



b. *light verb* [five years]<sub>α</sub> [in the period since I saw him]<sub>β</sub>

In other words, the *pu-* and *since-*construction contains the morphosyntactic means to express a time span (the *pu/since*-clause) and make a claim about the measure of its size (given by the temporal pivot). From (3b) we also infer that the assertion of the sentence is a statement about the size of the  $\beta$ -constituent.

I will be using “LB” for the Left Boundary of the time span described in the  $\beta$ -constituent, and “RB” for its Right Boundary. In (3), LB is the time of the event of my seeing him and RB is the Time of Utterance. <sup>iv</sup>

The LB-event must have occurred. That is, **there is an existential presupposition on the LB-event**. In the next section we will see that there is also a uniqueness presupposition.

## I.2. The last occurrence of the event

Part of the meaning of the *pu/ since*-construction is that between the time of the eventuality that sets LB and RB there is no other eventuality of the relevant kind. That is, we need the LB of the time span to refer to the last occurrence of an event of the relevant type. Imagine that the world is as described in (4). Then the sentences in (5) appear false.

(4) He was injured in 1997, in 2000 and in 2001. It is now the year 2003.

- (5) a. It has been six years since he was injured  
b. Ine/echi eksi chronia pu travmatistike

How is this meaning derived? Is there a covert “last”? This does not seem a very attractive option. Moreover, always postulating a covert *last* gives the wrong results in a variety of cases. For one, (6a) should be as bad as (6b):

- (6) a. It has been seven years since his cat died  
b. #It has been seven years since the last time his cat died

In addition, if we always posit a covert *last* then the following should be odd:

- (7) It has been 5 years since I saw you for the first time / for the seventh time / etc..

Sentence (7) should be odd because of the contradiction between *for the first time* and covert *last*. Or it should be odd because it would talk about the last time I saw you for the first time (or vice versa).

In fact, we do not want a covert *last* at all. In the context of (4), I had said that (5) “appeared false” because a first impression might have been that the utterance with a *since*-construction that is true in that context is (8) instead of (5):

- (8) It has been two years since he was injured

But for that matter, in the context of (4), (8) is not felicitous either. What we need is an expansion like the following:

- (9) It has been two years since he was injured for the last time

This gives us another argument for not positing a covert *last* in the *since*-construction: If there was a covert *last*, then (8) without overt *last* but with covert *last* should have been just as felicitous. So a covert *last* is not an answer to our problem.

**In fact, the *pu/since*-construction is best when there is a single event that fits the event description of the *pu/since*-clause.** There are several ways to create a uniquely referring event-description. One option is, of course, to have an LB-event that by its nature is unique:

- (10) It has been five years since his cat died

- (11) It has been five years since this house was built

With events that are in principle repeatable, we need to modify the event description so that only a single event fits it. One way to do that is to add an overt *for the last time*, as we did in (9). But we could have added *for the first time*, or, *for the second time*, or for that matter *for the fifty-sixth time*. As long as we create a uniquely referring event-description. So there is no covert *last* in the *pu/since*-construction, nor does *last* have any special status; any ordinal will do, as any ordinal will create a unique event description. In short, in the context of (4), (8) suffers from uniqueness presupposition failure. Consider also the following.

- (12) a. John got married in St.Patrick's Cathedral.

- b. It has been five years since he did/since then/ since he got married

- (13) a. John got married three times in St.Patrick's Cathedral.

- b.# It has been five years since he did/since then/ since he got married

In the context of (12a), sentence (12b) is fine. However, in the context of (13a), (13b) is infelicitous. If we add *for the last time* or *for the first time* etc in (13b) we can make the sentence felicitous and true but then we have found a description that only one event satisfies. But the exact meaning of *last* is not what saves the sentence. Anything that would yield a description satisfiable by a unique event would do. When there is more than one event fitting the description, the *pu/since*-construction is infelicitous the way (14) is:

- (14) (when there are five books on the table:) #I will give you the book that is on the table

**To summarize, then, what saw in this and the previous section is that the *pu/since*-construction contains a description of the LB-eventuality that has an existential presupposition. Just now, we saw that there is a uniqueness presupposition as well. In short, we are dealing with a (singular) definite description of the eventuality<sup>v</sup>.**

## II.1. Comparing the Meanings of the *pu*- and *na*-constructions

Of course there are intuitive similarities between the *pu*- and *na*-constructions. Moreover, it is easy to see that there is an existential presupposition on the event in the *na*-clause as well: I cannot utter (2) if I have never seen him.

But there are also differences between them and we can learn a lot from these differences. Consider what happens when they are combined with unique, non-recurring events:

(15) Echi / ine 5 chronia pu pethane I gata tu  
has / is 5 years that died his cat  
'It has been 5 years since his cat died'

(16) \*#I gata tu echi 5 chronia na pethani  
the cat his has 5 years NA die

It becomes obvious what is wrong with (16) once we consider what we need to accommodate to make it good: (16) conveys that his cat is able to die more than once. What do these facts tell us? In order for the *na*-construction to be felicitous, there should be the possibility of more than one occurrence of the event-type described in the *na*-clause. **That is, the *na*-construction is best when more than one event fits the description of the LB-eventuality. I will call this the "plurality presupposition" of the *na*-construction.** It follows that the *na*-construction is infelicitous with event descriptions that refer to events that by their nature are unique, as in (16). This is of course the exact opposite of what we have seen in the *pu*-construction.

This difference between them makes us also understand better when each of the *pu*- or *na*-constructions is used. When an event happened only once or can be uniquely described (when we have a uniquely referring (LB-) event description), the *pu*-construction is used. When we have more than one event that fits the LB-description, the *na*-construction is used. Compare the contrast in (18-19), where there was a unique LB-event with the contrast among the constructions in the context of (17):

(17) o Yanis travmatistike prin apo dheka chronia, prin apo pende chronia ke prin apo ena mina  
the Y. was injured before from 10 years , before from 5 years and before from one month  
'Yanis was injured ten years ago, five years ago and one month ago'

The unmodified *pu*-construction is not possible:

(18) Me ala loyia, echi ena mina pu travmatistike #(ya teleftea fora)  
With other words, has one month that he was injured \*(for the last time)

But the *na*-construction is just fine:

- (19) Me ala loyia, echi ena mina na travmatisti  
 With other words, has one month na was injured

The status of (18) (without the expansion) is due to the infelicitous use of a definite description when there is more than one individual that fits the description. The sentence with the expansion is fine because then we create uniquely referring event-descriptions. On the other hand, the *na*-construction is perfectly fine as its plurality presupposition is satisfied in the context of (17).

**We can understand this pattern once we make the assumption that in contrast to the *since-/pu*-constructions, which contain a definite description of the LB-eventuality, the *na*-construction contains an indefinite description.** It is not possible to describe unique events with indefinites. The unacceptability of (16) is akin to the unacceptability resulting from an indefinite determiner on NPs referring to things which are presupposed/ known to be unique. **When a definite description is warranted, a definite description must be used and an indefinite description is infelicitous.** The possibility of plurality is required for the felicitous use of indefinites (Hawkins 1978, Heim 1991 and others):

- (20) a. I watched a game last night. The /\*an /\*one umpire was very unfair.  
 b. I watched a married couple play chess. The/\*a/ \*one man had no endgame.

And when the context does not entail uniqueness, an indefinite must be used.

- (21) a. I saw several games over the weekend. One/ an / \*the umpire was very unfair  
 b. I saw many married couples play chess yesterday. A/ one / \*the man had no endgame whatsoever.

The incompatibility of unique events with the indefinite LB-event description of the *na*-construction also predicts the following contrast:

*Pu*-construction:

- (22) Echi/ine dhio chronia pu ton idha ya teleftea/proti/triti/etc fora  
 Has/is 2 years him I-saw for last/first/third/etc time  
 "It has been two years since I saw him for the last/ first/ third/ etc time"

*na*-construction:

- (23) \*Echo dhio chronia na ton dho ya teleftea/proti/triti fora  
 I-have 2 years na him-see for last /first/third time

We saw earlier how modifiers like *first*, *last*, *third* etc can be used in the *pu*-constructions to yield a unique event description. This explains the acceptable status of (21). On the other hand, the *na*-construction in (22), as an indefinite has a plurality presupposition and as such it is incompatible with modifiers that yield unique (event-)descriptions. So (21) suffers from what *\*a last/first/third person in the row* suffer from.

In other words, if the *pu*-construction contains (23), the *na*-construction contains (24):

(24) .....since (the time of<sup>vi</sup>) **the** event of VP (my seeing him)

(25) .....since (the time of) **an(y)** event of VP (my seeing him).

## II.2 What sort of indefinite is INDEF exactly?

In parallel to the discussion of the indefinite description embedded in the *na*-construction, I want to compare a close topological analogue suggested to me by Irene Heim (p.c.) (where INDEF can rewrite as *a* or *any* in English):

(26) We are five miles (away) from INDEF gas station.

The “gas station sentence” appears similar to the *na*-construction in that the latter can be seen as conveying the following:

(27) We are five years (away) from INDEF event of my seeing him

For both the *na*-construction and the gas station sentence, the question is what precisely the nature of INDEF is. The gas station sentence has its own intrinsic interest but here we will be focusing only on those of its properties that provide a bridge to understanding the *na*-construction.

The first option to consider for INDEF in (26,27) can be ruled out quickly, namely that of a specific indefinite<sup>vii</sup>. In the gas station sentence this would be used when we know of some gas station that is five miles from here. A sentence with a specific indefinite can be uttered when we are ignorant about any other gas station closer by, or, when we cannot exclude that there are others closer than 5 miles to us or even when we know that there are. So the reading with the specific indefinite could be paraphrased as follows:

(28) There is a gas station that we are (exactly<sup>viii</sup>) five miles away from.

Crucially, (28) can be truthfully uttered also when there is another gas station that is closer by than the one referred to in (28).

However, the *na*-construction cannot have this interpretation at all. That is, if sentence (29) is true, **there is no other event of my seeing him that is closer than five years to us.**

(29) Echo akrivos 5 chronia      na ton dho  
Have exactly 5 years      na him-see  
‘It has been exactly 5 years since I saw him’

This is a crucial difference between the gas station sentence and the *na*-construction and it tells us that even if INDEF can be a specific indefinite in the gas station sentence, INDEF cannot be a specific indefinite in the *na*-construction. We conclude then that the *na*-construction does not contain a specific indefinite<sup>ix</sup>. And as we are interested in the gas station sentence only in so far

as it can help us understand the *na*-construction, I will not be discussing the specific indefinite interpretation of the gas station sentence any further.

The next option to consider for INDEF is that of an existential quantifier. It seems hard to make this work in our cases. These sentences would be predicted to mean that we are five years from some event of the relevant type and therefore it would again be wrongly predicted that the *na*-construction would be true if there were closer events. In fact, in the absence of negation it is hard to imagine how the right meaning of the *na*-construction would be derived if INDEF were an existential quantifier.

The final option for INDEF that we will consider is a free choice indefinite (this was proposed for *na*-clauses inside relative clauses in Beghelli 1998). If INDEF is FC, I will follow a common practice and assume that it is a wide scope universal, augmented by whatever properties FC items differ in from other universal quantifiers. I will not go into what all FC adds to the universal force.

Let's start with the gas station sentence. If we are dealing with a Free Choice Universal then the gas station sentence would mean the following (wide scope represented in (31)):

- (30) We're five miles from every+FC gas station.
- (31) Every+FC station is such that we are five miles from it

One might think that (30/ 31) would force us to a reading where we are at the epicenter of a circle of a 5 mile radius, on the periphery of which are gas stations and this is not necessarily the meaning of the gas station sentence. But this is not a problem: if *five miles* stands for *at least five miles*, we get the actual meaning of the gas station sentence:

- (32) Every+FC station is such that we are at least five miles from it.

Similarly, on this view of INDEF, the *na*-construction would look as follows:

- (33) Every+FC event of us seeing him is such that we are at least five years from it

Let us evaluate (33) with the background we have gained so far. Recall that appealing to the definite description of the LB-event was how we accounted for the fact that the *since*-construction and the *pu*-construction picked out the unique (or uniquely salient) eventuality that fit the description of the *pu*-clause. But as we also saw, the *na*-construction has partially overlapping truth conditions in that the time span in the *na*-construction is also empty of events of the relevant sort.

How can we derive the desired result? In answering this question we find one more argument for interpreting INDEF as a FC indefinite. **If we are five years away from any event of the relevant type then we are five years away from the most recent event of the relevant type –the way that being five miles away from any gas station entails we are five miles away from the closest gas station. I will conclude then that a free choice indefinite (event) description in the *na*-clause produces the right results with respect to this important interpretive feature of the *na*-construction<sup>x,xi</sup>**

### III.1. Comparing the structures of the *pu*- and *na*-constructions

We have seen how the meanings of the *pu*- and *na*-constructions differ. <sup>xiii</sup>But how do their structures differ? Consider the following examples of a *na*- and *pu*-construction, where the temporal pivot is in square brackets:

- (34) Echo            [pende chronia]            na dho ton Mano  
          have        five        years                    NA see the Mano
- (35) echi/ine [pende chronia] pu        idha        ton Mano  
          has / is    5            years        that        I-saw        the Mano

One first and obvious difference is that the matrix verb agrees with the subject in the *na*-construction but not in the *pu*-construction<sup>xiii</sup>. This, of course, means that the matrix subject and the embedded subject cannot co-refer in the *pu*-construction. On the other hand, in the *na*-construction they must corefer. Furthermore, the embedded verb in the *pu*-construction must be in the Past Tense, whereas the embedded verb in the *na*-construction cannot be in the Past Tense.

Now these differences probably remind you of the debate about the general nature of *na*-clauses. I want to avoid this debate here as the focus of the current discussion is different. However, I need to make some background assumptions and will therefore stick to my old view that in order to distinguish finite from non-finite *na*-clauses, the crucial test is not the presence/ absence of agreement but the presence/ absence of a temporal domain that is independent from the higher clause (Iatridou 1988, Varlokosta (1994), Terzi 1993, and many others; see Philippaki and Catsimali 1999 for an opposing view; see Alexiadou and Anagnostopoulou 2000 for an overview of the debate on this issue).

With the aforementioned properties, then, the *na*-clauses of the *na*-construction behave as non-finite clauses whereas the *pu*-clauses of the *pu*-construction behave (unsurprisingly) as finite clauses. I will therefore conclude that the *pu*-construction looks roughly as in (36):

- (36)  $\text{pro}_{\text{expletive}}$  **light verb** [pende chronia] [<sub>CP</sub> pu Subject V..... ]

What about the *na*-construction? If we draw the conclusion that the *na*-clause does not have a source of Nominative for its subject, the possibility of Raising of that subject in search of Nominative arises. We could then keep the the *na*-construction minimally close to the *pu*-construction by suggesting the following structure<sup>xiv</sup>:

- (37) Subject<sub>i</sub> **light verb** [pende chronia] [<sub>IP</sub> t<sub>i</sub> na V ....]

This would mean that the two constructions are derivationally related and start, in fact, from the following common underlying structure:

- (38) **light verb** [temporal pivot] [C/IP <sub>LB-adverbial</sub>]

We would then have to proceed to relate the difference in the syntax to the differences in the meaning that we saw earlier. The finite clause (*pu-*) clause would provide a definite event description and the non-finite (*na-*) clause would provide an indefinite description:

- (39) a. *pu*-construction: *light verb* [5 years]  $\alpha$  [since/ *pu* [IP ...]]  $\beta$   
 b. *light verb* [5 years] since (the time of) **the** event *e*
- (40) a. *na*-construction: NP<sub>i</sub> *light verb* [5 years]  $\alpha$  [ti *na* VP]  $\beta$   
 b. *light verb* [5 years] since (the time of) **FC-any** event of type *e*

Unfortunately, we cannot do this. There are basically two reasons for this. The first reason is an important difference between the two constructions in the type of temporal pivot they take. The *na*-construction permits a greater variation in choice than the *pu*-construction. The *na*-construction permits amount pivots as well as *apo*-adverbials. The *pu*-construction permits only the former:

- (41) Echo *na ton dho* a. *pende chronia*  
 I-have NA him see five years  
 b. *apo to 1991 / apo tote / apo tote pu fagame mazi*  
 from 1991 / from then/ from then when we ate together
- (42) a. *ine/echi [pende chronia] pu ton idha*  
 is/ has five years that him-saw  
 "It has been five years since I saw him"  
 b. *\*ine/echi [apo to 1991] pu ton idha*  
 c. *\*ine/echi pu ton idha [apo to 1991]*

If we claim that both the *na*- and *pu*-constructions start from (38) we will be at a loss to explain this striking difference in temporal pivots.

The second reason we cannot adopt this close derivational relationship between the two constructions is a bit more involved.

Consider the modifier *exactly*. It is clear what it would mean if we were to add it to the temporal pivot in the *pu*-construction. But what would the sentence mean if *exactly* were added to the *na*-construction, as in (43):

- (43) Echo *akrivos pende chronia na dho ton Mano*  
 I-have exactly five years na see the Mano

According to the hypothesis we are entertaining, namely that the *na*-clause is equivalent to the *pu*-clause and the temporal pivots in the two constructions are equivalent, (44) should mean that we are at the epicenter of a circle whose radius is five years and all events of the relevant type are on the perimeter. This is of course absurd, given that we grammaticalize time as linear.

One possible expectation could be that (43) is a degraded sentence, but this is not so, it is a perfectly fine sentence. Alternatively, one might expect that for (43) to be good, there should be only one event of the relevant type and it should be at a distance of five years from us (one way to satisfy the condition that all relevant events are strewn around the perimeter). This is not borne out either; (43) can be uttered when there are many events of the relevant type at distances of 6, 7, 8 etc years (recall the plurality presupposition of the *na*-construction). In short, addition of *exactly* brings out more difficulties with the hypothesis according to which the *na*- and *pu*- clauses are equivalent.

I conclude that the temporal pivots do not play the same role in the *pu*- and *na*- constructions and that therefore it cannot be the case that the role of the *pu*- and *na*-clauses is the same, even putting aside their differences in finiteness. In short, (38) is wrong.

### III.2. The difference is in the temporal pivots

What do the different possible temporal pivots that appear in the *na*-construction have in common? There is no reason to believe that in the *pu*-construction the temporal pivot is anything other than a temporal amount. In fact, in the full manuscript, I compare the *pu*- and *IsinceI*-constructions to the temporal existential *There are two cups of water in the pot*.

In the *na*-construction, however, the fact that the temporal amount pivot can be substituted by *apo*-adverbials should make us hesitate. Such adverbials are typical LB-adverbials in the regular Perfect (just like *since*):

(44) Apo tote pu efiges, echo pai tris fores sto Londhino  
 Since you left I have gone three times to London

(45) Afto to vivlio to grafi apo to 1990 (equivalent to the English U-Perfect)  
 He has been writing this book since 1990

Moreover, we should consider the fact that in Greek the equivalent of English Perfect-level *for ten years* does not have the preposition, i.e. it is plain *dheka chronia* ('ten years')<sup>xv</sup>:

(46) Ksero ton Kosta dheka chronia (equivalent to the English U-Perfect)  
 I have known Kosta for ten years

This means that it is not possible to distinguish, just from the form, whether a temporal amount pivot (*pende chronia*) is a temporal amount argument (as I argued it is in the *pu*-construction) or an LB-adverbial (as I am arguing it is in the *na*-construction).

**If we take this homophony into account, it is possible to say that the temporal pivots in the *na*-construction are all LB-adverbials. This way we obtain a unification of the types of temporal pivots the *na*-construction can take<sup>xvi</sup>.**

**This, in turn, means that the role of the pivot in the *na*-construction may be totally different from that in the *pu*-construction.**

In the *pu*-construction, the temporal measure (*five years*) is the first argument in a temporal existential and the *pu*-clause is the LB-adverbial:

(47) *light verb* [5 years]<sub>α</sub> [since 1990/ since I saw him]<sub>β</sub>

On the other hand, the *na*-construction is being argued to look as in (48), with [5 years] not being the first argument of a temporal existential but an LB adverbial, just like *apo*-clauses:

(48) *echo na ton dho* [apo to 1990 / pende chronia]  
I-have na him see [since the 1990 / five years]

In short, irrelevant details aside, the *pu*-construction is argued to look as follows<sup>xvii</sup>:

(49)

	VP	
	VP	ADV
<i>Echi/ine</i>	<b>[pende chronia]</b>	<i>(apo tote) pu ton idha ya teleftea fora</i>

On the other hand, the syntax of the *na*-construction is argued to look as in (50), with [5 years] not being the first argument of a temporal existential but an LB adverbial, just like *apo*-/*pu*-clauses:

(50)

	VP	
	VP	ADV
<i>Echo na ton dho</i>		<b>[pende chronia]</b> [apo to 1991]

In the *na*-construction, the amount pivot *pende chronia* appears in the Accusative. According to (50), this Accusative is predicted to not be associated with the matrix verb *have*. In fact, Accusative is also the Case that temporal adjuncts appear in. This is supported by the fact that the Accusative appears no matter what the matrix verb is in U-Tenses:

(51) *Perpata ena chrono*  
walks one year/ACC

(52) *Ine arostos ena chrono*  
Is sick one year/ACC  
'He has been sick for one year'

In the *pu*-construction, where the pivot is an argument of the matrix verb, the Case on the measure argument is predicted to depend on the verb. Recall that the *pu*-construction has a choice between *be* and *have*. When the verb is *have* it appears in the Accusative, when it is *be*, it appears in the Nominative:

(53) *Echi enan chrono*                      *pu ton idha*  
Has one year/ACC                      that him I-saw

- (54) Ine enas chronos pu ton idha  
is one year/NOM that him I-saw

This supports the position that the temporal amount pivot is an adjunct in the *na*-construction but an argument in the *pu*-construction.

#### IV. Composing the Meaning

Finally we come to the question of how to derive the meaning of the *na*- and *pu*-constructions. I have effectively argued that the *na*-construction is similar structurally to sentences like (56):

- (55) Echo na ton dho [pende chronia /apo to 1990]  
(56) Ksero ton Kosta [pende chronia/ apo to 1990]

In (56) it is clear what is going on: the predicate *Ksero ton Kosta* holds throughout the interval whose LB is 5 years ago (or in 1990) and the moment of utterance. But this means that (55) conveys that the predicate *echo na ton dho* holds throughout an equivalent interval. But what does *echo na ton dho* mean and how does it yield the meaning of the *na*-construction?

There is a modal construction that has a similar look:

- (57) echo na dho ton yatro  
I-have na see the doctor  
"I am scheduled to see the doctor"

Since we see the string *echo na ton dho* also in this modal construction, one wonders whether the *na*-construction shares part of its meaning with it. But the meaning of the modal is quite different from what we have in the *na*-construction, which lacks any meaning of obligation or schedule. Furthermore, certain type of subjects cannot appear in (57) while they have no problem in the *na*-construction:

- (58) Echi na vreksi pende vdhomadhes  
Has na rains five weeks

- (59) \*Echi na vreksi

I conclude that (57) is not part of the meaning of the *na*-construction.

Rather than taking you through everything that *echo na ton dho* does *not* mean in the *na*-construction, let me take you directly to what I think is going on.

**I will argue that the matrix predicate in the *na*-construction is an existential construction. That is, the *na*-construction asserts that something exists throughout the relevant interval (whose LB is the temporal pivot and whose RB is the time of utterance).** What is this something? I argue that the matrix predicate asserts the existence of a time span between two points. This means that there are two time spans involved in the *na*-construction.



What (67) says is that for every *t* in the Matrix Time Span there will be a time span (the Embedded Time Span) between any event of the type of the *na*-clause and *t* itself. In this way, the entire span will be free of events of the type of the *na*-clause. This is how we get an empty time span and a more direct assertion about it than in the *pu*- and *since*-constructions.

How do we get the MatrixTime Span to be empty of events of the relevant type? If there were an event of the relevant sort in the time span, let's say at *t*:

(68) Matrix Time Span: [.....*t'*.....]  
                                   1990                  Event                                  NOW

then *t'* would falsify (66) in that there would be a non-null time span between an event of type *e* and it.

The meaning of the *pu*-construction, on the other hand, is much simpler to derive (and read off the tree in (49)), so that the meaning of (69) would be as in (70)

(69) *Ine/echi tria chronia pu pethane i gata tu*  
       'It has been three years since his cate died'

(70)  $\exists t$  [ETS (*t*,now) & LB(*t*)= the *t* [his cate died at *t*] &  $\exists t' \subseteq t$  [3 years (*t'*) &  $t' \subseteq t$ ]]

**CONCLUSION:**

We have seen that all three of the *since*-/ *pu*- and *na*-constructions place RB, the Utterance Time if the Tense is Present, at a point that is at a distance from the closest event of the relevant sort. But they do this in different ways. The *since*- and *pu*-constructions, place the unique (or uniquely relevant) event at LB and thereby implicate that there is no other such event in the time span between LB and us.

On the other hand, the *na*-construction appear to be making a direct assertion about the event-emptiness of the time span. That is, the meaning of the *na*-construction is that there are potentially many events of my seeing him but there is a 5-year zone around which is empty of gas stations or events of my seeing him.

**Appendix**

Tsoulas (1994) argues that *na*-clauses are indefinites (though not in the construction that we have been focusing on). However, even though I am in a way adopting Tsoulas's insight, the arguments that he actually used do not argue for his conclusion.

Tsoulas notes that in French the Wh-island is much weaker when the embedded clause is infinitival or subjunctive than when it is indicative.

Indicative:

- (1) \**Que te demandes-tu* [ a qui Suzy donne ]?  
       what you wonder [to who Suzy has given ]
- (2) \**Que te demandes-tu* [qui a dit qu' Alex a vu ]?  
       What you wonder [who said that Alex saw ]

Infinitive:

- (3) A qui te demandes-tu [quoi donner]?  
To whom you wonder what to give
- (4) Que te demandes-tu [a qui donner]?  
What you wonder to who to give
- (5) Que te demandes-tu qui a decide de voir?  
What you wonder who decided to see

Subjunctive:

- (6) Que te demandes-tu qui a voulu que Sophie voie?  
What you wonder who want\ ed that Sophie see-SUBJ
- (7) Que te demandes-tu qui a exige que Sophie ecrive?  
What you wonder who required that Sophie write-SUBJ

Tsoulas talks about similar patterns in Greek. Greek has the expected Wh-island effect with indicative clauses but he claims that with na-clauses, the effect is much weaker:

- (8) Ti anarotiese [se pion na dosis ]?  
What you-wonder to who NA give
- (9) Se pion anarotiese [ti na dosis ]?  
To whom you-wonder what NA give
- (10) Ti anarotithikes [pios apofasise na di]?  
What you-wonder who decided NA see

Tsoulas reminds the reader of extraction facts out of DPs: extraction out of definites or specific indefinites is much worse than out of indefinites. This has been noted for English, here are Tsoulas's French examples:

- (11) De qui veux-tu voir une photo?  
Of who you want see a/one photo
- (12) De qui veux-tu voir des photos?  
Of who you want see asome photos
- (13) \*De qui veux-tu voir une certaine photo?  
Of who you want see a certain photo
- (14) \*De qui veux-tu voir la photos?  
Of who you want see the photo
- (15) \* De qui veux-tu voir ces photos?  
Of who you want see these photos
- (16) ??De qui veux-tu voir la photo?  
Of who you want see the photo

Tsoulas takes the position that the indicative has a definite feature (which can appear on C or on I), whereas the infinitive and subjunctive have an indefinite feature. Hence the extraction out of

indicatives is bad but extraction out of subjunctives is good. He does not address why indefiniteness is compatible with extraction while definiteness is not.

One important problem with Tsoulas's account is the following. He talks about a parallelism in extraction but of course the parallelism, if there is one, is not between definite DPs/ indicative clauses on the one hand and indefinite DPs/ subjunctive/ infinitives on the other. In general, extraction out of indicatives is permitted just fine, whereas extraction out of definite DPs is not permitted. Extraction difficulties with the indicative arise only once we combine indicative with an island-inducing environment like an embedded question. In other words, the definiteness of the indicative is not in itself sufficient to block extraction, an island is necessary. This means that we cannot argue for a parallelism between indicatives and definites based merely on extraction: definites always block extraction, indicatives block extraction only if there is an island.

Tsoulas's second argument has as follows. There are environments where the indicative, as a definite, causes Definiteness Effect violations, whereas the subjunctive and infinitive do not, which argues, according to Tsoulas, that they are indefinites:

- (17) Il faut que [Pierre parte/\*part]  
It is necessary that P leave-subj/\*ind
- (18) Il faut trouver Sophie  
It is necessary to find Sophie
- (19) Il arrive que Sophie tarde trop / \* vient vite]  
It happens that S is late-subj a lot / comes quickly-ind

Tsoulas does not provide any arguments to the effect that the ungrammatical expansions of the above sentences are ungrammatical because of Definiteness Effects violations. Moreover, his claim cannot be that indicative clauses cannot be coindexed with expletives as there are plenty that can (though it's unclear to me what Tsoulas's proposal could say about this):

- (20) Il semble que Marie est malade  
It seems that Marie is sick

He discusses only the environments where “.. a) [clausal constituents] alternate with DPs and b) the relevant factor governing the distribution of DPs is precisely the Definite vs Indefinite distinction. However, the relevant parallels with DPs he shows are only:

- (21) Il arrive [plusieurs personnes]  
there arrived many people
- (22) \*Il arrive Sophie

First of all, it is far from clear whether the uses of *arriver* in (19) and (21) are alike. As for *falloir* (17,18), Tsoulas does not give examples with this verb taking an NP complement. However, *falloir* can take NP complements and there is no problem with these being definite:

- (23) Il me faut ce/un stylo  
 'I need this/ one pen'

As for Greek modal verbs that embed *na*-clauses, he gives only one example (*prepi* 'must') but this does not take DP complements so we cannot test the parallel with definite DPs. However, if we look at the modal *chriazome* 'need', which can take either NA-clauses or NP complements, the parallel is again not supported as the DP-complement can be definite:

- (24) chriazete na figume / \*oti fevgume/ (tha) figume  
 needs.3sg na leave.1pl / that leave.1pl  
 'it is necessary for us to leave'
- (25) chriazome ena /afto to vivlio  
 I need.1sg a book /this the book  
 'I need a/ this book'

In other words, we cannot use Tsoulas's second argument for the parallelism under discussion; we only have the parallelism in extraction facts, with the questions that arose earlier.

To summarize then, Tsoulas's discussion of subjunctive and indefinites and in particular Greek *na*-clauses does not support his conclusion that *na*-clauses are indefinites and therefore we cannot rely on it for independent evidence that *na*-clauses can be indefinite descriptions of events.

## Notes

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\* This handout/ paper is excerpted from a longer manuscript entitled "More Perfect Constructions". That manuscript contains more cases on the basis of which the position that verbal morphology can be seen as determiners on event descriptions is argued. The first section of "More Perfect Constructions" will appear with the title "A little more about the English Perfect" in *Perfect Explorations*, Alexiadou, Rathert, von Stechow eds, Mouton de Gruyter, (2003).

<sup>i</sup> In English this light verb is in the Perfect, in Greek it is not. There are several differences between the Greek and English Perfects (See Iatridou, Anagnostopoulou and Izvorski (2001)). However, we can put some of these questions aside here with the simple reasoning that the Greek verbs *echo* and *ime* do not have Perfect participles anyway.

<sup>ii</sup> The temporal pivot is obligatory in both constructions. Without the pivot the sentences are grammatical on the relevant reading if one makes a particular gesture with one's hand (circling clockwise at the elbow) which indicates 'a long time'.

<sup>iii</sup> In the *pu*-construction, the light verb can be either *echi* or *ime* (not so in the *na*-construction). I do not know what the choice of existential verb determines and is determined by. The variation/similarities between *have* and *be* have received a lot of attention and I refer the reader to the relevant literature. Certainly Kayne (1994) convinces one that even adequately capturing the possible dialectal combinations is far from easy. The Case on the temporal pivot is determined by the choice of light verb. I will be giving the examples with both light verbs and will choose an  $\alpha$ -constituent for which the forms in the accusative and nominative are the same, i.e. when there is syncretism, to avoid unnecessary complication in the examples.

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<sup>iv</sup> I will follow the description of the Perfect in Iatridou, Anagnostopoulou and Izvorski (2001) (henceforth IAI). IAI's proposal is a version of an Extended Now theory of the Perfect such as McCoard 1978, Dowty 1979, and others. For a formal implementation of the assumptions I make here, please consult von Stechow and Iatridou (2002)

IAI argue that the Perfect sets up a time span, the Left Boundary (LB) of which is set by an adverbial, the Right Boundary (RB) of which is set up by Tense. In the Present Perfect RB is (at) the time of utterance, in the Past Perfect, RB precedes the time of utterance and in the Future Perfect RB follows the time of utterance. Consider the examples (i) (Existential Perfect) and (ii) (Universal Perfect):

- (i) a. Since 1990 I have been to Cape Cod three times  
b. There is a time span whose LB is 1990 and whose RB is the utterance time and in that time span there are 3 events of me going to the Cape
- (ii) a. He has been sick since last Tuesday.  
b. There is a time span whose LB is last Tuesday and whose RB is the utterance time throughout that time span there is an event of him being sick.

The examples in (i,ii) are with *since* but there are examples of more adverbials in IAI.

There are several ways to express the coming together of Tense and the *since*-clause to form a time span as its RB and LB respectively. For the sake of concreteness, I will assume the following. Many languages, including English, have temporal adverbials that make both RB and LB overt, e.g. *from... to...* In fact, I have found adverbials like *since*, which cannot take an overt RB, to be rare. I will assume that basically *since* is like *from... to...* in that it comes with a second argument which is the RB of the time span it defines. The only difference is that this second argument is a variable and this variable is bound by and gets its content from Tense. In this way, if Tense is Present, RB (the second argument of *since*) overlaps the time of utterance; if it is Past, RB precedes the Time of Utterance.

Similarly, the time span in the *pu/since*-construction is the combined outcome of Tense (RB) and the time of the event described in the *since*-clause (LB).

- (iii) since-construction + Past:  
a. I saw him last week. It had been 2 years since I saw him
- since-construction + Future  
b. In one week it will be 2 years since I saw him

We should not forget that numerals always come with some vagueness, "two" could be "at least two" not "exactly two":

- (iv) a. If it has been two years since your last check-up, you are entitled to a free exam  
b. If there are five horses in your meadow, you should spray for parasites

<sup>v</sup> You may have noticed an apparent contradiction at this point. I argued that there is a uniqueness presupposition on the LB-event of the *pu/since*-construction. Yet, we started out the paper with sentence (1), which certainly does not imply that I have seen him only one time. So what is the difference between (4,8), (13a,b), where failure of uniqueness causes a problem for the *pu/since*-construction and sentence (1) where it does not? In effect what happens is that in (1) the context makes one event salient and so the *pu/since*-clause has no problem picking that event up. Why does the context do that for (1) but it cannot do it for (4,8), (3a,b)? The difference lies in that with certain events, it lies in the pragmatics of their nature that only the most recent one is relevant. Consider for example, going to the hair-dresser. You are only as good as your last visit. For this reason, when you ask your friend (i), you will expect (iia) as an answer and not (iib):

- i. When did you get a haircut?
- ii a. Last Tuesday  
b. In 1964 I went in February, May, July and October. In 1965 I went in January, March... etc etc

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And when you get (iia) as answer, you will correctly assume that Tuesday was the last time your friend had a haircut. If it turns out that your friend had a haircut last Tuesday but also had one yesterday, you will feel that you have been seriously misled.

So it is not surprising that one can say (iii) without implicating that last week was my only ever visit to the hairdresser:

- ii. It has been one week since I went to the hairdresser

With respect to (8), in most contexts, getting injured is not such a common-place affair that only the most recent counts as relevant.

<sup>vi</sup> See Glasbey (1992-3) for arguments that “a temporal entity from [an] event entity] (p. 289) is not all that straightforward and that we should maintain a distinction between events and times. In this context, see also Larson 1999.

- <sup>vii</sup> However one implements specific indefinites.

<sup>viii</sup> The adverb ‘exactly’ is used here to avoid confusion due to the fact that “five” can be taken to mean “at least five”. The point here is that the *na*-construction blocks the existence of an event of the relevant sort closer to the time of utterance (RB) than the time indicated by its temporal pivot.

<sup>ix</sup> Another argument supporting this same conclusion is that in the interpretation of INDEF as a specific indefinite in the gas station sentence, it is possible to have a pronominal refer back to it:

- i. We are 5 miles from a gas station but it is a very expensive one.

Such pronominal back reference is not possible with the *na*-construction, though there are means to refer back to events in Greek (see Iatridou and Embick 1997).

<sup>x</sup> This is not to say that *all na*-clauses are necessarily indefinites. There are different types of *na*-clauses and the cases would have to be looked at individually.

<sup>xi</sup> One might raise the following two objections to the position that when INDEF in the gas station is *any* it is FC and thereby also object to there being a FC event description in the *na*-construction.

The first possible objection has to do with the fact that FC *any* has been claimed to state a policy (Dayal). Consider the following:

- i. This store accepts checks from every/any bank.

In the expansion with *any*, the sentence is said to convey the existence of a policy that if a new bank is built, this store will accept its checks. This is said to be due to *any* ranging over possible banks as well. No such policy is entailed with *every*. Our gas station sentence, however, states no policy. If another gas station is built, it is not claimed that it will be at least 5 miles from where we are. Similarly, there is no matter of policy in the *na*-construction. Is this an argument that *any* in the *na*-construction and the gas station is not FC (but NPI, for example)? There are languages where the FC items are not homophonous with NPIs. Greek is such a language. In Greek (Italian and other languages), the gas station sentence contains a FC item (and cannot contain an NPI):

- ii. Imaste pende milia apo opiodhipote venzinadhiko  
we are five miles from whatever-FC gas station

This is expected given everything that we have said so far. But what about the issue of policy implications? There is no policy about where gas stations can appear in the Greek gas station sentence any more than there is in the English one. One might respond by saying that Greek FCs never implicate a policy. But this is not so. In other policy-testing environments, Greek behaves the same way as English with respect to policy implications, as long as the environment contains Imperfective Aspect:

- iii. Afto to magazi dhexotan/\*dhexotike epitayes apo opiadhipote trapeza  
this the store accepted-IMP/\*PRF checks from FC bank

In short, in Greek, a policy-implication is a possible but not a necessary correlate of overt FC items (possibly a correlate of the Imperfective). This means that the absence of policy implications with the covert FC item I am postulating in the *na*-construction is not an argument

against the proposal that there is a FC description in the *na*-construction. Given the absence of policy implications in the English gas-station sentence, I will assume that also for English policy implications are not a necessary correlate and will interpret von Stechow (2000) as essentially arguing that arbitrariness is what is involved with FCs and policy is one possible source for that but not the only one.

The second possible objection to INDEF being FC has to do with a fact that we saw earlier, namely, the LB-eventuality is presupposed to have occurred. This is what we had called the existential presupposition of the *na*-construction. The question is whether we can postulate a FC item in a context with existential presuppositions. However, the fact is that the Greek (and Italian) gas station sentence, which unambiguously contains a free choice item, also has an existential presupposition, as shown in (99b), and as expected the English gas station does too<sup>xi</sup>:

- iv. There are no unicorns....
  - a. ...#Therefore, we are five miles from any unicorn.
  - b. ...# Eimaste pende milia apo opiondhipote monokero  
We are five miles from FC unicorn

Contrast the unacceptability of (iv) with:

v. There are no unicorns. Therefore there are no unicorns in our parking lot  
So there is no way around the fact that at least some FC items sometimes have existential presuppositions. Hopefully future work will permit us to understand the environments under which FC items appear with existential presuppositions. I conclude that these two possible objections to INDEF being FC have been overcome and that we can maintain the hypothesis that the *na*-construction contains a FC indefinite description of the LB eventuality.

<sup>xii</sup> Here is a nice way in which the difference between the *na*- and *pu*-constructions can be felt. Imagine that I go regularly to the hairdresser to get my hair curled. Usually the perm lasts around a month. If it has been only a week and my hair is already flat, then the *pu*-construction is much better than the corresponding *na*-construction:

- i. Ine/echi mia vdhomadha pu piga sto komotirio ke ta malia mu echun idhi pesi  
Is/ has one week that I-went to the hairdresser and the hair my has already fallen

On the other hand, if several months have passed since my visit to the hairdresser and my hair is still unexpectedly curly, the *na*-construction is better:

- ii. Echo 3 mines na pao sto komotirio ke ta malia mu ine akomi zgura  
I-have 3 months NA go to the hair-dresser and the hair my is still curly

In the latter case, I think that the *na*-construction is preferred because what is emphasized is that there is hairdresser-free zone (of unusual size).

<sup>xiii</sup> I should point out that for some speakers it is possible to put agreement on the matrix *have* so that it shares features with the lower subject:

- i. emis echume enan chrono pu idhame ton Mano  
we have one years that we-saw the Mano  
"It has been one years since we saw Mano"

This is entirely impossible when the existential verb is *be*:

- ii. \*\*emis imaste enan chrono pu idhame ton Mano  
we are one year that we-saw the Mano  
"It has been one year since we saw Mano"

I do not have anything insightful to say about the possibility for (i).

<sup>xiv</sup> Or, to avoid the aforementioned debate about the status of the subject of *na*-clauses, we could use the more neutral

Subject<sub>i</sub> **light verb** [pende chronia] [<sub>CP</sub> t<sub>i</sub> / Pro na V ....]

In the full manuscript there are additional arguments to the effect that the *na*-construction contains Raising. For our purposes today, though, that is not really crucial.

<sup>xv</sup> There is a *epi dheka chronia* ('during ten years'), but it is Eventuality-level only. There is also a *ya dheka chronia* ('for ten years'), which also seems to go with imperfective eventuality only. This is also the adverb that goes with intentions:

- 
- i.        irtha ya dheka meres ala emina ikosi  
 I-came for ten days    but I-stayed twenty  
 ‘I came with the intention of staying ten days but stayed twenty’

<sup>xvi</sup> Here is one more adverbial that can appear in the *na*-construction but not in the *pu*-construction:

- i.        echo na ton dho        edho ke dheka chronia    (*na*-construction)  
 I-have Na him see    here and ten years
- ii.       \*echi/ine edho ke dheka chronia pu ton idha                    (*pu*-construction)  
 has/is here and ten years        that him I-saw

This is also an LB-adverbial (and therefore it is predicted to occur with the *na*-construction but not the *pu*-construction):

- iii       Grafi afto to to vivio edho ke dheka chronia  
<sup>xvii</sup> There are some variations on the *pu*-construction (A is the one in the text):

- i.        A:        echi/ine pende chronia pu    ton idhe teleftea fora  
           has/is 5 years        PU him saw last time
- B:        echi/ine pende chronia apo tote    pu ton idhe teleftea fora  
           Has/is 5 years        from then PU him saw last time
- C.        echun perasi pende chronia \*(apo tote) pu ton idhe teleftea fora  
           have passed 5 years        from then that him saw last time

All three variations show the by now familiar pattern with RB/LB behaviour. Variation B seems the partner of the following English sentence:

- iv.       It has been five years from/since the time/day that I saw him last

Variation C is most similar to the following English construction:

- iii.       a. Five years have passed since I saw him last  
           b. Five years have passed from/since the time/day that I saw him last

Variation C and English iii seem to me to be garden variety Perfects, not temporal existentials, though nothing depends on this decision.

One important difference between the versions A and B/C regards the possibilities for long distance readings in the clause that describes the eventuality. In the C versions lower readings are predictably available, given the A-bar operator involved in the relative clause:

- v.        Echun perasi 5 chronia apo tote    pu i Maria nomizi oti irthe o Kostas  
 have passed 5 years    from then REL Maria believes that came Kostas  
 (i.e. M believes that Kostas arrived 5 years ago)

The B variation permits a lower reading at least for some speakers, myself included:

- vi.       Echi 5 chronia apo tote    pu nomizi i Maria oti irthe o Kostas  
 has 5 years    from then REL believes Maria that came Kostas  
 (i.e. M believes that Kostas arrived 5 years ago)

On the other hand, variation A does not permit long distance readings:

- vii.       Echi 5 chronia pu nomizi i Maria oti irthe o Kostas  
 has 5 years    PU believes Maria that came Kostas  
 (only reading: Maria believes something for 5 years)

This difference between A and the B/C versions is significant in that it puts more support behind the possibility that *pu* in the A version is a factive complementizer and not part of a relative clause. If it had been the latter we would have expected long distance readings.

With the *since*-construction, I have found conflicting judgments on whether long-distance readings are possible:

- viii.    %It has been 5 years since Maria believes that Peter (has) left.

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