are represented by means of primitive states with a particular temporal profile. Then, a T&A mechanism is represented as a set of assertions about its argument plus a set of assertions about the mechanism with the argument.

Finally, we suggest the introduction of two new aspectual classes, 'interval states' and 'acquisitions', in addition to the Vendlerian classification. We see aspectual classes as primitives regarding sentential T&A calculus, though they are in themselves decomposable (as mentioned above, we propose a semantic description in terms of temporal profile and basic states) in a lexical semantics perspective. Still, we agree with Verkuyl (1989) that it is rather some properties of those classes that are actually used in the aspect theory, namely, the reference to different kinds of temporal objects.

1.2 General remarks

We proceed with some remarks that we consider relevant to a full understanding and assessment of this work:

- We consider aspectual class (verb aspect, Aktionsart, whatever you want to call it) to be a meaningful property of VERBS. That is, a verb carries in its basic meaning some indication of aspect.

The interaction of other mechanisms may change (transform, restrict, add to) the initial aspectual class, and this explains why several sentences with the same main verb can belong to different aspectual classes. There is an aspectual class connected to the verb, though: for instance, the verb "build" denotes an accomplishment. Since it is transitive, it is more usual to talk about the verb phrase "build a house", but build X, whatever is X, is an accomplishment.¹

- Our semantic processing assumes an independent syntax, and is defined over full syntactic analyses. No isomorphy is thus required between the semantic and the syntactic representations or rules.

We assume that the parser outcome yields at least phrase boundaries and phrase identification, argument structure, and order of constituents. Semantic processing may then discard some syntactical analyses, partially order the remaining ones according to a measure of explicit information, while it can also create more than one interpretation out of the same syntactical parse.

- We do not describe T&A mechanisms as purely disjunctive, since we believe that there is at least a part of meaning which is shared by the several 'possible meanings', moreover, that is what precisely licenses the use of the same word or expression by the language. This approach will be particularly fruitful while analysing those examples in which one linguistic device is translated into two different ones.
- Our primary concern while developing the representation sketched here was to get an intuitively satisfying translation, with a minimum of outside concepts involved. Thus we have not invoked notions such as causality or contingency as other authors do (see for instance Dowty (1979) and Moens & Steedman (1988)).

Finally, we compared Portuguese and English, concentrating in their past tenses.

1.3 Aspectual classification

We start by mentioning briefly the aspectual classification we will constantly alluding to through the informal description. Contrarily to most authors who, though arguing for an aspectual classification of verbs content themselves with a simple process (state) / event dichotomy, we make use of the several classes and will show that they have a distinguished behavior in terms of the T&A devices studied.

We consider aspectual classes a semantic (and therefore universal (or cross-linguistically) valid) matter, and thus their definition is independent of the particular language considered. But, clearly, their existence can be objectively verified through observable different behavior in connection with the T&A devices.

This is not the place to extensively argue for a particular classification by exhaustively listing linguistic criteria. We will, however, discuss briefly the introduction of two new classes and present our view on the ontological status of such a classification².

We consider that there are three kinds of simple (irreducible) temporal patterns (States³, Activities⁴ and Achievements⁵), that cannot be decomposable in simpler distinctive parts, and are not interdefinable. We then posit the existence of lexical items simultaneously (even though not necessarily ambiguously) meaning a set of time patterns: Accomplishments⁶ denote both an activity and an achievement (see Dowty (1979:124), Moens (1987:47), Bennett (1981:17), Heinämäki (1974:11) for similar views); Acquisitions⁷ denote both an achievement and its resulting state; Interval States⁸ encompass an activity and a state.

It should be noted that our proposal resembles Moens (1987)'s concepts of preparatory phase, culmination and consequent state. However, in his work aspectual classes did not match parts of this pattern, as here. On the contrary, the full activity-achievement-state was always present as a possibility, even though no example was given where the three parts simultaneously played a role (in which case another class would be missing in our classification).

The aspectual classes are lexical in nature, therefore, there has to be at least one lexical verb in each class. It is not required that two different languages use the same classes for the same concepts: in particular, it is often the case that a verb belonging a complex lexical class in one language translates into two lexical items, each pertaining to one simple class in the other language (see for instance (acq) *conhecer* into (ach) **meet** and (st) **know**; or (acq) *sitar-se* into (ach) *sentar-se* and *estar sentado*; or even (acc) **graduate** into (act) *tirar o curso* and (ach) *acabar o curso*).

1.3.1 Acquisitions

Some arguments must be given for the existence of acquisitions, since we are the first to our knowledge to propose it. (But see Heinämäki (1984) and Dowty (1979)⁹).

- Imperfeito / Perfeito (two different pasts) distinction in Portuguese, consistently selects the two readings (two clauses of acquisitions). This is the clearest evidence, and was the source to investigate the occurrence of this class in more detail.

Ele conheceu-a / ele conhecia-a. (He met her / he knew her)

Ele soube da história / ele sabia da história (He learned about the matter / he knew the matter)

- Perfeito does not imply the negation of its argument in a time prior or equal to the present, as is the case with all other classes.

Ele lembrou-se do nome e ainda se lembra. (He remembered the name and still remembers it)

Ele reconheceu-a e ainda a reconhece. (He recognized her and still recognizes her)

- Occurrence with Começar/Begin (as opposed to achievements)

Ele começou a perceber que estava enganado. (He began to realize that he was wrong (or he started realizing))

Ele começou a conhecê-la nessa noite. (He began to know her on that evening)

* *Ele começou a morrer nessa manhã.* (He began to die in that morning)

* *Ele começou a dar-me o livro.* (He started giving me the book)

- Occurrence in simple present (as opposed to achievements) in both languages: was already illustrated above.
- Not occurring in the English present perfect (as opposed to states and achievements)

* He has remembered her.

* He has recognized her at the party.

* He has sat in the sofa.

He has known her since they were kids.

1.3.2 Interval states, states and activities

Given the fact that the difference between states and activities is one simply of perception time (the latter requiring time to be perceived while the former don't)¹⁰, it seemed at first that states and activities should be included in the same class¹¹, as a difference in perspective (see Smith (1980)) did not seem to require a semantic distinction. However, the clearly distinct behavior of the elements of these two classes (namely in connection with Perfeito Composto, Andar, Estar, Tornar, Continuar, Durante, etc.) forced us to acknowledge and formulate this distinction as basic. The distinction seems to be intuitively captured by the dichotomy homogeneity versus discreteness (this last implying the definition of a set of relevant times).

A problem with the traditional distinction between states and activities is the use of the progressive as the most widely used criterion. This practice makes it difficult to clearly separate the meaning of aspectual classes (for which the progressive is merely an operational criterion) from the meaning of the progressive as a T&A device in its own right. To see that they are indeed two different things, let us note that the progressive can be applied to classes which are not activities (e.g. states, achievements), while elements of the activity class can definitely be used without progressive.

Given the fact that states, activities and interval states are those who, after having ended, do not have any observable result, we will single activities from the semantic criterion that they require a set of distinct (neighbouring) times to be assessed. Operationally, that can be determined by their appearance in sentences like: "I saw him ACT-ing", or *Eu vi-o a ACT*.

Why now postulate the existence of the complex class we called interval states? We claim that there are verbs that share some properties of both states and activities (see also Carlson (1981)) and will proceed by giving some arguments.

The simple reason to call this class interval states is their having an inherently durative meaning, that is, taking time. Thus, they presuppose an interval. Their idiosyncrasy shows in that this interval can as easily be seen as indivisible (continuous, closed) as as a set of distinct times (as activities have it).

We first show the similarities between interval states and states proper¹², then we indicate how this class resembles activities.

Let us look at

He lived in Braga (for several years).

He suffered a lot (for several years).

He wore glasses (for several years).

He waited there (for several years).

which we claim are interval states, versus

He was black.

He was the president / a teacher.

He had five brothers.

He remained there.

The first similarity is that these verbs accept the present tense, as the expression of a present property. Also, in the (English simple) past, both classes allow the meaning of pastness of the subject instead of pastness of the relationship expressed in the sentence: that is, “he was black” may mean either that he changed his color or that he is no longer alive (and thus every property of him ceased to hold). Note that this ambiguity also holds for “He wore glasses” or “He lived in Braga”.

On the contrary, an activity verb does not have this interpretation, that is, for the truth of “he ran” there is no need to check the present existence (or not) of the subject, or better, this does not influence its truth. In other words, the fact that the verb still holds at present does not make the sentence in the past weird, as is the case with states, or interval states, in *Perfeito*.

Ele foi português. (He was Portuguese) (he is dead now, or changed nationality - cannot be Portuguese still)

Ele teve cinco irmãos. (He had five brothers) (he is dead now or some brothers died - cannot have them five still)

Ele usou óculos. (He wore glasses) (he is dead, or stopped wearing them, is not using them now)

Ele dançou no Bolchoi. (He danced in Bolchoi) (he may be alive, may still dance, and even in Bolchoi still)

A clear similarity between interval states and activities, on the other hand, is their accepting both the progressive with a different meaning of those of proper states. In fact, while for states the progressive can at most mean a (weaker) degree of what would be asserted by the verb in the simple form, and is thus quite rare,

He’s resembling his father. (weakly resembles him, will resemble him if he develops the way he is developing)

I’m liking the play. (weakly liking, but it may develop in a true liking if it goes on like this)

I’m being a teacher. (for the time being I am playing the role of a teacher, but without the conviction that I am a true one)

for activities and interval states the progressive singles out an interval (consisting either of time points or a homogeneous one) where what is described by the verb holds (not in a weaker degree).

He is running.

He is living in Paris.

He is wearing red trousers.

The main import of progressive for interval states is temporariness, which, though also part of the general meaning of progressive, is more salient for this class given the following equivalence between the simple form and the progressive in English, not valid for activities:

He is living in London \Leftrightarrow He lives in London now.

He was wearing glasses. \Leftrightarrow He wore glasses then.

* He is running. \Leftrightarrow He runs now.

* He is teaching. \Leftrightarrow He teaches now.

In fact, the simple form of activities has an habitual connotation that cannot be inferred by the performance of an activity in one stretch of time (which is what the progressive allows us to conclude).

It should be mentioned that the distinctions mentioned here will be handled formally in a following section, and that the distinction among these classes will actually play a role in the semantic representation we will compute.

To conclude, we should acknowledge that while the existence of these new classes was fairly argued for, no arguments were given (except the resemblance they bear to the simple classes) to consider them complex classes instead of totally separated ones. However, we should bear in mind that aspectual classes in our framework are not primitives, but rather indicate a set of temporal profiles associated with lexical items, and we were able to describe all classes simply in terms of three basic temporal profiles.

1.4 Differences between English and Portuguese

Since there is not a one-to-one mapping between languages, nor is any language systematically more complex than others, the mapping between the languages cannot be described as a function, but as a set of functions whose domain is either one of the languages (the one more expressive in that subfield). Therefore, the following sections will present the difference between English and Portuguese by highlighting the co-domain. In other words, and in this order, we will discuss

- everything that gets translated by past simple;
- everything that gets translated by Perfeito;
- the same for present perfect;
- by past perfect;
- by the English progressive;
- by the Portuguese one (unmarked, that is, with Imperfeito)
- by the Perfeito progressive.

Then aspectualizers are very briefly compared, and some temporal prepositions are discussed, again using the same criterion of naming the co-domain. (That is, “For” is the heading for everything that gets translated by ‘for’, and so on.) Finally, we have a look at some temporal connectives, and end by discussing a verb sub class which behaves differently in English and Portuguese.

Given that this description is meant mostly as a presentation of a language that may not be known to the reader: Portuguese, together with being the motivation for several decisions in the following formalization, we decided not to load this section with too much explanation of the way we handle these problems in the rest of the paper. This also makes this section hopefully easily usable as bilingual data by other theories or researchers.

1.4.1 Imperfeito versus Perfeito

Imperfeito describes a property holding throughout an indefinite interval, that is, without the speaker or the hearer being able to assess its bounds. The only fact about that interval is that it excludes the present. It is mostly used to express habits, properties, long-lasting features. With the help of quantification (related to the indefinite interval), it can also characterize frequency or disposition.

Perfeito, on the contrary, implies a definite occasion, whose features cease to hold in a later occasion (before or overlapping with the present). So, it has both the meaning of completeness, and of completion (these two notions are related to different aspectual classes, states and achievements, respectively).

English has no past tense that is property-like, as Imperfeito, and therefore the two pasts translate into past simple, with different meanings, though:

Ele era simpático. (IMPERF) (He was nice - property)

Ele foi simpático. (PERF) (He was nice - on that occasion)

And the same for acquisitions (already mentioned in connection with their presentation):

Ele lembrou-se. (PERF) (he remembered - suddenly)

Ele lembrava-se. (IMPERF) (he remembered - property)

Let us return to the first example, which depicts the well-known “instantiation-like” characteristic of some states. The problem is as follows: you can instantiate “to be nice”, “to be good”, “to be bad”, “to be curious”, but not “to be tired” or “to be happy” or “to be famous” or even “to be angry” (for those you need the verb “to get”, which presupposes that the state holds a little after) and certainly not “to be white”, “to be Portuguese”, “to be tall”, rather dubious with “to get”.

Our way out of this puzzle is by noting that while the second group of states mentioned are states proper, the first ones are interval states instead: they have both a state meaning (the one which is generally considered to be their meaning) and a (finite) interval meaning, where they rather resemble accomplishments, if they are uttered in Perfeito.

While it could be maintained that those verbs were truly polysemic, (that is, “be nice” represents “be nice” (state) and “be nice to” (achievement) where the argument to this last has been omitted and has to be reconstructed by the context), their close-relatedness of meanings clearly indicates that should be better described as a common core but some difference, which is what complex aspectual classes do.

It is important to emphasize that tenses select the most appropriate meaning, but do not impose it; namely, it is possible to find contexts where despite the tenses the interpretation yielded is the contrary one:

Ele era simpático para todos os que o rodeavam. (IMPERF) (He was nice to all close to him)

Ele foi simpático em tempos. (PERF) (He once was a nice person)

Ele lembrava-se dela frequentemente. (IMPERF) (He often remembered her)

Ele lembrou-se dela por muitos anos. (PERF) (He remembered her for several years)

With achievements, Imperfeito to be applied there has to be some quantifier that transforms the whole sentence into a property related to an interval:

Ele dava livros aos filhos muitas vezes. (IMPERF) (He used to give books to his children)

Ele deu livros aos filhos muitas vezes. (PERF) (He gave books to his children many times)

In main-subordinate clauses with the same tense (see below for temporal connectives in particular), Imperfeito again has the property reading while Perfeito has only an extensional reading (not allowing further inferences):

Sempre que o Pedro lutava com o Paulo, ganhava. (IMPERF-IMPERF) (Whenever Pedro fought Paulo, he would win / won)

Sempre que o Pedro lutou com o Paulo, ganhou. (PERF-PERF) (In all occasions that Pedro fought Paulo, he won)

The most interesting remark that can be done at this moment is that English compensates for the lack of definition of its simple past tense by supplying different quantifiers or connectives for the different senses (see **often** and **many times** for *muitas vezes*, or **whenever** and **in all occasions** for *sempre que*). This is a pattern that will be seen throughout this whole section, though we won't be able to analyse quantifiers in detail.

Another important difference between the English simple past and Perfeito is the assertion of the latter that the situation described stopped, or, in other words, that an endpoint was reached. This, incidentally, may often imply that the situation is no longer true, but that conclusion does not belong to Perfeito's meaning (as it can be contradicted by the event described occurring again).

* *O carro moveu-se e ainda se está a mover.* (The car moved and is still moving.)

Ela foi católica. (She was a Catholic - but stopped being one)

Ela esteve a nadar. (She was swimming - but stopped)

This will be described by ascribing two indices to Perfeito (that is, making this tense assert two things at distinct temporal points) whereas simple past will only have one. In the cases where the aspectual class that is being subjected to Perfeito has only one index, as is the case with achievements, the two tenses will result in the same meaning.

1.4.2 Present perfect versus past simple

In this case, it is English that makes a distinction that is subsumed by Portuguese Perfeito. For achievements, the distinction between present perfect and past simple simply goes unnoticed in Portuguese¹³:

I've bought a book. I bought a book. *Comprei um livro.*

I've built a palace. I built a palace. *Construí um palácio.*

On the other hand, the well-known distinction of the two present perfect "meanings" in the case of statives (cf. the existential reading and the up-to-now reading of Abusch & Rooth (1990), Mittwoch (1988)) is quite extremely distinguished in Portuguese. The first is given by Perfeito and the second by Presente (present) with a different adverbial (equivalent to "since"):

Estive em Lisboa durante dois meses (no Inverno). (I have been in Lisbon for two months (last winter))

Estou em Lisboa há dois meses. (I have been in Lisbon for two months (now))

This is compatible with our analysis of Perfeito that describes the situation as not holding (at least) at the present moment. Therefore, an up-to-now situation could never be rendered by Perfeito.

Now, we are able to give a tentative analysis of the English present perfect by referring to two temporal objects (its argument holding at the first, like Perfeito), with the second one including 'now', and the first one included in the second. Contrarily to Perfeito, it does not force whatever it is describing not to hold a following point before or equal to 'now'. Thus, it agrees with the Perfeito definition for achievements, but not for states.

1.4.3 The Portuguese "present perfect"

An indefinitely repeated event, or better, an iterative state of affairs, gets rendered in Portuguese by a syntactic analog of present perfect, the Perfeito Composto, formed by the present form of the analog to "have" (*ter*) plus the past participle of the main verb.

This form bears a close analogy to Imperfeito in that it also has some interval implicit (but now including as its last point “now”), and only accepts quantification internal to that interval. So, an indefinitely repeated event - or a continuing state - that extends to the present is rendered in Portuguese by Perfeito Composto:

Tenho almoçado com ele. (I’ve had/been having lunch with him lately)

Tenho corrido bastante. (I’ve been running a lot lately)

Tenho estado em Lisboa. (I’ve been in Lisbon lately (continually))

Tenho comprado muitos livros. (I’ve been buying many books lately / I’ve bought many books recently (not all at the same time))

But, for once-only, or countable events, Perfeito is still the right translation:

Já comprei o livro. (I’ve already bought the book)

Nunca provei caviar. (I’ve never tasted caviar)

Joguei golfe duas vezes na vida. (I’ve played golf twice in my life)

This shows that while it is the progressive in English that accounts for the iterativity on the sentences above, in Portuguese it is Perfeito Composto. What the two (present perfect and Perfeito Composto) share in meaning is the existence of the interval ending in ‘now’.

The remark above about the English progressive makes us also correctly predict that present perfect progressive in English is ambiguous between Portuguese Perfeito Composto (as exemplified above) and Perfeito Composto Progressivo:

Ele tem fumado. (He has been smoking (lately))

Ele tem estado a fumar. (He has been smoking (right now))

The second reading, common to both languages, comes out of the durativity (or interval) that progressive confers to the state of smoking, making it describe a particular interval where smoking was true (and which, because of present perfect, has to extend until ‘now’).

The iterative reading of the English present perfect progressive comes in our view from the broader meaning of the English progressive. As we shall see below, there is another aspectualizer in Portuguese that conveys such a meaning, moreover without ambiguity, therefore leading us to the conclusion that this fact must be dealt with in connection with progressive and not with perfect:

Ele tem andado a fumar. (He has been (engaging in) smoking lately)

Before we leave present perfect, one of the most famous translation relations involving this tense should be mentioned: the adverb “just” in English is rendered in Portuguese by a totally different syntactical device, the aspectualizer *Acabar*, which on top of this is still ambiguous between two readings that in English would seem unrelated:

Ele acabou de pôr a mesa. (He finished laying the table) (He has just laid the table)

We handle this by noting that the two meanings of *Acabar* denote two points, at the first the argument is true, at the second it is no longer, and *Acabar* is true between those two points. The difference is that the argument still holds in that interval for the case of finish and not for just.

About another shade of meaning that both *acabar* and **finish** carry, namely, whether they do refer to an interval (the last part of the accomplishment of laying the table¹⁴) or to a definite moment, this we ascribe to being a property of times in general, and which the context may indicate. If not, both interpretations are equally valid, and, actually, should not even be viewed as two.

1.4.4 Past perfect and Mais Que Perfeito

This is a tense that, in the two languages, plays the role of the past of the past. While in English it is claimed to be ambiguous between being the past of past simple or the past of present perfect, since the tasks of these two tenses are taken in Portuguese by Perfeito alone, its behavior does not bring any puzzles, there.

It should be noted, however, that the use of Mais Que Perfeito is much more restricted than its English counterpart. In fact, it is not used as the past of Imperfeito nor of Perfeito Composto (which both refer to unbounded intervals). Compare thus

Ele era marinheiro. (IMPERF) (He was a sailor - property)

Soube que ele era marinheiro. (PERF, IMPERF) (I learned that he was a sailor)

Ele foi marinheiro. (PERF) (He was a sailor - but had stopped)

Soube que ele tinha sido marinheiro. (PERF, MQP) (I learned that he had been a sailor - but had stopped)

Ele tem corrido. (PC) (He has been running)

Ele disse que tem corrido. (PERF,PC) (He said he had been running lately)

The English past perfect is also ambiguous between the past of the past simple and the past of the past perfect, in a way that Mais Que Perfeito is not:

We learned that Jesus had visited Jerusalem when he started preaching.

Soubemos que Jesus visitou J. quando começou a pregar. (at the same time)

Soubemos que Jesus já tinha visitado J. quando começou a pregar. (before)

Also, in connection with *antes* (before)-clauses, Mais Que Perfeito cannot render the most natural interpretation of its English counterpart, namely, that of a prior time before the time of the before-clause, whose past perfect came from the sequence of tense laws of English.

I learned that Jesus had been a carpenter before he started preaching.

Soube que Jesus foi carpinteiro antes de começar a pregar. (PERF)

and NOT

Soube que Jesus tinha sido carpinteiro antes de começar a pregar.

In fact, this last sentence makes (implicit) reference to a time between starting preaching and being a carpenter.

Finally, in that-clauses, Perfeito and Mais Que Perfeito also express an opposition between factual and anaphoric pasts, as happens in English, too.

Soubemos que Jesus visitou Jerusalém. (We learned that Jesus visited J.)

Soubemos que Jesus tinha visitado Jerusalém. (We learned that Jesus had visited J.)

We propose a conventional analysis of past perfect, with two indices, both located before NOW. (Given that Perfeito can have that interpretation too, it is understandable its correspondence in sequence of tense contexts.) For Mais Que Perfeito, we give the same analysis, and account for the discrepancies by noting that *antes*-clauses do not have tense (and thus cannot establish a located (tensed) time point of their own) and that the Perfeito in *quando*-clauses has different characteristics from the past simple (two indices instead of one).

1.4.5 Progressive forms

As was discussed in Section 1.4.3, progressive seems to share some meaning in the two languages. Iterativity of events, however, though undoubtedly one of the English meanings, seems to be conveyed by another aspectualizer, *andar* (in addition to Perfeito Composto, when iterativity is related to 'now').

Ele anda a encontrar muitas moedas no chão. (He keeps finding coins on the ground)

Ele anda a lembrar-se dela frequentemente. (She is often coming to his mind)

Ele anda a construir casas. (He is building several houses)

Ele anda a correr por aí. (He is running around)

Ele anda a construir uma casa. (He is busy building a house)

The way we chose to account for this was to ascribe an interval meaning to both progressives, but the English one being like an interval state in that it also makes reference to the several individual points that build the interval, while for that in Portuguese *andar* is required.

Now we proceed by pointing other features that are commonly referred in the literature on English, and that may or may not hold for Portuguese. The first point that deserves mention is that there is no futurate progressive in Portuguese, even though progressive can convey, as in English, the intention of concluding something that is already in progress, or achieving a particular goal (second example):

He is giving a course on semantics next spring. *Ele vai dar um curso de semântica no próximo semestre.*

He is running for two hours. *Ele está a correr por duas horas.*

Another important point is the puzzling use of progressive with achievements, yielding an “about to” meaning in both languages (more clearly still in Portuguese, because the sentences are not ambiguous towards a futurate reading):

Ele estava (prestes) a morrer. (He was dying)

Ele estava (prestes) a despedi-la. (He was about to fire her)

Eu estou (prestes) a sair. (I’m leaving (about to leave))

Ele estava (prestes) a dar o comando ao irmão. (He was about to give control to his brother)

Still, the Portuguese progressive does not represent a proper subset of the English one. In fact, we were able to detect at least one context where the former were used while the latter was forbidden: acquisitions.

Estás a perceber? (Do you realize this?)

Estou a reconhecê-la. (I recognize you)

Estava a lembrar-me do António. (I remembered António)

Estou a ver. (I see / understand)

Não me está a conhecer? (Don’t you know me?)

This indicates that there must be an explicit difference in meaning between the two forms. Incidentally, *Andar* too is forbidden with acquisitions in Portuguese.

Finally, in discourse, Imperfeito and the past progressive are often intertranslatable (as was pointed out for French by Hoepelmann & Rohrer (1980) and Kamp (1981)):

While he was reading the newspaper I was watching TV. *Enquanto ele lia o jornal eu via televisão.*

When he was working in the garden the thieves stole his money. *Quando trabalhava no jardim, os ladrões roubaram-lhe o dinheiro.*

(Portuguese progressive, though also possible here, gives a little too much emphasis to a particular point in time (as if to the English progressive the adverb “precisely” were added). Also, it would moreover omit the habitual reading that it seems that the first sentence (with the two progressives) also has.)

It is important to note, first of all, that some part of the similarity of meaning comes from the connectives themselves, therefore making the role of tense not so important. Anyway, the way it seems possible to account for this phenomenon is by pointing out that both tenses encompass an interval in their definition.

1.4.6 Perfeito progressivo

An interesting feature of Portuguese, already mentioned above in connection with the Perfeito / Imperfeito distinction is that these two tenses in connection with the progressive bring out a distinction that is not clear in English, namely, whether the interval described by the progressive is over or not (cf. Mittwoch (1988) for a detailed discussion of this problem):

Ela estava a nadar. (She was (in the process of) swimming)

Ela esteve a nadar. (She was swimming (for a while, but is no longer))

For activities (or interval states) what was described holds clearly no longer. If, on the other hand, Perfeito Progressivo is applied to an accomplishment, people are led to infer that it was left unfinished (otherwise Perfeito would have been used). While this is often the case, it is not required that the accomplishment as a whole had not been finished some later time:

Ele há dois anos esteve a construir uma casa na Suíça, e foi lá que a conheceu.
(Two years ago he was building a house in Switzerland, and it was there that they met)

Ele esteve a construir uma casa no Natal, não sei se a acabou. (He was engaged in the building of a house last Christmas, I don't know if he finished it)

In the case of achievements, for which the progressive means “on the verge of”, then the choice of Perfeito Progressivo strongly implies that the result was not obtained, since the speaker is already after a time point where the progressive is no longer true (and not making a prediction).

The meaning of Perfeito progressivo can thus be described purely compositionally by adding the interval meaning of Progressivo to the statement that whatever was described was not true some time later.

1.4.7 Aspectualizers

Even though progressive is by far the most studied and complex, there are several aspectual properties of other aspectualizers that deserve mention. We'll present here a subset of Portuguese aspectualizers and their translations into English, to motivate the formal analysis that will be presented later. *Estar*, *Acabar* and *Andar* have already been mentioned.

Ela começou a correr às quatro. (She started running at four)

Ele continuou a comer. (He resumed / kept eating)

Ele continuava a comer. (He kept eating)

Ele voltou a fumar. (He went back to smoking)

Ele tornou a cair. (He fell down again).

It is interesting to note that *Continuar* passes the test for acquisitions, namely, it either means the resuming of a process shortly after its interruption or the simple going on of that process.

In what follows, we will propose to give a separate formalization of the aspectualizer verb and of the preposition plus infinitive complex that it requires. To motivate it, let us note that, in Portuguese, A+infinitivo occurs as a separate constituent in sentences like

A atravessar a rua, já varias pessoas foram feridas. (Crossing the street, many people have already been injured)

Ele vai para a escola a cantar. (he walks to the school singing)

It is important to indicate that this is not (at least totally) equivalent to the English gerund, since there is a Portuguese gerund which translates many English equivalents:

Sendo professor, tens direito a bilhetes grátis. (Being a teacher, you are entitled to free tickets)

Retorquiu, rindo: (He answered, laughing)

More rarely, we can also spot DE+infinitivo stand-alone occurrences:

De tanto roubar foi condenado a trinta anos de prisão. (Having stolen so much he was convicted to thirty years in prison)

De estar na praia tanto tempo, ela ficou gravemente queimada. (Having been so long in the beach she became heavily burned)

Tinha as pernas tortas de montar a cavalo em criança. (He had bent legs from horse riding in his childhood)

Finally, another argument is the fact that in Portuguese temporal adverbials can freely occur between the aspectualizers and A or DE+infinitivo forms, and thus semantics agrees with syntax:

Acabei ontem à noite de arrumar o sótão. (I finished last night cleaning my cellar)

1.4.8 Temporal prepositions

For

Moens (1987:52) claims that **for** in English has two unrelated meanings, namely by pointing out different translations into French and German.

We start by stating that those two meanings differ in Portuguese only when the duration talked about includes the present moment, otherwise, **for** allows the two prepositions that are supposed to translate its two meanings, namely *durante* and *por*:

He left for ten minutes but he is back again. *Saiu durante/por dez minutos mas já está de volta.*

He left for ten minutes. He'll be back soon. *Saiu por dez minutos. Deve estar a voltar.*¹⁵

It seems that *durante* views the situation from its end, while *por* views it from its start. Thus, something can be asserted after the start of a situation with *por*, but only after the end of that interval with *durante*. The simple past index can only match the beginning of the event, so English does not require this distinction, while *Perfeito*, requiring that something is not true after having been true cannot accept as a valid argument something that has not yet stopped to be true, and thus *durante* cannot be used if the period was not properly terminated.

A similar situation to that with **for** can be found looking into the future, namely in connection with English **in**¹⁶.

Durante

Actually, it is interesting to notice that *durante* translates **during** as well:

Ele trabalhou durante o Verão. (He worked during summer)

Ele trabalhou durante dois anos. (He has worked for two years)

Ele morreu durante a noite. (He died during the night)

It is clear that only after the period described by **during** can the sentence be evaluated. On the other hand, **during** describes an interval and not two time indices. This does not seem to matter for Portuguese in the definition of *durante*. For this reason, we will postulate two partially different submeanings.

Até

Até renders both **until** and some cases of **by**.

He worked until five. *Ele trabalhou até às cinco.*

He bought everything by five. *Ele comprou tudo até às cinco.*

He had bought the shoes by five. *Ele tinha comprado os sapatos às cinco.*

By seven he was already working. *Às sete ele já estava a trabalhar.*

He arrived at seven. *Ele chegou às sete.*

Both **until** and **by** indicate that something occurred before their argument, continuously for **until**, discretely for **by**. We need therefore two indices for **by**, the first to match the actual happening, and the second to contain its argument.

Até seems to be not particular about continuity or discreteness, provided there is something that held and stopped to hold. So it matches **until** in meaning, and also **by** when what happens has no implication of continuing. If it continues, then *até* can no longer be used as a translation of **by**.

Then *a*, indicating simply a (pointwise) temporal location, is the right choice, corresponding to the English **at**.

From to

Finally, the Portuguese equivalent to **from-to** is allowed to pick a whole accomplishment (signalling its beginning and end) contrarily to English:

Ele construiu a casa de Agosto a Dezembro. (*He built the house from August to December) (It took him the time from August to December to build the house)

Ele esteve a construir a casa de Agosto a Dezembro. (He was building the house from August to December)

Ele correu das quatro às cinco. (He ran from four to five)

It is clear that **from-to** and *de-a* have to be given a joint meaning, since they cannot occur alone (with the kind of arguments they have here) neither in English nor in Portuguese. Moreover, in neither of the two languages they should be confused with **between-and** (*entre-e*) which simply specify bounds.

In English, it seems it can only delimitate an activity and not mention its accomplishment. It is interesting to see that there are several prepositions in English that make this distinction, which goes unnoticed in Portuguese (see the above during/for, until/by, by/at). It seems that the explanation is that *Perfeito*, contrarily to past simple, already gives the information that is necessary, namely, that whatever is being described is no longer true.

1.4.9 Temporal connectives

Moens & Steedman (1988) argue extensively for a not primarily temporal meaning of **when**, proposing a contingency sense instead. However, similar facts have been acknowledged for several connectives (see for instance McCawley (1981) about **and** (p.80), **if** (p.220-2) and **since** (p.214)), explained on pragmatic terms. Moreover, the argument of non-transitivity, which plays a central part in their argument, applies equally well to every non-temporal wh-clauses. Therefore, we will maintain that temporal conjunctions have a primarily temporal meaning (as Heinämäki (1974:34-5) does). As a simple argument, let us draw the attention to their analogous behavior to other more uncontroversial temporal devices, already noted in Dowty (1979:343):

She ran when he left. She ran at 4.

When he left, she ran. At 4, she ran.

While after the verb they are ambiguous between an inchoative reading and a durative one, before the verb they seem to only have the first interpretation.

Quando

We start by describing the behavior of *Quando*-clauses (*Quando* translates **when**) specifying their tense. First of all, and contrarily to its behavior in main clauses (where it requires a sentence quantifier if the aspectual class is an achievement), *Imperfeito* is totally correct in a *Quando* clause, irrespective of the aspectual class of its main verb:

Ele dava o livro ao irmão quando o encontrei. (He was giving the book to his brother when I met him)

Ele dava o livro ao irmão quando o encontrava. (He would give the book to his brother when he met him)

Ele lembrava-se do irmão quando o encontrei. (He remembered (property) his brother when I met him)

This fact falls out trivially if we assume that Quando-clauses presuppose an interval, which is then described/tagged by the Quando-clause. Thus, the interval of Imperfeito can peacefully match that one, and no quantifier is required to make a valid assertion out of an interval.

If the main clause is in Imperfeito, it always establishes a property between the two times referenced in the two clauses (sort of intensional universal quantification), as was illustrated above (check the examples on Section 1.4.1 too). If it is in Perfeito, it furnishes a particular time to the whole sentence if the verb aspectual class is achievement-like, while, if it is state-like, it simply describes an interval where that property holds.

On the other hand, Perfeito in Quando-clauses always yields a definite time point, and thus selects unambiguously the achievement part of a complex aspectual class.

Quando ela construiu a casa, escolheu o melhor arquiteto do país. (When she built the house, she chose the best architect of the whole country)

Quando ela se lembrou dele, já era tarde. (When she remembered him, it was already too late)

The first example, with an accomplishment, implies that the house was really built, even though the choice of the architect was prior to that building.

So, and as was already noted in connection with Imperfeito in discourse, much of the import of a Quando clause depends on the meaning of the Quando connective, albeit in connection with the tense. We won't be discussing the differences between discourse behaviour in the two languages, but will present our formalization of the meaning of Quando/**when** and Enquanto/**while** to make this point clear. (We will take the meanings of the connectives to be equivalent in the two languages, which is clearly an oversimplification.)

1.4.10 Different assignment of lexical aspectual class

Just to finish, and so that it is not implicitly denied the importance of full lexical words (as opposed to grammatical ones), we will point out that apart from individual cases (as mentioned in the introduction) of assignment of a different aspectual class to intertranslatable words, there are also full semantic subclasses that are differently treated by the two languages.

The first case is easily illustrated with the pair “meet”-“conhecer”, achievement in English and acquisition in Portuguese:

Conheci-o em Angola. (I met him in Angola.)

Já se conhecem? (Have you met before?)

Note that “conhecer” is an acquisition since it is used both to denote the getting to know, and the resulting state (as the use of the present tense in the second sentence demonstrates). On the other hand, “meet” is an achievement, since it is used in the present perfect, and can't be used in the present.

The second case we will mention here is a subclass of acquisitions: verbs that indicate position, and that have a particle in English to denote the achievement proper, while generally requiring the progressive to describe the resulting position (to be distinguished from the action of start of that position): “sit”, “stand”, “lie”, “stay”, “hide”. We consider them acquisitions in English, but they are a little special because their result state generally appears in the progressive, and because of the use of the adverbial particles (“sit down”, “stand up”, etc). Still, and mainly for fixed positions, the simple form is also used:

The statue stands in the square.

He didn't do anything, he just sat there.

In Portuguese, the state resulting from acquiring a new position is spelled out by a different device, therefore, those verbs do not belong to the acquisition class. On the contrary, the resulting state is unambiguously expressed by a periphrastic form such as “to be seated”:

Ele estava deitado na cama / sentado num banco. (He was lying in bed / sitting on a bench)

Ele estava escondido nos arbustos. (He was hiding/hidden in the bushes)

Ele estava montado num cavalo de pau. (He was riding a wooden horse)

This is just an example of the wide diversity that appears to one when trying to compare and handle, for instance for translation, two natural languages.

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Notes

1. If we quantify indefinitely the accomplishment, we get an activity, but still made of individual accomplishments

He builds a house very often.

He builds houses.

He never builds houses.

This is parallel to NP quantification: whatever you do to the word "flock" it does not lose its initially plural meaning (see "I have one/two/many flock(s)").

2. We start by using the terminology of Vendler (1967), but we shall define their meanings formally in the next section. Examples of Portuguese/English elements of those classes are also available in the following notes.
3. pertencer/belong, saber/know, possuir/own, ser/be, estar/be, existir/exist, gostar/like, parecer-se/resemble.
4. dançar/dance, trabalhar/work, crescer/grow, gastar/spend, ler/read, sorrir/smile, escutar/listen.
5. sair/leave, dar/give, encontrar/find, morrer/die, ganhar/win, acordar/wake up, esquecer/forget, sentar-se (sit down).
6. escrever um livro/write a book, pôr a mesa/lay the table, construir uma casa/build a house, desenhar um círculo/draw a circle, levantar o braço/raise one's arm, comer/eat.
7. ver/see, lembrar-se/remember, reconhecer/recognize, saber de/know about, perceber/realize, conhecer (meet-know), /sit, /stand.
8. viver/live, morar/live, usar/use, sofrer/suffer, doer/hurt(intr).
9. Dowty (1979:66-67) claims that in English all physical perception verbs, cognitive verbs with prepositional objects and psych-movement verbs are both states and achievements. For Finnish, Heinämäki (1984:165) reads

Many, if not all cognitive verbs and perception verbs, can both have the achievement interpretation and denote the state-of-affairs that results from the achievement.

10. This is clearly the case for verbs of movement or verbs referring directly to perception (hear, smell, watch). The function of progressive is intimately connected to an interval (at which the state holds), resulting thus unnecessary (and thus deviant) to use it for states that do not require more than one instant to be perceived. In the examples below, the starred ones are connected to sight, which is instantaneous:

* The traffic light is being red.
The traffic light is beeping.
* She is being beautiful.
She is being slow.

It has often been noted (Verkuyl (1989:45-6), Dowty (1979:112)) that tests for activity are more often than not agentivity tests, thus not connected with temporal aspect. It is precisely where agentivity criteria (Dowty (1979:164-5)) break down that the role of the duration of perception shows more clearly:

The stone is rolling down.
The leaves are turning brown.
The machine is making noise.

In fact, Verkuyl (1989:65) remarks that, although Dowty (1979) extends Vendler's system by distinguishing agentive from non-agentive classes, "it is not clear how non-agentive Activities and agentive States should be represented".

11. Some people seem to have this opinion: Heinämäki (1974:9) states that "the difference between statives and activities does not concern their temporal properties".
12. Simple properties (with no relation whatsoever with time) seem to be actually most of the time expressed (at least in the languages we considered) by adjectival phrases, thus falling outside the scope of the T&A system. However, those constructions also receive tense in the copulative verb with which they occur, there being moreover proper verbal states other than copular verbs, as was exemplified in a previous note.
13. It should be noted that it is not an easy matter to distinguish between these two tenses for achievement-like verbs, as the full discussion in McCoard (1978) illustrates (see for instance p.59).
14. Actually, this last part of the initial accomplishment is still an accomplishment, as can easily be checked by comparing "he was finishing laying the table when the telephone rang" with "he finished laying the table at four sharp".
15. It should be noted that the verb *sair* is special in that it accepts the two interpretations (stative and achievement) in Portuguese, and that was why it was chosen as example. However, what has been said about the opposition *durante/por* is general.
16. Depending on their overlap with present or not, sentences with "in"-adverbials get translated into *em* or *dentro de*.

The train arrives in ten minutes (from now). *O comboio chega dentro de dez minutos.*

The train arrives in ten minutes to Benfica. *O comboio chega em dez minutos a Benfica.*

We'll not dwell on the meaning of simple present here, though.

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