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## RELATIVE TIME DESIGNATED WITH BEFORE/AFTER, ΠΡΙΝ/ΑΦΟΥ

1. The aim of this study<sup>1</sup> is to analyse some semantic and pragmatic issues pertaining to relative time as it is designated with «before» / «after», «πριν» / «αφού», and the relevant aspectual values. Aspect and the temporal connectives constitute the major components of relative time. Traditionally, aspect has been studied aside from the rest of the context of relative time. However, if aspect describes primarily the way grammar marks the duration or type of temporal activity, the temporal correlation of the duration or type of temporal activity of two sentences should cause no problem. Comrie (1976, 5) referring to this temporal correlation calls it a secondary consequence of the different ways the internal constituency of the situations referred to is viewed.

It can be also argued that the study of aspect within the context of relative time is made imperative by the fact that, as will be shown later on, temporal intervals are qualified by temporal connectives. The temporal correlation is achieved by the specification of reference points in the connected intervals which depend on the qualities of those intervals. In view of the fact that reference points can occupy one of the endpoints, or anyone, or all of the moments that constitute an interval, and this is true for both of the connected intervals, the specification of the reference points has to be systematic, or otherwise ambiguity may be generated.

The choice for analysis of «before» / «after», and their counterpart «πριν» / «αφού» in Greek is not irrelevant with the above points. They were chosen primarily because they form very complex combinations of time intervals, and they are very demanding in terms of the aspectual input they receive. On the other hand, on the contrastive level they appear to reveal some significant contrasts with Greek.

2. Traditionally, there has been no uniformity in treatments of aspect. In some cases the differences are purely terminological<sup>2</sup>, but as Comrie (1976, 11) observes, there are also deep-seated conceptual differences in a large

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1. This paper incorporates, in a revised form, some of the findings of my 1986 Ph.D. thesis, «Semantic analysis of the temporal sentences in English and Greek».

2. Some of the terms that have been used for aspectual categories are: «conclusive», Jespersen (1931, 92), «terminative», Fridén (1948, 39), «achievement», Ryle (1949, 149), «telic», Garey (1957, 106), «τέλειο», Μπαμπινιώτης - Κοντός, (1967, 147), Yu (1983, 113), «bounded», Allen (1966, 196), «punctual» King (1969, 183), «perfectic», Bauer (1970, 197), «perfective», Macauley (1971, 110).

number of instances. Confusion is encountered particularly in connection with the well-studied bipartite distinction of perfective/imperfective.

Vendler's analysis of aspect distinguishes in «states», «activities», «accomplishments», «achievements». These categories are currently used, not only for English but other languages as well<sup>3</sup>, and they are too well known to require elaboration. Being more analytical than the bipartite distinction of «perfective» / «imperfective», they allow for more distinct correlations of the predicated time intervals. The question is if it is analytical enough to account for complex correlations, such as those denoted by «before» / «after», without occasioning confusion. Having assumed that aspectual systems have to account for relative time situations, even as a secondary function as Comrie claims, the question we will have to answer is if this particular analysis (Vendler's) can be used for this purpose.

The models for the analysis of relative time vary in conception<sup>4</sup>, emphasis of structures involved, complexity of descriptions. For the reasons expounded earlier, we have to use a model that implements Vendler's analysis, and makes explicit reference to reference points and possible combinations of time intervals. Such a model is Heinämäki's (1974) analysis which meets these criteria, is a relatively exhaustive analysis of the temporal connectives, and can therefore be used here as a starting point. I will first give an account of this theory, and then I will try to offer an alternative solution.

The aim of Heinämäki's study is to describe formally the truth conditions of sequences «A connective B» — in our case «A before B» —, where A and B are sentences. The temporal aspectual framework of this study is that of Bennett (1972)<sup>5</sup>. A number of sentences connected with «before» and «after», with their schematic representations, are cited by Heinämäki, in which all types of Vendler's clauses show up in both clauses. A detailed presentation of these sentences would allow us to trace problems that result from the implementation of Vendler's distinctions, and offer an alternative solution.

2.1.1. The examples and analysis provided for «before» are:

(1) John noticed us before we noticed him

3. Holisky, (1981, 127-144), Kučera, (1981, 177-189).

4. Similar tense hypothesis, as in Kittredge (1969) and Yu (1983), symmetry of relations as in Anscombe (1964), relationship of speech time, reference time, event time, as in Reichenbach (1966), correlation of grammatical relations with conceptual processes, as in Miller & Johnson-Laird (1976), etc.

5. The notions of «interval», «set of all intervals», «subinterval», «initial subinterval», «final subinterval», «initial point of an interval», «final point of an interval», «endpoint of an interval», «initial bound for an interval», are in particular implemented by Bennett. Heinämäki also refers to von Wright's (1963) T-calculus to show why predicates that involve change, such as achievements cannot be durative, as follows: a.  $\sim pTp$ , b.  $pT\sim p$ , c.  $pTp$ , d.  $\sim pT\sim p$ .



2.1.2. The cited sentences which are connected with «after» and in which all of Vendler's categories show up in both clauses are the following:

(7) The armadillo noticed John after John noticed the armadillo. Both clauses in (7) are non-durative.

(7)´

	J x	
K x	J > K	

The armadillo noticed John  
John noticed the armadillo

(8) John became famous after he made the statue  
The main clause of (8) is non-durative, and the «after» clause is an accomplishment.

(8)´

	J x	
_____tr(K)	J > tr(K)	

John became famous  
John made the statue

(9) John wrote the novel after he got the inspiration  
Both clauses of (9) are described as non-durative. (9) is illustrated in (9)´:

(9)´

	I(J) _____	
K x	I(J) > K	

John wrote the novel  
John got the inspiration

If it is possible to say (9) in case the inspiration comes when he was already writing, but before he finished, then the time relation would be  $F(J) > K$ .

(10) Bill was running long after the bull stopped running  
Here the main clause is durative, and the «after» clause non-durative.

(10a)´

	_____J (=J´)	
K x	J´ > K	

Bill was running  
The bull stopped (running)

(10b)´

	_____J´	
K x	J´ > K	

Bill was running  
The bull stopped (running)

(11) There was a huge crowd in the street after the car was moving  
In (11) both clauses are described as durative.

(11a)´

	_____J (=J´)	
I(K) _____	J´ > I(K)	

There was a huge crowd...  
The car was moving

(11b)´

	_____J´	
I(K) _____	J´ > I(K)	

There was a huge crowd...  
The car was moving

(12) Harry was a student after Bill was  
Both clauses are described as durative. It is claimed that it can be the case that Harry «became» a student, no matter whose student career ended first, as shown in (12a)´:

(12a)´

	I(J) _____	
I(K) _____	I(J) > I(K)	

Harry was a student  
Bill was a student

(12b)´

	_____F(j)	
_____F(K)	F(J) > F(K)	

Harry was a student  
Bill was a student

The following truth conditions are given by Heinämäki for A After B:  
 (13) A After B is true at the present moment  $tp$  if and only if

- (i) A is true at some interval J,
- (ii) b is true at some interval K,
- (iii) there is J, such that  $J' \subseteq J$ , and  $J' > tr(B)$ . (At least for some speakers, if A is an accomplishment,  $J' = J$ ).

3. Before we proceed to reconsideration of the descriptions, we should focus our attention on the specification of the reference points. The reference point ( $tr$ ) of an interval defined by A is F (A), the final point of the interval defined by A, in case A is an accomplishment, and in other cases I (A), the initial point of the interval defined by A. In case a time interval is a moment, the initial and final points are the same.

These conditions are violated in one way or another in a number of sentences. I will go through them in detail.

3.1. The «before» clause of (2) is pictured as a solid line, the meaning is described as «got dark», and the conditions applied are those of durative sentences (initial point as reference point). Its initial endpoint is bounded by «before», as it does not profile a stable situation that extends indefinitely beyond the scope of predication. The profile is confined to the component state that falls within its scope. A specification of bounding is made by the «before» connective. Lyons (1977, 483) observes that a stative situation becomes understood as existing rather than happening. Here change is apparently involved. We will call this change «entry into a state»<sup>6</sup>, and will picture it as in (2)<sup>7</sup>.

(2)  $J \times$  We left  
 $K \times \text{-----} J < I(K)$  It was dark

As in the case of (2), the initial endpoint of (3) does not profile a stable situation that extends beyond the scope of predication; that the sentence cannot extend indefinitely beyond the scope of predication can be shown by sentences (14) and (15):

(14) ★ Our dog was barking before the neighbor's dog was barking, or maybe his was barking earlier than that.

(15) Our dog was barking before the neighbor's dog was barking, which kept barking for hours.

The initial endpoint cannot be violated, but the final can.

Concerning (4), «know» is considered to be a typically stative verb<sup>8</sup>. The

6. The term also appears in Comrie (1976, 20).

7. The numbers of the reconsidered sentences are in italics.

8. But notice the dynamic use of «know thyself». Also, without examining extensively, both Comrie (1976, 20) and Mourelatos (1981, 196) refer to the dynamic element of «know». Mourelatos writes that «it can have the insight sense of an achievement».

differentiation of states from dynamic situations is noted by Vendler (1976, 106), who says that «they cannot be qualified as actions at all». But change is definitely involved when knowledge of a dexterity is acquired.

There is another test we can apply. We can test the appropriacy of placing in the environment of «before» (or «after») of verbs that have a purely stative form and a dynamic periphrasis.

(16) He married her before he fell in love with her

(17)? He married her before he loved her

These interpretations are not and cannot be described by the aspectual categories used. Moreover, the requirement that in accomplishments the final point is the reference point is violated and the pragmatic relation of the co-occurrence of the effect of inspiration on writing is not portrayed. The possible interpretations and schematic representations I propose are:

(9a)´	_____ F(J)	John wrote the novel
	K x----- F(J)>I(K)	John got the inspiration
(9b)´	----- x F(J)	John wrote the novel
	I(K) x----- F(J)>I(K)	John got the inspiration

The interpretations of (9a)´ and (9b)´ are:

(9a) John wrote the novel after he got the inspiration

(9b) John finished writing the novel after he got the inspiration

Heinämäki (p. 104) comments on sentence (10)<sup>9</sup>: «There is a problem in (10). The main clause is durative. The reference point of an interval defined by a durative was taken to be the initial point of the period. However, we cannot conclude from (10) at which point Bill started running with respect to the moment the bull stopped. All we can conclude is that there is some subinterval J´ of the interval J at which Bill runs, such that it is after the moment K, where the bull stops». We observe here that the pragmatic relation of the bull's simultaneous running after Bill is not described. It could not be so because the reference point of the «after» clause could be the final one, which would violate the condition that the initial point is the reference point in case the sentence is durative. Thus, it is here described and illustrated as an interval which is a moment. The pragmatic effect of the presupposed interval of the activity of «stop» is not there.

The schematic representations that would account for the logical and the pragmatic properties of the sentence, like in the case of «continue» are:

9. I have changed the number of sentences to fit my counting.

(10a)	-----J'	Bill was running
	-----x K      J' > F(K)	The bull stopped running
(10b)	-----J	Bill was running
	-----x K      J > F(K)	The bull stopped running
(10c)	J x-----	Bill was running
	-----x K      I(J) > F(K)	The bull stopped running

The corresponding interpretations are:

(10a) Bill continued to run long after the bull stopped running

(10b) Bill was running long after the bull stopped running

(10c) Bill started running long after the bull stopped running

The (10a) interpretation is the most possible one pragmatically and the (10c) interpretation is the least possible one pragmatically. (10a) accounts for the pragmatic fact that chasing is simultaneous up to a point, and for the presupposition carried by «continued». Sentence (11) will be analysed as follows:

(11a)	J x-----	There was a huge crowd...
	K x----- I(J) > I(K)	The car was moving
(11b)	-----J'	There was a huge crowd...
	K x----- J' > I(K)	The car was moving
(11c)	-----J	There was a huge crowd...
	K x----- J > I(K)	The car was moving
(11d)	-----J	There was a huge crowd...
	-----x K      J > F(K)	The car was moving
(11e)	J x-----	There was a huge crowd...
	-----x K      I(J) > F(K)	The car was moving

Their respective interpretations are the following:

(11a) A huge crowd got there after the car started moving

(11b) A huge crowd continued to be there after the car started moving

(11c) A huge crowd was there after the car started moving

(11d) A huge crowd was there after the car stopped moving

(11e) A huge crowd got there after the car stopped moving

In (12) S1 and S2 are characterized as durative. In a durative interval every moment of the interval is characterized by the same qualities. (12a) is more typical of the meaning of «become», as only the initial points differ. In (12b) the final endpoint is chosen as a reference point again even though the sentence is durative. It is claimed that if Harry stopped being a student after Bill stopped, it is also the case that Harry stopped being a student after Bill became one. On the same line, even though «stopped being» is given as a possible interpretation of «after he was», the relationship is not systematized. Thus, «stopped running», which is an exit from an activity — according

to our terminology — is described as nondurative (p. 104), as opposed to «was», which is paraphrased as «stopped being» and is described as durative (p. 105). We illustrate (12) as follows:

(12a)´	J x ----- K x-----	I(J)>I(K)	Harry was a student Bill was a student
(12b)´	J x----- -----x K	I(J)>F(K)	Harry was a student Bill was a student
(12c)´	-----J´ -----x K	J´>F(K)	Harry was a student Bill was a student
(12d)´	-----J -----x K	J>F(K)	Harry was a student Bill was a student

their interpretations are the following:

- (12a) Harry became a student after Bill became a student  
 (12b) Harry became a student after Bill stopped being a student  
 (12c) Harry continued to be a student after Bill stopped being a student  
 (12d) Harry was a student after Bill stopped being a student

Another relevant point should be mentioned here, aside from Heinämäki's work. It concerns the concept of «completion», which contrasts with «termination», in that it has no inherent end. An example is cited below: (18) After he had been on the boat for a month he had an accident

Finally, habitual aspect is differentiated from its traditional imperfective character and, in the case of repeated occurrence of events, retains its dynamic character. These aspectual values will be incorporated in the table of semantic features that will be set up on the basis of the up to this point remarks.

In an exhaustive analysis the effect of the perfect — a very controversial topic — on relative time might need to be introduced and handled as an additional aspectual mechanism, in the special sense of the term. For lack of space and time, nevertheless, I will not press the matter toward this direction.

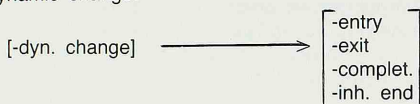
3.2. For the same reason we may take just a brief contrastive look at the Greek counterpart structures. To keep it short, I have skipped the tests that have led to the suggested solutions. However, it should be mentioned that what constitutes a basic contrast between the two languages is that a durative form cannot appear in the context of «πριν» / «αφού» connectives, as the case in Greek is. A dynamic periphrasis is used instead:

- (19) Ο χ έγινε υπουργός αφού έγινε ο ψ  
 (20) ★ Ο χ ήταν υπουργός αφού ήταν ο ψ  
 (21) Ο σκύλος μας γαύγιζε αφού άρχισε να γαυγίζει ο σκύλος του γείτονα  
 (22) ★ Ο σκύλος μας γαύγιζε αφού γαύγιζε ο σκύλος του γείτονα



Due to the limited time and space available I will restrict myself to a rule and a decision table for Greek.

On the basis of the distinctions made we have formed two tables of semantic features, Table 1 and Table 2. The way we read the table is the following. Each one of the tables is divided in two columns. Together they compose the complete form of an aspectual verb (e.g. He started walking). If no aspectual form is present, then the first column is used for the composition of features which forms the nucleus of the structure. Features which are not compatible do not combine. Instead, they form different sets of features, and correspond to different aspectual values. The same double computation is allowed by the coexistence of + and — features in a description. The features «entry», «exit», «completion», and «inherent end» constitute forms of dynamic change:



DISTINCTIONS OF ASPECT	D	E	E	C	I	A	S	H	C	S	A
	Y	N	X	O	N	C	T	A	O	T	C
	N	T	I	M	H.	T	A	B	N	A	T
	A	R	T	P	I	T	I	T	T	V	
	M	Y		L	E	V.	E	T	I	E	I
	I			E	N				N.		T.
EXAMPLE TYPES	C			T.	D						

(1) He started writing	+	+	-	-	-	-	-	-	-	-	+
(2) He started to be	+	+	-	-	-	-	-	-	-	+	-
(3) He stopped writing	+	-	+	-	-	-	-	-	-	-	+
(4) He stopped being	+	-	+	-	-	-	-	-	-	-	+
(5) He continued to write	+	+	-	-	-	-	-	-	+	-	+
(6) .....	-	-	-	-	-	+	-	-	+	0	0
(7) He continued to be	+	+	-	-	-	-	-	-	+	+	-
(8) .....	-	-	-	-	-	-	+	-	+	0	0
(9) He finished writing	+	-	+	+	+	-	-	-	-	-	+
(10) He completed writing	+	-	+	+	-	-	-	-	-	-	+
(11) He rang the bell	+	-	-	-	-	-	-	±	-	0	0
(12) He wrote books	+	-	-	+	-	-	-	-	-	0	0
(13) He wrote a book	+	-	-	+	+	-	-	±	-	0	0
(14) He was writing	-	-	-	-	-	+	-	-	-	0	0
(15) He had been writing for .....	+	-	-	+	-	+	-	-	-	0	0
(16) He was	-	-	-	-	-	-	+	±	-	0	0
(17) He had been for .....	+	-	-	+	-	-	+	-	-	0	0

TABLE 1, ENGLISH

DISTINCTIONS OF ASPECT	D	E	E	C	I	A	S	H	C	S	A
	Y	N	X	O	N	C	T	A	O	T	C
	N	T	I	M	H.	T	A	B	N	A	T
	A	R	T	P		I	T	I	T	T	I
	M	Y		L	E	V.	E	T.	I	E	V.
	I			E	N				N.		
EXAMPLE TYPES	C			T.	D						

(1) Άρχισε να γράφει	+	+	-	-	-	-	-	-	-	-	+
(2) Άρχισε να είναι	+	+	-	-	-	-	-	-	-	+	-
(3) Σταμάτησε να γράφει	+	-	+	-	-	-	-	-	-	-	+
(4) Σταμάτησε να είναι	+	-	+	-	-	-	-	-	-	+	-
(5) Συνέχισε να γράφει	+	+	-	-	-	-	-	-	+	-	+
(6) .....	-	-	-	-	-	+	-	-	+	0	0
(7) Συνέχισε να είναι	+	+	-	-	-	-	-	-	+	+	-
(8) .....	-	-	-	-	-	-	+	-	+	0	0
(9) Τελείωσε το γράψιμο	+	-	+	+	+	-	-	-	-	-	+
(10) Συμπλήρωσε το γράψιμο	+	-	+	+	-	-	-	-	-	-	+
(11) Χτύπησε το κουδούνι	+	-	-	-	-	-	-	-	-	0	0
(12) Έγραψε βιβλία	+	-	-	+	-	-	-	-	-	0	0
(13) Έγραψε ένα βιβλίο	+	-	-	+	+	-	-	-	-	0	0
(14) Έγραφε	-	-	-	-	-	+	-	±	-	0	0
(15) Γράφει μια ώρα	+	-	-	+	-	+	-	-	-	0	0
(16) Ήταν	-	-	-	-	-	-	+	±	-	0	0
(17) Ήταν ένα μήνα	+	-	-	+	-	-	+	-	-	0	0

TABLE 2, GREEK

The features  $\left[ \begin{array}{l} +\text{dyn. change} \\ +\text{complet.} \end{array} \right]$  allow for two combinations, the first of which is an achievement in Vendler's terms, while the second is non-inherent end completion. If a description has the features  $\left[ \begin{array}{l} +\text{entry} \\ +\text{exit} \end{array} \right]$  it entails the features  $\left[ \begin{array}{l} +\text{activity} \\ +\text{state} \end{array} \right]$ , but not vice-versa. If the feature  $[+\text{contin}]$  is part of a set of features it describes a durative interval which is repeated or a dynamic change which is repeated.

3.3. If an interval is characterized as  $[-\text{dyn. change}]$  then any point of the interval can be the reference point. Now having specified the organization of features we can describe a major contrast between Greek and English. Rules (23) and (24) formally express the fact that a durative acquires the

value [+dyn. change] in the context of «before» and «after», «dynamic entry» or «exit»:

$$(23) \left[ \begin{array}{l} \bar{-\text{dyn. change}} \\ +\text{state} \\ +\text{activ.} \end{array} \right] \text{ ————— } \left[ \begin{array}{l} +\text{dyn. change} \\ +\text{entry} \\ +\text{state} \\ +\text{activity} \end{array} \right] / \text{ before —————}$$

$$(24) \left[ \begin{array}{l} \bar{-\text{dyn. change}} \\ +\text{state} \\ +\text{activ.} \end{array} \right] \text{ ————— } \left[ \begin{array}{l} +\text{dyn. change} \\ +\text{entry} \\ +\text{exit} \\ +\text{state} \\ +\text{activ.} \end{array} \right] / \text{ after —————}$$

3.4.1. The A before B relation can thus be formally expressed as:

Before

(25) A ————— B is true at the present time (tp) if and only if

Πριν

- (i) A is true at an interval J,  
 (ii) B is true at an interval K, and  
 (iii) If B has the features<sup>10</sup>  $\left[ \begin{array}{l} B \\ +\text{dyn. change} \\ +\text{exit} \\ \pm\text{complet.} \\ \pm\text{inh. end} \\ +\text{activ.} \\ +\text{state} \end{array} \right]$  or A has the features

A then there is an interval I which  $J \cap K = I$  and  $J \neq K$

$$\left[ \begin{array}{l} +\text{dyn. change} \\ +\text{entry} \\ \pm\text{contin.} \\ +\text{activ.} \\ +\text{state} \end{array} \right]$$

(iv) if the conditions of (iii) are not satisfied, then  $J \cap K = \emptyset$ . In every case  $\text{tr}(A) < \text{tr}(B)$ .

3.4.2. The relation A After B can be formally expressed as follows:

After

(26) A ————— is true at the present moment (tp) if and only if

Πριν

10. «Before» cannot introduce a sentence expressing completion, unless an aspectual verb with this meaning is used.

- (i) A is true at an interval J,  
 (ii) B is true at an interval K, and  
 (iii) if B has the features  $\left. \begin{array}{l} \text{B} \\ +\text{dyn. change} \\ +\text{entry} \\ \pm\text{contin.} \\ +\text{activ.} \\ +\text{state} \end{array} \right\}$  or A the features  $\left. \begin{array}{l} \text{A} \\ \pm\text{dyn. change} \\ +\text{exit} \\ \pm\text{complet.} \\ \pm\text{inh. end} \\ +\text{activ.} \\ +\text{state} \\ \pm\text{contin.}^{11} \end{array} \right\}$  then there is an interval I which  $J \cap K = I$  and  $J \neq K$

(iv) if the conditions of (iii) are not satisfied, then  $J \cap K = \emptyset$ . In every case  $\text{tr}(A) > \text{tr}(B)$ .

### 3.5. Conclusions

- (1) Aspect in both languages can be specified in terms of primitive features which when combined form aspectual categories. The primitive features are similar in both languages.
- (2) Economy of descriptions is effected by the use of semantic features.
- (3) The aspectual values form a range rather than isolated categories.
- (4) The flexibility of this aspectual system could account for cases like «he was understanding», which combines activity and state. Smith (1986) calls this viewpoint aspect but does not give a formal account for it.
- (5) Ambiguities caused by Vendler's categories can be wiped off by the use of semantic features. Reference points can be specified with precision.
- (6) The surface structures that the two languages portray, as regards the forms used, are amplified by the similarity of underlying meanings.
- (7) Pragmatic processes enter into the understanding of relative time.
- (8) The traditional distinction of telic/atelic, if systematized appears to be at the heart of the matter, as opposed to Vendler's analysis which is more analytical than is substantially required, and yet it is not analytical enough to account for in context applications of aspectual values.

11. The restriction that «contin.» carries an opposite value to «dyn.change» must be imposed here.

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## ΠΕΡΙΛΗΨΗ

Spyros Hoidas, *On Relative Time Designated with Before/After, Πριν/Αφού*

Στη μελέτη αυτή εξετάζεται το ποιόν ενεργείας και η σχέση του με τους χρονικούς συνδέσμους Before/After, Πριν/Αφού, στο πλαίσιο της γενικότερης κατηγορίας του «σχετικού χρόνου» στην οποία ανήκουν. Ο συσχετισμός αυτός θεωρείται αναγκαίος γιατί εάν ποιόν ενεργείας είναι η γραμματικοποίηση της διάρκειας ή της μορφής μιας χρονικής δραστηριότητας, ο συσχετισμός δύο χρονικών διαστημάτων είναι ακριβώς θέμα «σχετικού χρόνου». Η περιγραφή γίνεται με βάση διακριτικά χαρακτηριστικά, και η τυποποίηση επεκτείνεται και στην αντιπαραβολική περιγραφή. Διαπιστώνεται ότι πραγματολογικοί παράγοντες υπεισέρχονται στην οργάνωση των προτάσεων αυτών.