

Telling Time

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*Tensed and Temporal Meaning
between Philosophy
and Linguistics*

Edited by

Claudio Majolino and Katia Paykin

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PREFACE

TELLING TIME

CLAUDIO MAJOLINO AND KATIA PAYKIN

1. The present volume takes its origin from an interdisciplinary seminar “Dire le temps” (‘Telling time’) organized at University of Lille 3 (France) in 2010. The aim of the seminar was to create common ground for exchanges among specialists of two separate domains, philosophy and linguistics, and to establish a real dialogue on one of the most essential questions of contemporary philosophy and linguistics, that of the articulation between language and time. Basic linguistic concepts linked to time, such as boundary, temporal ordering or interval, have sprouted and matured in philosophy, but linguists, in their turn, can provide philosophers with careful linguistic analyses and discoveries about how language functions technically. Present-day research, however, in its tendency to become more and more specialized often neglects the discoveries outside its own disciplinary boundaries. This book continues the effort of bridging the two fields in the search of a deeper understanding of the expression of time that goes beyond a purely linguistic or solely philosophical vision of the question.

Any joint work requires a common vocabulary of terms and comparable methods of investigation. In what follows, we have tried to present some fundamental concepts used when talking and thinking about time as well as a selection of main works devoted to the question. This should arm our readers for an understanding of the texts in this volume and provide them with a list of titles for further study.

* * *

2. The French term *temps* subsumes two notions, that of *time* and that of *tense*. Indeed, the expression of time is inseparable from the tense marking on the verb, one of its grammatical expressions in a given

language, at least for European languages.¹ From a conventional linguistic perspective, temporality can be encoded through various means, usually known under the terms of *tense*, *aspect* and *Aktionsart*, although it has been argued that a “discourse function” should be integrated into the picture as a fourth notional category (*cf.* Weinrich 1964). Undertaking the analysis not only on the level of utterances but also on the level of discourse introduces a distinction between absolute and relative temporality, which can be compared to the deictic/anaphoric distinction. According to Vetters (1993), inspired by Comrie (1976) and Chung & Timberlake (1985), three categories of temporal expressions should be distinguished: (i) absolute temporality, where the denoted event expresses its relation with the moment of utterance alone, without taking into account the time of the event in the context, such as in *L said (yesterday) that P arrived*; (ii) relative temporality, where the denoted event expresses solely its relation with the event in the context, without considering the utterance time, such as in Russian, which does not have a sequence-of-tenses rule (*cf.* *L sprosila, počemu P plačet* ‘L asked why P is crying’); and (iii) absolute-relative temporality, where the denoted event expresses both its relation with the time of another event in the context and its relation with the utterance time, such as in *L said that P had finished his essay*.

Tense itself has been defined by Comrie (1976) as “the grammaticalization of location in time” and, more recently, by Hamm & Bott (2014) as “the grammatical means to indicate the time when an action or event occurs, or when a state or process holds,” while Klein (1994) considers it as “impos[ing] a temporal constraint on the time for which the assertion is made.” It is mostly through verbal tense that European languages encode speakers’ perception of time as the present following the past and preceding the future. Among the grammatical means of expressing tense, we find affixes, particles, various auxiliaries and periphrases. The foundation for the semantics of tense was laid by Reichenbach (1947), who argued that the inherent semantic content of each tense in English, or any other language, involves the specification of the temporal arrangement of three time coordinates in relation to each other: the reference time (R), the speech time (S), and the event time (E) (*cf.* Stowell 2012). Reference time can be roughly described as “time under discussion” or “reference point,” speech time as the time of the utterance and event time as the time

¹ Indeed, the category of tense is not universal, as there are languages that lack it or can omit it (*cf.* Dahl 2001, Smith 2008 among others).

of the event or situation.² Despite Bergson's (1889) famous critique against the "spatialization of time," time in Reichenbach's analysis is represented graphically as a linear progression from left to right, making it possible to organize events or situations as ordered on a time axis.³

Comrie's (1976) first amendment to Reichenbach's conception of tense was to give up a timeline diagram representing time as going from left to right. Under Comrie's approach, every simple tense involves, as its inherent semantic content, a particular predicate of temporal ordering chosen among *before*, *after* and *simultaneous with* (cf. Stowell 2012). Interestingly enough, psycholinguistic research has shown that such left-to-right horizontal ordering of time relations is not even universal, as speakers of various languages choose various strategies for past-future representation. According to Núñez & Sweetser (2006), speakers of Aymara, Native American language, use a reverse system, conceiving of the future as behind them and of the past as in front of them, while Boroditsky (2011) argues that speakers of Mandarin Chinese prefer a vertical ordering.⁴

Another way of encoding temporality is through aspect, which can be roughly described as the speaker's perspective on the event considered from the inside, regardless of its articulation in terms of temporal ordering, or, following Comrie's (1976: 3) definition, as "[the] different ways of viewing the internal temporal constituency of a situation." An event can

² Tenses are indexicals insofar as they involve temporal relations with reference to the time of an uttered event. This is particularly important when it comes to Reichenbach's (1947: 288) analysis of the past perfect: "From a sentence like 'Peter had gone' we see that the time order expressed in the tense does not concern one event, but two events, whose positions are determined with respect to the point of speech. We shall call these time points the point of the event and the point of reference. In the example, the point of the event is the time when Peter went; the point of reference is a time between this point and the point of speech."

³ A detailed description of the extensive literature on the subject of tense goes beyond the scope of this succinct presentation. Two main paths have been generally followed in the analysis of tense: a semantic approach and a syntactic one. In the former, we can distinguish Comrie's (1976, 1985) theory of tenses as predicates of temporal ordering and referential theories of tense, proposed by Partee (1973), and enriched by Enç (1981, 1987), Abusch (1997) and others. The syntactic analysis of tense stems from Chomsky's (1957) work on tense and aspect morphemes. For a concise comprehensive overall view on the subject, cf. Binnink (2012).

⁴ One could argue, however, that these various ways of ordering time relations are not necessarily incompatible with a time line. The crucial property of the time line is in fact its linear order, the left/right or top/bottom correspondence for past/future being merely a convention. We owe this remark to Christopher Piñón (p.c.).

thus be viewed as completed, on-going, or evolving in some other way. The term aspect refers primarily to grammatical aspect, while the term Aktionsart covers what can be labeled as lexical aspect, the distinction between the two being, however, sometimes blurred (*cf.* Verkuyl 1972). According to Guéron & Lecarme (2004: 9), “lexical aspect or aktionsart describes the temporal structure internal to an event while syntactic aspect relates events to time.”

The original notion of grammatical aspect stems from Slavic linguistics, where the opposition between perfective and imperfective is realized on a morphological level and affects the entire verb system. The standard characterization of the distinction perfective/imperfective is to be found in Comrie (1976: 16): “perfectivity indicates the view of the situation as a single whole, without distinction of the various separate phases that make up the situation, while the imperfective pays essential attention to the internal structure of the situation.” What English encodes through a simple verb *read* gets at least two distinct forms in Russian, corresponding to the imperfective *čitat’*, roughly translatable by ‘read without considering the end point of the process’ and the perfective *pročitat’*, equivalent to ‘read to the end, therefore attaining the end point of the process’, both being subject to tense. As pointed out in Spencer (1991), there are languages where tense and aspect cannot be unambiguously distinguished. This notion of aspect, however, has been carried over to languages like English or French where a separate verb form gets necessarily a double marking, that of tense and that of aspect.

Finally, each verb has a lexical meaning with its own temporal characteristics, among which we find stativity, inchoativity, *etc.* Based on these characteristics, verbs fall into different classes denoting states, activities and others. One of the first⁵ systematic descriptions of these classes belongs to Vendler (1957) who distinguished among states (*e.g.*, *know*), activities (*e.g.*, *run*), achievements (*e.g.*, *appear*) and accomplishments (*e.g.*, *melt*), the first two defined by the absence of an end point, the former being static and the latter dynamic, and the other two defined by the presence of an end point, the former being punctual and the latter non-punctual. Since Vendler’s seminal work, the classification has been regularly remodeled with more and more emphasis on aspect.⁶

⁵ Already Jespersen (1924: 273) divided verbs into conclusive and non-conclusive.

⁶ Kenny (1963) proposes a three-fold distinction into states-activities-performances, which echoes Aristotle’s distinction found in *Metaphysics* between *kineseis* (performances) and *energeiai* (activities or states). Mourelatos (1978) divides situations into states, on the one hand, and actions or occurrences subsuming events and processes, on the other hand. Processes correspond to

The term *Aktionsart* serves as a general term for these verb classes, making reference to lexical content of the verb, which explains its quasi-synonymy with the term *lexical aspect*. According to Klein (1994), it was originally introduced by Agrell (1908) and referred to “secondary modifications of basic verb meanings by means of affixes.” It was Streitberg (1889), however, who coined the term, although he used it in a quite different sense, namely in reference to general aspect.

3. Tense and aspect have been the subject of predilection for linguists working on temporality, as it is readily apparent in Co Vet’s article “The coding of temporal meaning in natural language.” Having defined *Aktionsart* as a semantic property of sentences, Vet attributes two possible values to it: durative and terminative, also distinguishing two subclasses of eventualities: transitional and non-transitional. He keeps Vendler’s (1957) terms for the four-fold partition but provides an original description of states, activities, accomplishments and achievements, following Vet (1980, 1984). Non-transitional eventualities, states and activities, do not contain a change of state and are not followed by a resulting state, while transitional eventualities do contain a transition between two states. Moreover, accomplishments possess an activity preceding the transition, while achievements are envisaged as momentaneous, consisting of transition alone.

Reichenbach’s (1947) theory anchors the theoretical framework elaborated in the paper, under which tense is conceived as a set of features constituting the interface between its morphological form and its interpretation in terms of a relation between speech point, reference point and the eventuality referred to by the sentence. Whenever the category of tense is present in a language, the speech time constitutes the central point of the system, in other words making it necessarily egocentric. The reference point, introduced by Reichenbach, and defined by Vet as “the perspective from which the eventuality is presented,” can occupy three positions with respect to the speech time: anterior, simultaneous and posterior, just like an eventuality with respect to the reference point. According to the author, Reichenbach’s system thus projects at least nine different tenses, conceiving the past and the future as being parallel. On the basis of French, Vet argues that there are only two reference point

Vendler’s activities, while actions are divided further into developments, roughly corresponding to Vendler’s accomplishments, and punctual occurrences, roughly corresponding to Vendler’s achievements. *Cf.* also Langacker (1987), Recanati & Recanati (1999), among many others. One should also mention that Vendler (1967: 109) rejects the pertinence of Ryle’s (1949: 118) reference to Aristotle’s *Metaphysics* 1048b.

positions (past and present) and not three. As a result, he postulates a system of six tenses, considering all other verb forms as aspectual variants of these basic six.

In order to generate all verb forms of French, known in grammars as tense forms, Vet proposes to describe the syntactic form of his basic tenses by a set of two features: present and past, on the one hand, and anterior, simultaneous and posterior, on the other. Tenses with the feature *present* are considered deictic, while those with the feature *past* are called anaphoric, requiring the identification of the reference point with a temporal antecedent in the context. Vet also integrates into the system resultative and prospective aspects. He thus reinforces the distinction, present in Reichenbach but often unclear in grammars, between past and anteriority, and denies the future the same status as that of the past.

4. Up to now, our attention has been especially drawn to aspect, both grammatical and lexical, and tense, which together constitute a clear focus of the current linguistic research in the time domain. Yet, temporality can also be expressed through a multitude of adverbials, often left neglected or at least understudied in their interaction with the above-mentioned grammatical categories. The paper “An intersective account of localizing temporal expressions” by Gerhard Schaden tackles precisely this frequently overlooked subject. The author examines the semantics of temporal adverbials in the framework of Temporal Generalized Quantifiers and proposes a unified analysis of these adverbials based on the intersection of their content with information coming from tense.

Localizing temporal expressions, as opposed to measuring ones, situate an eventuality in its relation to another moment or interval in time and do not affect the duration of the eventuality or its intrinsic properties. Schaden distinguishes three dichotomies in the domain of localizing temporal adverbials: punctual vs. durative, deictic vs. anaphoric and quantified vs. non-quantified. The article is centered around quantified vs. non-quantified localizing adverbials with a particular emphasis on universally quantified expressions, as they provide the best testing environment for the interaction between localizing temporal expressions and the tense-aspect system.

Schaden takes as his premise Klein’s (1994) definitions of tense and aspect, considering the former to be a relation between the moment of speech and the interval of assertion and the latter as a relation between the interval of assertion and the temporal trace of the eventuality. Given the assumption that tense is “the grammatical expression of temporal localization” (*cf.* Comrie 1985) and therefore works rather similarly to localizing adverbials, and that an eventuality is located with respect to

some intermediate point or interval and not with respect to the moment of speech, localizing temporal adverbials should interact directly with the interval of assertion. It follows that the interval of assertion has to restrict the domain of quantified temporal expressions, or, in other words, “the localization of the entities denoted by the temporal quantifier [should be] restricted by tense.” However, sentences like *It rained this year*, where temporal adverbial contains the moment of speech and the tense-form is not present, cannot be felicitous under the above-mentioned analysis. Schaden proposes to solve the problem in terms of intersection between the interval of assertion and the quantified element.

The problem also holds for universally quantified versions of these sentences, such as *Every Tuesday this month, it rained*. On the basis of Partee’s (1973, 1984) and Kratzer’s (1998) analyses, according to which tense in certain respects shows similar behavior to that of pronouns, Schaden argues that the solution can be a semantic one making use of the anaphoric nature of tense. Just like the pronoun domain uses a mechanism of bridging (for definite determiners, for example, in the case of associated anaphora: *A car passed by, the tires were covered in dirt*), tense would resort to “partial binding.”

5. Finally, Danièle Van de Velde’s contribution goes beyond the pure linguistic analysis of grammatical (tense/aspect) or lexical (temporal adverbials) categories of encoding temporality. “The role of temporal proper names in our reference system” offers a general linguistic-philosophical discussion on the necessity of proper names in general and proper names of time in particular. According to the author, the only way to guarantee the stability of reference and to ensure the existence of a common objective world is through proper names that should be viewed as a projection of the deictic system resting on three pillars: person, place and time. Therefore, next to personal and spatial proper names, a language should contain temporal proper names.

On the basis of Kripke’s (1972, 1980) theory, under which a proper noun is a pure referential device as are deictic terms, endowed like the latter with the property of “sui-referentiality” in Benveniste’s terms, Van de Velde argues that proper names, though lacking the universality of personal deictics like *I*, do possess a kind of universality as they refer to one and the same particular everywhere and forever.

Given the originality of posing the existence of temporal proper names, the author provides the reader with syntactic arguments proving their legitimacy. Indeed, proper names of time, even if limited to years and months, enter into denominative structures, considered typical for their identification as proper nouns, lack determiners and are incompatible with

restrictive adjuncts. Unlike Van Langendonck (2007), who calls time proper names “non-prototypical” due to their recursiveness, Van de Velde argues that temporal proper names are true proper nouns. Names of years, being “names of non-recursive but purely sequential temporal entities” are true prototypical proper nouns, while nouns like *June* can be compared to first names, like *Peter*, whose referent is unique exclusively in a limited discourse universe and which require additional precision to denote objectively one particular person.

Temporal proper names do, however, show certain particularities in the general system of proper nouns. According to Van de Velde, the constitution of objective time through the use of proper nouns implies reference to events, just like the existence of an objective space requires reference to things. However, spatial proper nouns name fixed things in a certain spatial relation in our common space, the earth, not places themselves, while temporal proper nouns name directly periods or moments of time, related to events, but not events themselves. Temporal proper nouns possess yet another specificity: they comprise two distinct groups. One group includes names of recurring periods, such as the names of days, months or seasons, whose limits are cosmic events. The other group contains an infinite sequence of numbered years starting with year zero, determined conventionally.

* * *

6. Let us turn now to the more philosophical aspects of the problem.

As already mentioned (*cf.* §2 above), different languages may choose different strategies to encode temporality. The question arises though whether the notion of “tense” can be soundly restricted to tensed operators occurring in natural languages or should rather be extended to include metaphysical or psychological “tenses.” What seems to be uncontroversial so far is that (most, if not all) natural languages are tensed, for they clearly display syntactic or lexical elements to express in various forms tensed claims. But are we also committed to the existence of tensed thoughts, beliefs, desires, *etc.*? And to what extent one is committed to the existence of tensed facts? It is precisely on this point that semantic, psychological and ontological considerations overlap.

If tense were only a feature of language, the temporality of non-linguistic events such as thoughts or facts might simply turn out to be a projection of superficial tensed features of language on deep non-tensed events of the world (be it subjective as mental events, or objective as external or physical events). In this case, the time of the world would be

“tenseless,” *i.e.* ontologically devoid of any past, present or future determination. Whether one still wants to call such *ontological* determinations “tenses” or rather follow Mellor (1998) in preferring the McTaggart-inspired expression of “A-Times”⁷ is probably a matter of taste.⁸ What is far more important, however, is that according to “de-tensers” or “B-time theorists,” the time of the world is *not* tensed, it only *seems to be* tensed “by proxy,” *i.e.* because of the various ways in which the speakers of certain natural languages talk about it.

These ways, the argument continues, can be regimented away by means of different techniques to translate *salva significatione*—or *salva veritate*⁹—superficially tensed A-statements into structurally tenseless B-statements. For instance, as showed in Burgess (1979), tensed expressions (containing predicates belonging to time positions within the A-series) occurring on the level of the object-language disappear from the metalanguage once regimented, leaving their place to fully detensed expressions (containing only predicates belonging to time positions within the B-series). The fact of regimenting away tense out of semantics ultimately matches with the non-egocentric and non-perspectival “view from nowhere” of contemporary physics, while it seems clearly to be at odds with the phenomenological egocentric experience. As an example, Gale (1968: 73) reminds one how “Quine claimed that the tenseless mode of existential quantification fits in well with the tenseless space-time talk of Minkowskian geometry employed in relativity theory. In relativity theory, supposedly, a thing is presented as a four-dimensional worm consisting of three-dimensional cross sections strung along the fourth

⁷ As for McTaggart’s (1908) influential distinction between “A series” and “B series,” *cf.* among others, Gale (1967: chapter 1), Gale (1968: 65-85), Mellor (1998: chapter 1) and Dyke (2002).

⁸ With reference to Mellor (1981), Mellor (1998: ix) declares: “In *Real Time* I followed the custom of calling temporal locations like past, present and future ‘tenses’, while distinguishing them of course from the corresponding forms of English verbs. However, as failure to observe this distinction still vitiates much philosophy of time, I here call these locations ‘A-times’, adapting McTaggart’s now standard distinction between his *A* and *B* series [...]. For the same reason I now call my theory of time a ‘B-theory’ and my main opponents ‘A-theorists’. The terms ‘tensed’ and ‘tenseless’ I confine to their original, proper and trivial grammatical uses.”

⁹ The “new tenseless theories,” like the one advocated by Mellor (1998), do not attempt to translate, in a somehow Russell-like fashion, the *meaning* of tensed statements into tenseless terms. They rather account for the *truth conditions* of tensed statements in tenseless terms. *Cf.* Le Poidevin (1998: 5-6, 28-30) and Rea (2003: 268).

dimension of time. The physicist speaks in a tenseless mode about these spatial cross sections, saying for example, that a certain cross section is timelessly earlier or later than some other cross section. [...] The assumption here is that what is good for physics is also good for logic and metaphysics.”

In sum, detensers or B-time theorists share the same metaphysical assumption: *ontological time is ultimately tenseless*.

As for the opponent view, advocated by “tensers” or “A-time theorists,” it simply maintains that linguistic tenses both express tensed thoughts, beliefs, desires, *etc.* and denote or describe tensed facts. From a strict formal semantic point of view, this entails that tense operators appearing in the object language have to be lifted to the level of the metalanguage, not regimented away. This also implies that the truth-makers of tensed statements are nothing but full-fledged tensed facts. Finally, it vindicates the intuitions of our phenomenological and perspectival experience. In fact, according to many “tensers,” the only way to make sense of a whole host of linguistic utterances expressing human actions and attitudes toward the world is to admit the existence of both tensed states of mind and tensed facts. In a nutshell, “tensers” believe that time positions belonging to the A-series are ultimate and irreducible features of the world—or, differently phrased, that *ontological time is ultimately tensed*. And it is precisely for that reason that we have tensed thoughts and a tensed language.

7. In his contribution, Vassilis Tsompanidis suggests an interesting way to separate two positions about non-linguistic tense that only seem to be on a par, *i.e.* the acceptance of tensed beliefs and the endorsement of an A-time theory about ontological tenses.

On the one hand, following Prior’s (1959) famous “Thank goodness that’s over” argument, Tsompanidis argues in favor of tensed beliefs. More precisely, he argues that beliefs can have different “psychological profiles” in relation to the way in which they motivate the practical behaviors of cognitive agents. As an example, if I desire to be in class on time, having the tensed belief that “class begins now” rather than the tenseless belief that “class begins at 10:30” is crucial to make me act in the appropriate way (say, run to arrive on time).

This fact goes against the “de-tenser” radical view according to which tense is exclusively a feature of certain natural languages. It also seems to show that (i) there are tensed beliefs (the belief “that the class is now”); (ii) such facts are irreducible within the “network of attitudes” of human agency; and (iii) that one is committed to accept the existence of tensed facts (the worldly event “class” having the tensed property “being now”),

for, as Ludlow (2012: 60, 63-4) nicely puts it, “it is a cheat to suppose that the relevant perspectival properties can be found at the linguistic or psychological levels alone; *talk of tense in language and the mind only makes sense if the world is tensed*” (our emphasis). Finally, (iv) this also indirectly confirms the superiority of the “experience friendly” and “in tune with human experience” character of A-time theory, over the more “science-oriented” and “view from nowhere” B-time theory.

It is precisely these latter views, (iii) and (iv), that Tsompanidis feels that he has to challenge. As the author maintains, when it comes to the nature of tensed beliefs, neither B-time nor A-time theorists appear to provide any satisfactory explanation about their defining features and function within the network of human attitudes. More specifically, after introducing tensed beliefs as distinct psychological types, Tsompanidis fleshes out and then argues against two traditional treatments of tensed beliefs: (1) the A-theories expanding on Prior’s argument, assuming the existence of tensed present facts or properties and defending the view that realism about tense faithfully pictures the world as it is phenomenologically experienced; and (2) Mellor’s B-theoretic reply, starting with tenseless properties of tensed belief tokens and trying to explain away the role of tensed beliefs.

According to the author, the explanatory failure of the former shows that, pace Prior, the existence of tensed attitudes does not favor the A-theory. As a result he maintains—against (iii)—that tensed beliefs cannot be used to support metaphysical claims about the existence of tensed facts. On the other hand—against (iv)—he shows how the shortcomings of both positions reveal the existence of some important explanatory gaps in the current accounts of tensed beliefs. The paper concludes by offering a working definition of tensed beliefs and suggesting a methodology for filling such explanatory gaps in the future.

8. Another important set of questions related to the debate between tensers and detensers revolves around the ontological status and primacy of the present and the temporal status of truth.

According to Crisp (2007: 262), “eternalism” is the view that “our most inclusive quantifiers range over past, present and future entities; its opposite is presentism, the view that our most inclusive quantifiers range only over present entities.” The same idea is expressed in slightly different terms in Markosian (2014: 9): “presentism is the view that only present objects exist. More precisely, it is the view that, necessarily, it is always true that only present objects exist, [...] eternalism [...] says that objects from both the past and the future exist just as much as present objects.” Both definitions refer to what might be called *metaphysical eternalism*, i.e.

the idea that past, present and future are equally real. But there is also another way to talk about “eternalism.” *Semantic eternalism* maintains that all propositions are eternally true or false and cannot change their truth value over time. One might be tempted to take the propositional content of a sentence like *It’s raining* as having different truth values at different times. However, following Frege (1979: 135), one could also argue that “this sentence is not the complete expression of a thought at all, since it lacks a time-determination. If we add such a determination, for example ‘at noon on 1 January 1897 by central European time’, then the thought is either true, in which case it is always, or better, timelessly true, or it is false and in that case it is false without qualification.” It is precisely this second idea that has become so popular that Brogaard (2012: 5) goes as far as to claim that it has literally turned into “orthodoxy in analytic philosophy.” The opposite view, according to which there are such things as “transient truths,” is usually dubbed as temporalism. In Brogaard’s (2012: 14) terms, “temporalism is committed to the view that either some propositional attitudes have temporal propositions as their objects, or sentences that lack time adverbials (e.g., *now*, *when John was born*, *at 2 p.m. July 6, 2005*) express, relative to a context of use, temporal propositions. Propositions of this sort may vary in truth-value over time.”¹⁰

The following diagram might be helpful to sketchily summarize the distinctions introduced so far:

(a) Tensors	<i>There are tensed facts and thoughts: the world is tensed</i>
De-tensors	<i>There are no tensed facts: the world is tenseless</i>
(b) A-time theories	<i>The A-series is irreducible and prior to the B-series</i>
B-time theories	<i>The A-series is reducible to the B-series</i>
(c) Metaphysical eternalism	<i>All points in time are equally real</i>
Presentism	<i>Only present is real</i>
(d) Semantic eternalism	<i>Propositions cannot change their truth value over time</i>
Temporalism	<i>Propositions can change truth value over time</i>

¹⁰ Although temporalism claims that *some* propositions are temporal (i.e. may have different truth values at different times), it is not committed to the idea that *all* propositions are temporal. Cf. Brogaard (2012: 14).

The relations between these distinctions are sometimes easy to catch, sometimes very complex. As already pointed out, the difference between (a) and (b) is sometimes so thin that it often collapses. As for (c) and (d), semantic eternalism and metaphysical eternalism readily appear to go hand in hand, which brings Brogaard (2012: 6) to the conclusion that “if (semantic) eternalism is true, then presentism is out of the loop.” On the other hand, if one is a “de-tenser” and endorses a B-time theory, metaphysical eternalism may strike right away as a suitable option. In fact, as soon as one is ready to deny the existence of tensed facts and reduce, in one way or another, all points of the A-series (past-present-future) to points of the B-series (earlier than-simultaneous with-later than), each point in time will appear as real as any other. Things are far more complicated if one belongs to the “tensers’ camp.” “Tensers” seem to be naturally committed to *metaphysical* presentism, especially if they want to avoid the paradoxes of the “moving now” pointed out by Williams (1951: 296). Thus, an author like Prior is at the same time a *tenser* with respect to beliefs and facts, an *A-time theorist* who sticks to the irreducible priority of the A-series, a *semantic* temporalist and a *metaphysical* presentist.

Now, as Ludlow (2012: 64) has convincingly pointed out, even if “tensers typically are presentists [...] the move to presentism (if necessary) generates tremendous headaches when we attempt to do the semantics of natural language.” Some of the troubles he has in mind involve temporal anaphora, like the one occurring in Reichenbach’s (1947) analysis of complex tenses, troubles that appear to be insuperable as long as tensers are wedded with presentism (*cf.* also §2 and §3 above).

9. A way out of the trouble is to divorce tensers from presentism and avoid Williams’ paradoxes with the help of Kaplan’s monsters.¹¹

In Kaplan’s (1989) terms, “monsters” are operators that take the character of indexicals as operand. “Operators like ‘In some contexts it is true that’, which attempt to meddle with character, I call *monsters*,” he writes (1989: 511). However, not unlike monstrous creatures, Kaplan’s monstrous operators do not actually exist—or at least, he adds, not in English. In fact, since there is empirical evidence that indexicals are directly referential and “leap out” of the scope of any operator, an operator capable of controlling the character of the indexical within its scope would be, literally, a weird and daunting being. Such a monstrous operator would force a context-shift on the indexical and make it lose the direct reference within the context of its utterance (Reichenbach’s “S”). Thus if considered as monsters, tense operators like “now” would always latch onto the time

¹¹ It has to be noted that alternatives are available other than the “monstrous” one. Ludlow (2012) refers to Blevins (2006) and Blevins & Blevins (2009).

of the uttered event (Reichenbach's "E") no matter how embedded, attaching tenses to a B-series and avoiding the inconsistencies of a "moving now." Taking tense operators as "monsters" would also allow for a new marriage between *tenses* and *semantic eternalism*—of course, only if "monsters" exist.

Taking place within both the eternalism-temporalism debate on tensed sentences and the intensionalism-extensionalism debate on tense operators, Denis Perrin's contribution makes a case for a possible "monstrous" use of the English past tense. Drawing on and introducing a revised version of Evans' (1979) reading of Prior's tense logic, the author ultimately claims that there are cases in which "monsters" are not only allowed but even required. He also maintains that the operand of monstrous operators consists in propositions whose truth value does not change over time. Hence the title: "Monstrous Eternalism."

After having set the stage and introduced Kaplan's and Evans' accounts of monstrous operators, Perrin suggests to distinguish between two kinds of "monsters." The first, named "content monstrosity," roughly corresponds to Kaplan's; the second, introduced by the author, is called "mode-of-presentation monstrosity." One of Perrin's main claims is that, in order to tackle the meaning of tensed statements, one should also account for what he calls "the cognitive counterpart" or the "cognitive operations" involved in the use of tenses. According to this view, differences in cognitive operations entail differences in meaning as well as differences in the "mode of presentation" of what the uttered sentence is about. Of course, this does not entail that semantics and psychology should merge, but rather that, as the author puts it, "a cognitively concrete semantic approach" might be useful to assess rival semantic accounts of tense. From this premise Perrin draws the conclusion that thanks to this second kind of "monster" one can soundly account for an indexical use of the past tense that (1) locates an event before the utterance time of the past-tensed statement, and (2) presents the reported past event as if it were present. This kind of use Perrin calls "two-tiered indexical."

This view has a twofold outcome. On the one hand, it provides an account of the English past tense withstanding some classical temporalist objections against monstrous operators, like Kaplan's (1989) or Lewis' (1980). On the other, it also shows that a certain use (although not *all* uses) of past-tensed sentences—what the author calls deictic "episodic memory reports" (EMR)—clearly calls for a monstrous eternalist account. In keeping with the author's "cognitively concrete semantic" assumption, the article maintains that the cognitive profile of episodic memories plays a crucial role for the understanding of deictic EMR. Moreover, this

understanding fosters a specific semantic account of deictic EMR, an account according to which the past tense involved in an EMR is nothing but a context-shift operator, deictically determining the temporal reference of its operand from the past context toward which it shifts. Thus, if the author's claims are correct, natural language past tense *not only* allows for monsters, but also—at least *in some cases*—needs them.

* * *

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CHAPTER ONE

THE CODING OF TEMPORAL MEANING IN NATURAL LANGUAGE

CO VET

0. Introduction¹

Tense and aspect belong to the most intriguing topics in linguistic semantics. These two categories are so complex and fine-grained that it is hard for a non-native to acquire all the nuances and to use them without error. In this article I will focus on the way temporal notions can be expressed in French, especially by semantic and grammatical categories (tense, aspect, Aktionsart). I will pay much less attention to the lexical means that express temporal notions. Although these are certainly interesting, they are generally not regarded as pertaining to the systemic part of a language.

In my view, the system of tense and aspect in French has not yet been described in a satisfactory way, especially because of the widespread confusion between tense and aspect. The forms that express grammatical aspect (prospective and resultative), for example, are almost always regarded as tense forms, which results in an erroneous analysis of the verbal system. I will show that if a clear distinction is made between tense and grammatical aspect, the number of tenses can be reduced to six. Another point that many descriptions fail to observe is that “past” is not the same as “anteriority.” Another question that is much discussed in the literature is the following: what is exactly the aspectual value of sentences in the PR and the IP² (*cf.* for example Labeau and Larrivé 2005). My analysis will make

¹ I am grateful to Francis Cornish for his valuable comments on an earlier version of this paper.

² The names of the French tenses are, to say the least, very misleading. That is why I will use abbreviations in an attempt to neutralize their semantic content: PR

explicit de Swart's (1998) intuition that the aspect of these tenses is closely related to their temporal meaning. Although the French tense-aspect system is not entirely regular, it turns out to be far more systematic than is suggested in most grammars and other publications.

The article is organized as follows. In section 1, I will give an overview of the different categories that express temporal meaning. Section 2 offers a description of the semantic category of Aktionsart (the semantic properties of the sentence that are determined by the type of eventuality³ the sentence refers to). I will argue that the main distinction is that between transitional and non-transitional eventualities and that it gives rise to the Aktionsart features "terminative" and "durative." In section 3, I deal with the tense system of French. Unlike what is claimed in other proposals, especially by the very influential one by Reichenbach (1947), it will be argued that French and other European languages possess only six tenses. In this tense system, the main distinction is that between past and present (and not between past, present and future), which concerns the relation between reference point and speech point. The tripartition anteriority, simultaneity and posteriority is made on the level of the relation between reference point and eventuality. I will describe the syntactic form of the tenses by means of a set of two features, which are interpreted in terms of the Reichenbachian relations between speech point, reference point and the temporal position of the eventuality. Section 4 deals with phasal aspect. This is a grammatical category that has two subtypes in French (Prospective and Resultative Aspect). It will be shown that, from a syntactic point of view, these two aspects behave in a very different way. In subsection 5.1, it will be argued that imperfective and perfective aspects are side-effects of the temporal relations I postulated for the PR, IP and the PS. However, these temporal relations may change under the influence of contextual factors. I will show that together with the temporal relations, the aspectual value of the sentence changes too. Subsection 5.2 will deal with the difference between PR and IP

(présent) *chante* 'sings', PC (passé composé) *a chanté* 'has sung', PS (passé simple) *chanta* 'sang', PSC (passé surcomposé) *a eu chanté* 'has had sung', PA (passé antérieur) *eut chanté* 'had (PS) sung', FS (futur simple) *chantera* 'will sing', FP (futur périphastique) *va chanter* 'is going to sing', FA (futur antérieur) *aura chanté* 'will have sung', IP (imparfait) *chantait* 'sang', PQP (plus-que-parfait) *avait chanté* 'had (IP) sung', PQPS (plus-que-parfait surcomposé) *avait eu chanté* 'had (IP) had sung', FP (futur du passé) *chanterait* 'would sing', FPP (futur périphastique passé) *allait chanter* 'was going to sing', FAP (futur antérieur du passé) *aurait chanté* 'would have sung'.

³ I use *eventuality* as a general term that comprises states, activities, accomplishments and achievements. Sentences denote eventualities that occur or exist in the real world (or in a possible world).

on the one hand and the Present and Simple Past of English on the other and with the way this difference can be represented in my framework. In section 6, I examine some cases of deviant interpretation caused by the interaction between Aktionsart, imperfective, perfective Aspect and time and duration adverbials. Finally, I will summarize the results of my analyses in section 7.

1. Temporal categories in natural language

Languages generally possess a large variety of means to express temporal meaning. These may be classified into semantic, grammatical and lexical categories. Aktionsart is a semantic category: there is no specific form or set of forms in the sentence that expresses this kind of meaning. Tense and aspect generally belong to the grammatical categories. These are expressed by a grammatical morpheme (verb ending) or a grammaticalized auxiliary. Finally there is a number of lexical items that possess a wide variety of temporal meanings (location, duration, frequency, *etc.*). The temporal categories of French are listed in Table 1 below.

Category	Name	Example
Semantic	Aktionsart	durative, terminative
Grammatical	Tense	PR, PC, FS, <i>etc.</i>
Grammatical	Phasal aspect	prospective, resultative
Lexical	aspectual values expressed by non-grammaticalized auxiliaries	<i>commencer à</i> ‘begin to’, <i>achever de</i> ‘finish’, <i>etc.</i>
Lexical	adverbs of temporal localization	<i>hier</i> ‘yesterday’, <i>demain</i> ‘tomorrow’, <i>pendant la guerre</i> ‘during the war’, <i>etc.</i>
Lexical	calendar and clock time (temporal localization)	<i>le 1^{er} avril</i> ‘the 1st of April’, <i>en 2020</i> ‘in 2020’, <i>à huit heures</i> ‘at eight o’clock’, <i>etc.</i>
Lexical	duration adverbials	<i>pendant/en deux heures</i> ‘for/in two hours’
Lexical	frequency adverbs	<i>souvent</i> ‘often’, <i>fréquemment</i> ‘frequently’, <i>etc.</i>
Lexical	discourse adverbs	<i>puis</i> ‘then’, <i>ensuite</i> ‘next’, <i>etc.</i>
Lexical	aspectual adverbs	<i>déjà</i> ‘already’, <i>encore</i> ‘still’, <i>etc.</i>

Table 1. *Linguistic categories of temporal expressions*

Linguists pay great attention to the grammatical and semantic categories of Table 1. These belong to the systematic part of language, whereas lexical expressions are generally regarded as non-systematic, perhaps with the exception of the aspectual adverbs whose meanings constitute a more or less systematic set of oppositions.

It remains an intriguing question why languages show a division of labor between grammatical and lexical categories. There are, for example, languages that have no tenses (tagalog, Bahasa Indonesia, among others). Other languages have evidentials, an (obligatory) grammatical category that indicates the source of the information provided by the sentence (Aymara, for example). What strikes one also is that the information given by grammatical items is often redundant. Gender in French is an example; tense may also be redundant especially when the eventuality is located by a time adverbial:

- (1) Elle *est devenue* belle
'She_F has become_F pretty_F'
- (2) *Il est arrivé hier*
'He arrived (lit.: has arrived) yesterday'

In (1), it is indicated three times that we have to do with a woman. In (2), it is indicated twice that the eventuality occurred before the speech point, by the PC and by *hier* ('yesterday'). A sentence with the infinitive would have been as informative as (2):

- (3) **Il arriver hier*
'He arrive_{INF} yesterday'

The reason for this kind of redundancy is perhaps that it facilitates the processing of information by the hearer. It is certainly contrary to the principle of economy that is sometimes evoked in the literature on language change.

In languages such as French and English, tense is obligatorily present in the sentence (with a few exceptions). This is not the case in other languages. In the French Creole of the Seychelles tense may be omitted if it is indicated in the beginning of a story that the eventualities comprising it took place in the past (*cf.* Bollée 1977 for examples).

If languages have tenses, these are always egocentric. They present the eventuality referred to by the sentence as being directly or indirectly related to the *now* of the speaker. There are non-egocentric temporal categories, but these are lexical (calendar and clock time, for example).

It has often been observed that languages use spatial terms to express temporal notions. For example:

- (4) *On a toute la vie devant nous*
'We have our whole life before us'
- (5) *La grippe A est derrière nous*
'The A flu is behind us'
- (6) *J'aurai fini d'ici demain*
'I will have finished by tomorrow' (lit.: from here tomorrow)
- (7) *Nous allons commencer*
'We are going to start' (lit.: we go start_{INF})
- (8) *Laurent vient de sortir*
'Laurent just left' (lit.: Laurent comes from leave_{INF})

Devant 'before' in (4) suggests that we conceive of the future as lying before us, whereas *derrière* 'behind' in (5) suggests that we turn our back on the past. In (6), *ici* 'here' refers to the present time. In (7), the verb *aller* 'go' is used to express Prospective Aspect. In (8), *venir de* 'come from' expresses recent past.⁴ In both cases we have to do with a metaphorical use of movement verbs where the destination lies in front of the referent of the subject as in (7) and the origin behind him/her (8). These spatial metaphors, *before* 'future', *behind* 'past', *here* 'present', are perhaps widespread, but not universal as is shown by Nuñez and Sweetser (2006). They observe that for speakers of Aymara (spoken in Peru and Bolivia) it is the future that lies behind the speaker and the past in front of him/her. They explain this by pointing out that in Aymara the source of information is so important that it has to be indicated in every sentence. It does so by the grammatical category of evidentials; speakers of this language have, for example, to indicate in the sentence that they saw the eventuality (direct evidence) or did not see it themselves (indirect evidence). Since the future cannot (yet) be seen, it must lie behind the speaker. He/she may have seen past eventualities and may see present eventualities, that is why they are in front of him/her. Thus in this language it is the direction of the sight that determines whether eventualities are said to be in front of the speaker or behind him/her.

⁴ I will describe the aspectual auxiliary *aller* 'go' in section 4.1 below. This verb is entirely grammaticalized according to the definition of Hopper and Traugott (1993: 2-10): the selection restriction "animate" on the subject has disappeared and the auxiliary is used only in the PR and the IP. We will not deal here with the auxiliary *venir de* 'come from'. Its grammaticalization does not seem to be complete (it can be used, for example, in the FS).

2. The semantic category of Aktionsart

Aktionsart is a semantic property of sentences that is not expressed by some grammatical morpheme, auxiliary or by lexical means. It has two values: durative or terminative. These values are entirely determined by the type of eventuality described by what I will call the “predication,” that is the predicate (verb, adjective) applied to its arguments, without tense and (time) adverbials (Dik 1997:51-52). I distinguish two main classes of eventualities: transitional and non-transitional. There are two subclasses of transitional eventualities: accomplishments and achievements. The class of non-transitional eventualities consists of activities and states (the terms are Vendler’s 1957, the description in terms of “(non-)transitional” follows Vet 1980, 1984). If a sentence refers to a transitional eventuality, its Aktionsart is “terminative.” If it refers to a non-transitional eventuality, its Aktionsart has the value “durative.” Examples (9)-(12) illustrate the four classes:

- (9) *Patrick pela la pomme* (accomplishment) (terminative)
‘Patrick peeled the apple’
- (10) *Stéphanie arriva à Paris à 10 heures* (achievement) (terminative)
‘Stéphanie arrived in Paris at 10 o’clock’
- (11) *Chantal s’est promenée dans le parc* (activity) (durative)
‘Chantal walked in the park’
- (12) *Etienne a été malade* (state) (durative)
‘Etienne was ill’

The structures of accomplishments and achievements both contain a transition between two states. In accomplishments the transition (T) is preceded by an activity, whereas achievements do not possess such an activity, they only consist of a transition. Figures 1 and 2 represent the structures of both types of eventuality:

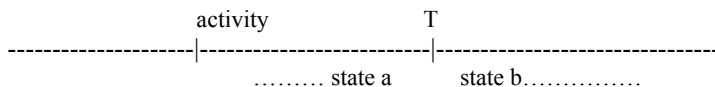


Figure 1. *The structure of an accomplishment*

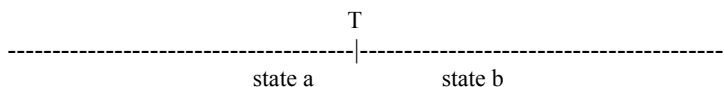


Figure 2. *The structure of an achievement*