Dutch past tense infinitives and the nature of finiteness

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1. Introduction

This paper is an attempt to define the concept of finiteness, by investigating the tense features of nonfinite clauses. Consequently, we will be much concerned with the question of whether infinitives may express tense. We argue on the basis of data from Dutch that infinitives in certain constructions express a [±PAST] opposition; the same conclusion can presumably be reached on the basis of similar phenomena in closely related languages like German and English, but in order to ensure a maximaly secure observational footing, I will mainly restrict attention to the Dutch facts.

We argue (in line with Hoffmann 1966:8, Palmer 1974:54-55, Landau 2004:838, Stowell 2006) that the feature [PAST] in infinitives is expressed by perfective morphology, as in English (1).

(1) John claims to have been asleep when I came in

The argument is therefore preceded by an analysis of perfectivity, more particularly of the present perfect in Dutch, largely on the basis of McCoard (1978), Vlach (1993), Kiparsky (2002) and Musan (2002) on English and German. The objective of this analysis is to isolate properties of the present perfect that are not ascribable to tense and hence must be taken to define the perfect. This allows us to test whether perfective infinitives (in all cases) are tenseless verbal constructions expressing pure perfectivity, or not.

It should be pointed out at the start that I do not intend to claim that the perfect infinitive is *always* an expression of past tense. Clearly, in (2) the infinitive simply expresses perfectivity (to be defined below):

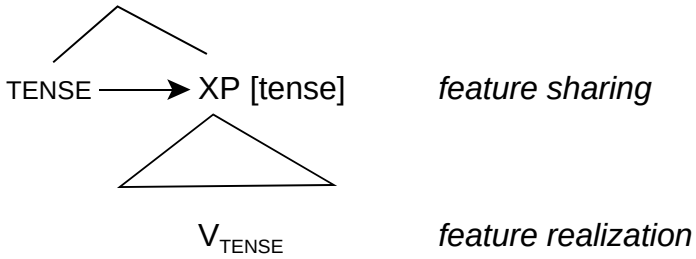
(2) John expects to have finished the book by noon tomorrow

My analysis is based on an important premise, namely that morphosyntactic categories (such as number, tense, negation, etc.) are introduced by abstract morphemes (often called 'functional heads'), not by the concrete morphological endings of lexical items. Inflectional morphology is the expression of agreement between lexical items and these functional categories. In terms of the derivation of a clause, where elements are merged in a bottom-up fashion creating pairs of constituents, we say that a dependent category acquires the relevant features in the course of the derivation, and realizes them in the morphology of one of its terms (cf. Zwart 2006). In the model of the grammar that this presupposes, the morphological component is located between narrow syntax and phonology, i.e. is part of a Spell-Out procedure (much as in Halle and Marantz 1993), which uses the morphosyntactic features of the items offered for spell-out to select the best candidate form from the lexical paradigms. Infinitives have a seriously impoverished paradigm in the Indo-European languages, offering few options for the realization of morphosyntactic features. From this perspective, the question to be answered is whether the simple-perfect opposition available in the infinitival paradigm

is used only for the expression of the feature [PERFECT], or also for the feature [PAST].

The model of morphosyntactic feature marking implied here is illustrated in (3):

(3)



In connection with this, it is a potentially significant fact that languages may realize clausal tense features on nonverbal constituents, as described in Nordlinger and Sadler (2004a, 2004b) and Haude (2004). Thus, in Lardil, the object is marked for future tense just like the verb:

(4) Ngada bule-thur yak-ur (Lardil)
I catch-FUT fish-FOBJ
'I will catch the fish.' (Hale 1997:36)

This fact can be accommodated as a function of the mechanism of feature realization on a term of the dependent category (*XP* in (3)).

Consequently, we will say that a clause is tensed if it realizes a [TENSE] feature opposition in the morphology of any of its terms.

2. The Dutch perfect tense

Dutch has two simple tenses, PRESENT and PAST, and a complex PERFECT tense formed by an auxiliary (*hebben* 'have' or *zijn* 'be') and a perfect participle formed with the aid of a prefix *ge-* and a suffix *-d/-en* (where *-d* may be devoiced). The auxiliary itself may show present or past morphology, yielding the PRESENT PERFECT and the PAST PERFECT, respectively:

(5)

wandelen 'walk'	SIMPLE TENSE	PERFECT TENSE	
PRESENT	wandel-t walk-PRES.3SG	heef-t have-PRES.3SG	ge-wandel-d GE-walk-D
PAST	wandel-de walk-PAST.SG	had have:PAST.SG	ge-wandel-d GE-walk-D

In discussing the use of these tenses, we distinguish (following Kiparsky 2002:115):

(6) a. E (event time, the time during which the event unfolds)
b. R (reference time, the time to which adverbs refer)
c. P (perspective time, the "now" of temporal deixis)

(P is somewhat similar to the speech time, but allows more flexibility needed for things

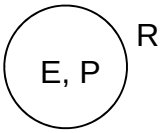
like the historical present; I will sometimes refer to it as the 'here and now'.)

In the unmarked case, represented by the PRESENT tense in Dutch (and English), both the event time and the perspective time are included in (⊆) the reference time:

(7) PRESENT E ⊆ R
P ⊆ R

This can be represented graphically as in (8), where the reference time is represented by the circle:

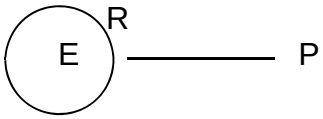
(8)



The past, then, is marked by positioning the reference time before the here and now (indicated by the dash in (9)), while still including the event time:

(9) PAST R—P
E ⊆ R

(10)



The following sentences illustrate:

(11) a. Jan slaap-t
John sleep-PRES.3SG
'John is asleep.'

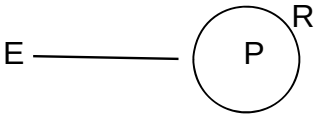
b. Jan sliep / *slaap-t *toen ik binnen kwam*
John sleep:PAST.SG/PRES.3SG when I in come:PAST.SG
'John was asleep when I came in.'

In (11b), the reference time is indicated by the adverbial modifier in italics. In what follows we will refer to the situation in (9)/(10) as indicating cotemporaneity with a reference point in the past, the hallmark of the past tense in Dutch.

In Kiparsky's characterization, the perfect differs from the past in locating the event time prior to the reference time, which includes the here and now:

(12) PRESENT PERFECT E—R
R ⊆ P

(13)



As a result, the present perfect in (14) conveys that at the here and now, the sleeping event is over:

(14) Jan heef-t ge-slap-en
John have-PRES.3SG GE-sleep-N
'John slept.'

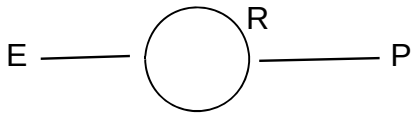
In (14), there is an implicit reference time around the here and now. Making the reference time explicit requires that it should not precede the here and now:

(15) * Jan heef-t ge-slap-en *toen* *ik* *binnen* *kwam*
John have-PRES.3SG GE-sleep-N when I in come:PAST.SG
'John slept when I came in.'

Finally, the PAST PERFECT shifts the reference time back w.r.t. the here and now, just like the past, while maintaining the anteriority of the event time w.r.t. the reference time:

(16) PAST PERFECT E—R
R—P

(17)



Thus, in (18), the reference time indicated by the adverbial in italics is located in between the event time and the here and now:

(18) Jan had ge-slap-en *toen* *ik* *binnen* *kwam*
John have:PAST.SG GE-sleep-N when I in come:PAST.SG
'John had slept when I came in.'

For a proper understanding of the nature of the perfect, it should be noted that English and Dutch differ slightly, but significantly, in the way the anteriority of the event time w.r.t. the reference time is understood. In particular, the event expressed by a perfect stretches up to the here and now in English, but not in Dutch (or German, witness Pancheva and Von Stechow 2003:475). This is illustrated by the pair in (19).

(19) a. I have lived here for years (*but not anymore)
b. Ik heb hier jaren ge-woon-d (maar nu niet meer)
I have:PRES.1SG here years GE-live-D but now not anymore
'I have lived here for years (, but not anymore).'

In Dutch, any event that runs up to the here and now is rendered by the present tense:

(20) Ik woon hier al jaren (*maar nu niet meer)
I live:PRES.1SG here already years but now not anymore
'I have lived here for years (, but not anymore).'

One interpretation of this difference would be to say that Dutch lacks what Iatridou et al (2001) term a *U-perfect*. A U-perfect (universal perfect) locates the event in an

interval which is called the perfect time span, whose right boundary (RB) is the here and now (in the present tense) and whose left boundary (LB) is provided by a particular adverbial (e.g. *since*...), such that the event holds throughout the perfect time span. The U-perfect contrasts with the *E-perfect* (a variety of uses including the existential perfect and the experiential perfect), where the event is merely included in the same perfect time span.

Iatridou et al (2002) discuss various tests that bring out the U-perfect. A perfect construction without adverbials is invariably interpreted as an E-perfect, making the U-perfect a marked category. Adverbials of the type of *always* bring out the U-perfect (21), as do fronted *for*-phrases (22):

(21) I have always lived in Boston

(22) For two weeks, John has been in Boston

In (21), a continuation like *but now I live in Cambridge* is impossible, showing that the eventuality of living in Boston runs up to the here and now. In (22), an E-perfect reading where John has been in Boston only intermittently (as in *John has been in Boston on several occasions*) is impossible. Also, the U-perfect fails to trigger the simultaneous reading of an embedded past tense (the 'sequence of tense effect', where the embedded past is interpreted as cotemporaneous with the reference time of the matrix clause)(Brugger 1997). In (23), where *always* triggers the U-perfect, *was* can only be interpreted as locating the eventuality of Mary's being brilliant as being in the past w.r.t. the claiming event:

(23) John has always claimed that Mary was brilliant

In contrast, the E-perfect of (24) allows the reading where Mary's being brilliant is cotemporaneous with the claiming event:

(24) John has occasionally claimed that Mary was brilliant

In Dutch, the counterparts to (21) and (22) fail to force a reading where the event runs up to the here and now:

(25) Ik heb altijd in Boston ge-woon-d
I have:PRES.1SG always in Boston GE-live-D

maar nu woon ik in Cambridge
but now live:PRES.1SG I in Cambridge

'I have always lived in Boston, but now I live in Cambridge.'

(26) Twee weken is Jan in Boston ge-wees-t
two weeks be:PRES.3SG John in Boston GE-be-D

maar nu is hij terug
but now be:PRES.3SG he back

'For two weeks, John has been in Boston, but now he is back.'

Also, a perfect construction with an *always* type adverb does trigger the sequence of tense effect in an embedded clause (where the event of Mary's being brilliant is not in the past w.r.t. the event of John's saying):

(27) Jan heeft altijd ge-zeg-d dat Marie briljant
John have:PRES.3SG always GE-say-D that Mary brilliant

was
be:PAST.SG

'John has always claimed that Mary was brilliant.'

In short, the Dutch perfect tense locates the right boundary of the perfect time span not in but before the here and now.

The relevance of the perfect time span lead Iatridou et al. to a different characterization of the perfect from the one presented above, not based on the concept of anteriority, but on the relation of the event to the perfect time span. However, since it is impossible to show that the perfect time span in Dutch runs up to the here and now, it follows as a defining characteristic of the perfect in Dutch that the perfect time span precedes the here and now. Then regardless of whether the event is included in or holds throughout the perfect time span, anteriority appears to remain the characterizing property of the Dutch perfect.

3. Aspect

A common view of the Germanic perfect is that it is composed of two parts, a tense part (PAST or PRESENT), and an aspect part (PERFECT). 'Aspect' here is a confusing term, as it refers neither to SITUATION ASPECT (yielding the aspectual classes of state, activity, achievement and accomplishment) nor to VIEWPOINT ASPECT (distinguishing between events presented as completed—'perfective'—or ongoing—'imperfective'), but to the relation of the event to the perfect time span of Iatridou et al. (2001) (cf. Pancheva and Von Stechow 2003:472).[1]

It is important to note here that since the perfect time span in Dutch and German need not run up to the here and now, there is no real requirement on the size of the time span, and hence neither on the punctual or durational character of the event. It follows that the time span may be described by adverbials like *yesterday*, a well-known impossibility in English:

(28) Ik heb hem gisteren ge-zie-n
I have:PRES.1SG him yesterday GE-see-N
'I saw him yesterday.'

The impossibility in English of combining the present perfect with time adverbials making the anteriority of the event explicit has been referred to as the 'present perfect puzzle' (Klein 1992). The key observation that the difference between English and Dutch/German in this respect is related to the requirement, particular to English, that the

[1] The prefix *ge-* was originally a completive particle (Van Swaay 1899: 37, 44), but the perfective participle lost its meaning of completive aspect early on in the development of Dutch (Van Dijk 1998).

event referred to by the present perfect runs up to the here and now is already found in Poutsma (1926:257), and more recently in Kiparsky (2002:128) and Pancheva and Von Stechow (2003:470).

Musan (2002: 118, 121) describes adverbs like *yesterday* as used in (28) as modifiers at the participle level, i.e. adverbs describing the perfect time span including the event referred to by the verb phrase. Used in this way, the adverb does not refer to the reference time (cf. (6b)). When an adverbial does refer to the reference time, as in (15), the present perfect cannot be used. Note that adverbs like *gisteren* 'yesterday' are apparently ambiguous: in (29) the most natural reading of the adverb is that it refers to the reference time, and hence the past tense is used.

(29) Gisteren was het mooi weer
yesterday be:PAST.SG it nice weather
'The weather was nice yesterday.'

It appears that the Dutch perfect aspect in the sense discussed here (relating the event to a time span) is really anterior tense: if adverbs of the type of *gisteren* in (28) are correctly characterized as time span describing, not as referring to the reference time, the event referred to by the present perfect invariably precedes the reference time (cf. (12)-(13)).

We find one further characterization of the perfect in the literature, namely that it entails the existence of a state resulting from the event to which the perfect refers. This state is called a Consequence by Vlach (1993:260) and a POST-STATE by Musan (2002:34). In Musan's (2002:26) characterization, the present perfect in fact denotes a post state of the verb phrase, holding at the here and now (paraphrased somewhat). I believe this post-state denotation is simply a function of the anteriority of the event time to the reference time including the here and now. By the same token, the past tense does not denote a post state, since the reference time in the past tense includes the event time.

We conclude, then, that the defining property of the Dutch perfect is ANTERIOR TENSE.

4. Past vs. perfect

This section illustrates in some more detail the differences between finite past and perfect tense in Dutch. The examples provide a range of test contexts for identifying past and perfect tense usage.

4.1 Cotemporaneity with a reference point in the past

The present perfect, marking anterior tense, cannot be used to express cotemporaneity with a reference point in the past. In (30), the reference point is provided by the adverbial clause in italics:

(30) Jan beweert [dat hij **sliep / *ge-slap-en heeft**
John claims that he sleep:PAST / GE-sleep-N have:PRES.3SG

toen de telefoon ging]
when the phone go:PAST.SG

'John claims that he was asleep when the phone rang.'

Changing the auxiliary *heeft* into its past tense form *had* restores grammaticality, but fails to yield the intended reading of cotemporaneity with the reference point in the past. Instead, the interpretation would then be that the sleeping took place prior to the moment that the phone rang (i.e. anterior tense w.r.t. a point in the past).

4.2 Ongoing event in the past

The present perfect cannot be used to refer to an ongoing event in the past.

(31) a. Jan beweer-t [dat hij het boek las]
John claim-PRES.3SG that he the book read:PAST.SG
'John claims that he was reading the book.' (reading = ongoing)

b. Jan beweer-t [dat hij het boek ge-lez-en heeft]
John claim-PRES.SG that he the book GE-read-N have:3SG
'John claims that he has read the book.' (reading = finished)

In (31), there is an understood reference point in the past (which might be made explicit by a similar adverbial modifier as in (30), and only the past tense can be used to convey that the event of reading is included in the reference time in the past. The contrast in (31) then reduces to the fact that the present perfect cannot be used to express cotemporaneity with a reference point in the past.

Turning the present auxiliary *heeft* into its past tense counterpart *had* again expresses anteriority w.r.t. the reference point in the past, locating the event of reading in a perfect time span prior to the reference time.

4.3 The 'accessibility' reading

The accessibility reading arises when the time frame associated with one event is included in that of another (De Vuyst 1985). The present perfect fails to yield the accessibility reading. In (32), the time frame of the adverbial clause is included in that of its matrix clause (i.e. the explosion took place during the playing), and the simple past must be used:

(32) a. Jan speel-de viool *toen de bom ontplof-te*
John play-PAST.SG violin when the bomb explode-PAST.SG
'John was playing the violin when the bomb exploded.'

b. # Jan heeft viool ge-speel-d *toen de bom*
John has:PRES.3SG violin GE-play-D when the bomb

ontplof-te
explode-PAST.SG

not: ‘John was playing the violin when the bomb exploded.’

According to De Vuyst (1985), (32b) is not ungrammatical, but it allows only a reading where the playing follows the explosion directly (what might be called the 'attaca reading'). We can understand this if the adverbial clause functions as a participle level modifier in this case, comparable to *gisteren* in (28), except that the (punctual) adverbial modifier describes the left boundary of the perfect time span. On this analysis, the reference time in the attaca reading still includes the here and now, explaining the use of the present perfect.

The following contrast illustrates the same point. In (33a), the adverbial modifier describes the left boundary of the perfect time span, while the durative adverbial modifier in (33b) is most naturally interpreted as expressing the reference time in the past, blocking the present perfect:

(33) Jan heeft zijn aandelen ver-kocht
John have:PRES.3SG his stocks GE-sell:D
'John sold his stocks...'

a. ... zodra ze op 30 stond-en
as soon as they at 30 stand:PAST-PL
'...as soon as they did 30.'

b. * ... zo lang ze op 30 stond-en
as long as they at 30 stand:PAST-PL
'... while they did 30.'

In the context of (33b), the present perfect *heeft verkocht* has to be replaced by the simple past *verkocht*. (My impression is that this is a tendency, which is to be expected if the durative adverbial modifier can also be interpreted as describing the perfect time span, like *gisteren* 'yesterday' in (28).)

4.4 The lifetime effect

The lifetime effect entails that the event referred to lasted the entire stretch of time that the subject was alive. It arises with nonepisodic predicates in the past tense and is incompatible with the perfect (cf. Musan 1997).

(34) a. Scriabin was een genie
Scriabin be:PAST.SG a genius
‘Scriabin was a genius.’

b. ?? Scriabin is een genie ge-wees-t
Scriabin be:PRES.3SG a genius GE-be-D
‘Scriabin has been a genius.’

The lifetime effect can be explained if the particular interpretation that a property applies to an individual all his life requires cotemporaneity of the event time and the reference time. (34b) then is strange because *be a genius* is a nonepisodic (individual level) predicate and the use of the perfect implies that Scriabin was a genius only during the part of his life which is anterior to the reference time. This interpretation can only come about if Scriabin is still alive, as in (35) (although there has to be a pragmatic reason for using the present perfect over the unmarked simple present tense).

(35) Scriabin is altijd een genie ge-wees-t
Scriabin be:PRES.3SG always a genius GE-be-D
'Scriabin has always been a genius.'

4.5 The past-shifted reading

The past-shifted reading arises when the event of the embedded clause is located at a point in time prior to the reference point of the past tense matrix clause (Enç 1987, Stowell 1995). In (36), the past-shifted reference point is brought in by *daarvoor* 'before that', and the embedded verb hence refers to a point in time which is prior to the tense of the matrix clause. The present perfect cannot be used to express this past shifted reading:

(36) Jan zei [dat hij Chomsky *daarvoor* al
John say:PAST.SG that he Chomsky before that already

{ **ken-de / *ge-ken-d heeft** }]
know-PAST.SG / GE-know-D have:PRES.3SG

'John said that he already knew Chomsky before that.'

This can be understood since *daarvoor* denotes a reference point in the (shifted) past with which the embedded event is cotemporaneous. Again, the past tense auxiliary *had* for *heeft* would rescue the sentence, but the interpretation would then be that the knowing took place *prior* to the reference point in the past induced by *daarvoor* 'before that'. The perfect cannot refer to an event located at the past-shifted reference time.

5. The infinitival perfect

The following observations now show that the infinitival perfect may be used in those contexts which require the past and prohibit the perfect in finite clauses.

5.1 Cotemporaneity with a reference point in the past

Consider (37), the infinitival counterpart to (30).

(37) Jan beweer-t [ge-slap-en te heb-ben
John claim-PRES.3SG GE-sleep-N to have-INF

toen de telefoon ging]
when the phone go:PAST.SG
'John claims to have been asleep when the phone rang.'

Here, as in (30), the italicized adverbial *toen de telefoon ging* 'when the phone rang' marks the past reference time (i.e. R—P, the hallmark of the past tense), and the interpretation is such that the sleeping event is cotemporaneous with the ringing (i.e. E ⊆ R). Hence, unlike the present perfect, the infinitival perfect can be used to express cotemporaneity with a reference point in the past.

5.2 Ongoing event in the past

We saw in (31) that the present perfect cannot be used to refer to an ongoing event in the past. As (38) shows, the infinitival perfect can:

(38) Jan beweer-t [het boek ge-lez-en te heb-ben]
John claim-PRES.3SG the book GE-read-N to have-INF
'John claims that he was reading the book.'
'John claims that he has read the book.'

As the translations show, (38) is ambiguous between the perfective reading of the infinitival perfect (where the event of reading takes place during a time span preceding the reference time—which may or may not include the here and now) and the past reading (where the event of reading is cotemporaneous with a reference time preceding the here and now). On this last reading, (38) is parallel to (31a), where the finite past is obligatorily used.

5.3 The accessibility reading

We saw in (32) that the accessibility reading (where one event is included in the other) is not available with the present perfect. As (39) shows, it is with the infinitival perfect:

(39) Jan beweer-t [viool ge-speel-d te hebb-en
John claim-PRES.3SG violin GE-play-D to have-INF

toen de bom ontplofte]
when the bomb exploded

'John claims to have been playing the violing when the bomb exploded.'

In (39), the most natural interpretation is the one where the time of the explosion is included in the time of playing the violin. Again, the infinitival perfect is used to express cotemporaneity with a reference point in the past in a way that the finite perfect cannot. As expected, a nonfinite counterpart to (33b) also involves the perfect infinitive:

(40) Jan beweer-t [zijn aandelen ver-koch-t te heb-ben
John claim-PRES.3SG his stocks GE-sell-D to have-INF

zodra / zo lang ze op 30 stond-en]
as soon as/ as long as they at 30 stand:PAST-PL

'John claims to have started selling his stock as soons as they did 30.'
'John claims to have kept selling his stock while they did 30.'

This example again illustrates the ambiguous nature of the perfect infinitive, expressing nonfinite counterparts to both the simple past and the perfect.

5.4 The lifetime effect

We saw in (34) that the lifetime effect (where a property is said to hold of the subject all through his life, and the subject is no longer alive) is not available with the present perfect. As the interpretation of (41) shows, it is with the infinitival perfect.

(41) Scriabin word-t ge-acht
Scriabin become-PRES.3SG GE-consider:D

[een genie ge-wees-t te zijn]
a genius GE-be-D to be:INF

'Scriabin is considered to have been a genius.'

On its most natural interpretation, what is being considered in (41) is that Scriabin was a genius all his life and is now no longer alive. In other words, the infinitival perfect presents a straight counterpart to the finite past of (34a).

5.5 The past-shifted reading

We saw in (36) that the past-shifted reading (where the embedded event is interpreted as cotemporaneous with a reference time preceding the reference time of the matrix clause) is not available with the present or past perfect. As (42) shows, it is with the infinitival perfect.

(42) Jan beweer-de [Chomsky *daarvoor* al ge-ken-d
John claim-PAST.SG Chomsky before.that already GE-know-D

te hebb-en]
to have-INF

'John claimed to have known Chomsky already before then.'

In (42), the knowing event is presented as cotemporaneous with the reference time designated by the adverbial *daarvoor* 'before that', which locates the embedded clause reference time at a point prior to the reference time of the matrix event of claiming.

5.6 Conclusion

The observations in subsections 5.1-5.5 suggest that the infinitival perfect is used as a nonfinite counterpart to the simple past. In all cases, the infinitival perfect expresses cotemporaneity with a reference point in the past, which is crucially not made available by the matrix clause, but local to the embedded clause.

I would like to propose that these facts indicate the presence of a TENSE operator in embedded infinitival clauses. This tense operator can have the values [±PAST] just like in finite clauses. If [+PAST], the marked value, the verb is realized in the marked form of an infinitival perfect. Infinitival clauses, then, show a tense opposition in the morphology of the verb, brought on by the presence or absence of a past reference time designating adverbial, as the facts in (43) (redundantly) show:

(43) a. Jan beweer-t [rijk te zijn]
John claim-PRES.3SG rich to be:INF
'John claims to be rich.'

b. Jan beweer-t [rijk *(ge-wees-t) te zijn *voor*
John claim-PRES.3SG rich GE-be-D to be:INF before

de oorlog]
the war

'John claims to have been rich before the war.'

The opposition *te zijn* vs. *geweest te zijn* is functionally identical to the opposition between *is* and *was* in the finite counterpart to (43):

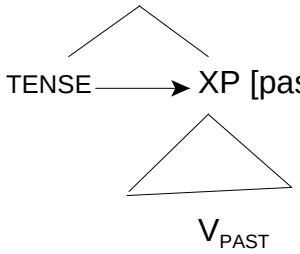
(44) a. Jan **is / *was** rijk
John be:PRES.3SG / be:PAST.SG rich
'John is rich.'

b. Jan **was / *is** rijk *voor* *de oorlog*
John be:PAST.SG / be:PRES.3SG rich before the war
'John was rich before the war.'

In (44b), a reference point in the past is introduced and the verb must shift to past tense morphology. In (43b) the introduction of the reference point in the past has a comparable effect, in that the simple infinitive must be replaced by the perfect infinitive.

Our hypothesis, then, is that infinitival clauses (may) contain a tense operator which shares its tense feature with its sister XP, as in (45) (cf. (3)). XP then realizes the tense feature on one of its terms (the verb). At spell-out, the morphological component replaces the verbal head and its features by a maximally suitable form from the Lexicon. In nonfinite clauses, the morphological component selects a form from the nonfinite verbal paradigm, where only two options are available: the simple infinitive and the perfect infinitive. The observations lead us to the conclusion that the (marked) perfect infinitive functions as the morphological realization of a nonfinite verb looking to realize the feature [PAST].

(45)



feature sharing

feature realization

6. An alternative analysis

This section discusses an alternative explanation of the observations in section 5, starting from the assumption that infinitives invariably lack tense (cf. Wurmbrand 2007). This alternative explanation capitalizes on the composite nature of the present perfect, containing a TENSE part (PRESENT) and an ASPECT part (PERFECT). From this perspective, one might suggest that the behavior of the infinitival perfect is explained by the absence of present tense in infinitives, leading to the hypothesis that perfect infinitives represent pure 'aspect'.

To assess this alternative, it has to be kept in mind that the term 'aspect' here refers to anteriority, i.e. to the relation between the event time and the reference time, as discussed in section 3. So on this alternative approach, one expects the perfect infinitive to represent pure anteriority, or, alternatively, to denote the existence of a post-state of an event holding at or around the P-time (the here and now).

The crucial distinction between past tense and anterior tense ('aspect') is the relation between the event time and the reference time. In the past tense, the event time is included in the reference time, while in anterior tense, the event (relates to a perfect time span which) precedes the reference time. The crucial examples, then, involve an adverbial making the reference time explicit. Consider again example (37), repeated here:

(37)

Jan	beweer-t	[	ge-slap-en	te	heb-ben
John	claim-PRES.3SG		GE-sleep-N	to	have-INF

toen	*de telefoon*	*ging*	]
when	the phone	go:PAST.SG	

'John claims to have been asleep when the phone rang.'

In (37), the reference time of the embedded clause is provided by the adverbial *toen de telefoon ging* 'when the phone rang'. We have seen that *toen de telefoon ging* has that function in (30), blocking the present perfect, which does not express cotemporaneity with the reference time. In (37), the event of sleeping is included in the reference time, not prior to it, as would be expected if the perfect infinitive expresses pure anteriority.

Importantly, the perfect infinitive *geslapen te hebben* 'to have slept' in (37) cannot be replaced by a simple infinitive:

(46) * Jan beweer-t [te slap-en
John claim-PRES.3SG to sleep-INF

toen de telefoon ging]
when the phone go:PAST.SG

'John claims to have been asleep when the phone rang.'

This shows that the simple infinitive is unsuitable for the expression of cotemporaneity with a reference point in the past, suggesting that the simple infinitive is either an unmarked nontensed infinitive, or in fact the realization of a nonfinite verb with the feature [PRESENT].

The difference between the two interpretations of the simple infinitive in (46) is that on one interpretation, simple infinitives express a tense feature, which then must be taken to be present in infinitives, and on the other, that simple infinitives express nothing in particular, leaving the question of the presence of [PRESENT] in infinitives open (though somewhat remote). However, if we turn to nominal infinitives, it becomes clear that simple infinitives can be made compatible with a reference point in the past:

(47) [Dat slap-en *toen de telefoon ging*]
DEM sleep-INF when the phone ring:PAST.SG

was een slecht idee
be:PAST.SG a bad idea

'Sleeping when the phone rang was a bad idea.'

The contrast between (46) and (47) may be understood if we assume, with Alexiadou (2001:59f), that nominal infinitives are tenseless, while infinitival complements may be tensed. In (47), then, the verbal head to be realized as *slapen* has no tense features to express, barring the selection of a tense-marking form from the lexical paradigms. Conversely, *slapen* in (46) is selected as the wrong form from the infinitival paradigm, marked [PRESENT], where a form marked [PAST] was requested.

Nominal infinitives can express pure anteriority, however, as (48) illustrates:

(48) [Dat ge-slap-en heb-ben *toen de telefoon ging*]
DEM GE-sleep-N have-INF when the phone ring:PAST.SG

was een goed idee
be:PAST.SG a good idea

'To have slept when the phone rang was a good idea.'

Here *geslapen hebben* refers to an event of sleeping which precedes the reference time (still indicated by the adverbial *toen de telefoon ging* 'when the phone rang') and leads to the post-state of having slept holding at the reference time. This shows that anteriority in infinitives works exactly as in finite clauses: there is a feature [PERFECT] (anterior tense) which is realized by perfective morphology and interpreted as anteriority. Since the anteriority interpretation is absent in the infinitival complement in (37), the perfective morphology here cannot be taken to realize [PERFECT] but must be taken to realize

[PAST].

This argument showing that the infinitival perfects in infinitival complements express tense rather than 'aspect' can be repeated for all the facts observed in section 5. For example, if the lifetime example (41), repeated here, expressed anteriority rather than past tense, we would expect the funny reading of (34b) to be forced upon us, contrary to fact.

(41) Scriabin word-t ge-acht
Scriabin become-PRES.3SG GE-consider:D

[een genie ge-wees-t te zijn]
a genius GE-be-D to be:INF

'Scriabin is considered to have been a genius.'

As will be recalled, the reading of (34b) implies that Scriabin is still alive, contrary to fact. This reading is crucially a function of the anteriority of the perfect time span to the reference time: in order for the perfective reading to be consistent with the nonepisodic character of the predicate, part of Scriabin's life should follow the here and now. If perfect infinitives express pure anteriority, the same marked reading should result.

We can level a further argument against the pure anteriority hypothesis. In the examples (32) and (39) illustrating the accessibility reading enabled by the past tense, it was noted that infinitival perfects likewise enable the accessibility reading. Another example illustrating this fact is in (49), crucially using the mutative verb *lopen* 'walk'.

(49) Jan liep naar huis *toen de bom ontplof-te*
John walk:PAST.SG to house when the bomb GE:explode-PAST.SG
'John was walking home when the bomb exploded.'

In (49), the walking event and the exploding event are cotemporaneous. As is well-known, mutative verbs allow formation of the perfect with both *have* and *be* type auxiliaries:

(50) a. Jan is naar huis ge-lop-en
John be:PRES.3SG to house GE-walk-N
'John walked home.'

b. Jan heeft naar huis ge-lop-en
John have:PRES.3SG to house GE-walk-N
'John walked home.'

The difference is that with *be* (50a), the event is resultative, implying a post-state at which Jan is home, whereas with *have* (50b), the event is durative, describing an ongoing event of walking (Hoekstra and Mulder 1990:8).

Now if the infinitival perfect expresses pure anteriority (implying a post-state holding at the reference time), we expect the perfect in the infinitival counterpart to (49) to be formed with *zijn* 'be'. If however the infinitival perfect is to be interpreted as a nonfinite past tense form, expressing cotemporaneity with a reference point in the past, the resultative interpretation is not available. Since the walking event and the exploding event are cotemporaneous, we would then expect the durative perfect to be used. The

relevant observation is presented in (51):

(51) Jan beweer-t naar huis ge-lop-en te { heb-ben / *zijn }
John claim-PRES.SG to house GE-walk-N to have-INF / be:INF

toen de bom ontplof-te
when the bomb explode-PAST.SG

'John claims that he was walking home when the bomb exploded.'

As can be seen, the perfect infinitive must be formed with *hebben* 'have', yielding the durative rather than the resultative reading, and indicating that the infinitival perfect does not express pure anteriority.

These arguments suffice to dispell the alternative analysis of infinitival perfects as expressing pure anteriority. However, there is one discrepancy between infinitival perfects and finite pasts that is unexpected from the perspective of the hypothesis contemplated here, namely that infinitival perfects may express nonfinite past tense. This is the subject of the next section.

7. Sequence of tense effects

Consider the sentence in (52):

(52) John said [that he was sick]

In (52), both the matrix verb *said* and the embedded verb *was* are in the past tense form. For the matrix verb, this simply means that there is a reference time preceding the here and now which includes the saying event (cf. (10)). But the past tense verb in the embedded clause can be interpreted in one of two ways:

(53) i. the simultaneous reading: the event of being sick is cotemporaneous with the event of John's saying

ii. the past-shifted reading: the event of being sick precedes the event of John's saying

It may be observed that in the past-shifted interpretation the embedded verb behaves like a genuine past tense verb, in the sense that it functions exactly as would a past tense verb in the complement of a nonpast tense matrix verb:

(54) John claims [that he was sick]

In contrast, the embedded verb on the simultaneous reading appears to behave more like a present tense verb, in the sense that the tense interpretation of the embedded verb appears to be connected with that of the matrix verb:

(55) John says [that he is sick]

In fact, the simultaneous reading is more marked crosslinguistically, and languages

often resort to the use of a present tense verb to express it (Ogihara 1995:668).

The observation that concerns us here is that the perfect infinitive only yields the past-shifted reading, not the simultaneous reading (but see Stowell 2006 for examples of perfect infinitives yielding the simultaneous reading in English):

(56) Jan beweer-de [ziek te zijn ge-wees-t]
John claim-PAST.SG sick to be:INF GE-be-D
'John claims that he was sick.' (✓past shifted / *simultaneous)

The simultaneous reading must be expressed by the simple infinitive:

(57) Jan beweer-de [ziek te zijn]
John claim-PAST.SG sick to be:INF
'John claims that he was sick.' (✓simultaneous)

The difference between finite past tense forms and infinitival perfect forms may be taken as an indication that the infinitival perfects, after all, do not express the feature [PAST].

The sequence of tense effect has received various analyses and explanations in the literature. The main problem to be accounted for seems to be the mismatch between the past tense morphology and the nonpast interpretation of the embedded verb. It is clear that the nonpast interpretation of the embedded verb requires some kind of connection between the main and embedded clause. If we follow Ogihara (1995) on this, the tense of the embedded clause is dependent on that of the matrix clause because of the nature of the verb of saying in the matrix clause, yielding an unmarked interpretation of the embedded clause event as being included in the same time frame as the matrix clause event. This suggests that the embedded clause does not have its own perspective time (P-time).

As we have seen, the present and the past are alike in that both involve cotemporaneity of the event time and the reference time. Where the present and the past differ is in the relation of the reference time to the P-time (the here and now). But if the embedded clause in a sequence of tense context lacks a P-time, past and present can no longer be distinguished. I would like to suggest that in the absence of a P-time of the embedded clause, the embedded clause lacks the feature PAST and receives a default underspecified tense feature.

It follows that the embedded past tense form is not a genuine past, i.e. the morphological realization of a verb expressing the feature [PAST]. Hence, we do not expect the infinitive in (57) to come out as an infinitival perfect. In the past-shifted example (56), on the other hand, the embedded clause does have its own P-time, so that the tense of the clause may be characterized as [PAST] if the reference time precedes the P-time, and hence the finite verb comes out as a past tense form, and the nonfinite verb as an infinitival perfect.

See Kiparsky (2002:122f) for a slightly different execution of the same idea, assuming the embedded clause in a sequence of tense context to have the tense properties of the present (i.e. E and P both included in R), where the appearance of the past is a special morphological adjustment rule applying when the P of the embedded clause precedes the P of the main clause. While this leaves open the question why the infinitive is not similarly adjusted, the fact of the matter remains that the past tense morphology in sequence of tense contexts does not express the feature [PAST], and our hypothesis, stating that the infinitival perfect expresses the feature [PAST], in no way leads us to the conclusion that it should also appear in sequence of tense contexts.

Other observations also suggest that the infinitival perfect in Dutch may not be used as a nonfinite counterpart to other quasi-past verb forms either. One such quasi-past is used in the common and productive childplay register, where the children's metalevel comments on their own play are invariably in the past:

(58) *childplay register*

Ik	was	de vader	en	jij	was	de moeder.
I	be:PAST.SG	the father	and	you	be:PAST.SG	the mother

Ja.	En ik	had		een hond	en	daar
yes	and	I	have:PAST.SG	a dog	and	DEM

was	jij	bang	voor.	
be:PAST.SG	you	afraid	for	

'[We play that] I am the father and you are the mother. Yes, and [we play that] I have a dog and you are afraid of it.'

To the extent that one can have intuitions on this, it seems to me that nonfinite counterparts to these quasi-past forms would not take the form of infinitival perfects:

(59) *hypothetical childplay register*

Ik	dacht	bang	te	zijn	(	*ge-wees-t)
I	thought	afraid	to	be:INF		GE-be-D

'[We play that] I figured that I was afraid.'

It is clear that the finite past forms in the childplay register must receive a different account from the regular past tense forms, not involving a precedence relation between the reference time and the here and now.

Past forms in Dutch are also frequently used in various irrealis contexts:

(60)

Ik	wou	dat	ik	rijk	was
I	want:PAST.SG	that	I	rich	be:PAST.SG

'I wish [lit. wished] I were rich.'

(61)

Was	ik	maar	rijk !	
be:past.sg	I	but	rich	

'If only I were rich!'

(62)

Als	dat	eens	kon !
if	DEM	once	can:PAST.SG

'If that were possible !'

In most cases, such as the counterfactual conditional in (62), these uses are restricted to finite clauses. However, (60) may be embedded as a nonfinite clause (63), and (64) might be seen as a nonfinite counterpart to (61).

(63) Ik meen { te wil-len / *ge-wil-d te heb-ben }
I think to want-INF GE-want-D to have-INF

dat ik rijk was
that I rich be:PAST.SG

'I think I would like to be rich.'

(64) O, rijk te zijn (*ge-wees-t)
EXCL rich to be:inf GE-be-D
'O, to be rich !'

As the examples show, the irrealis past forms are not replaced by infinitival perfects in the nonfinite variants. However, since the irrealis forms are clearly not true past tense forms, it is not clear that the appearance of the infinitival perfects were to be expected.

On the other hand, it does seem to be the case that infinitival perfects feature as past tense forms in the jocular quasi-native speech attributed to native Americans and Africans in Dutch comics such as *Kleine Hiawatha* and *Sjors en Sjimmie*. In this artificial vernacular, no finite forms are used, and the nominative pronouns are replaced by accusatives, yielding expressions like:

(65) Mij bang zijn
I:ACC afraid be:INF
'I am afraid.'

As before, the relevant test cases involve contexts in which the perfect is excluded, such as lifetime sentences and other constructions where cotemporaneity with a reference point in the past is intended. A preliminary search yields hardly any useful examples, but as far as the author's intuitions go, they would come out with infinitival perfects rather than with simple infinitives, as in the constructed examples below.

(66) Hiawatha-s grootvader dappere krijger ge-wees-t zijn
Hiawatha-POSS grandfather brave warrior GE-be-D be:INF
'Hiawatha's grandfather was a brave warrior.'

(67) Sjimmie erg bang ge-wees-t zijn
Sjimmie very afraid GE-be-D be:INF
'Sjimmie was very much afraid.'

8. The present perfect puzzle

The phenomena discussed in the paper, showing a similarity between the infinitival perfect and the finite past, are reminiscent of some facts discussed in connection with the so-called present perfect puzzle (cf. Klein 1992).

The present perfect puzzle applies to the grammar of English, not Dutch or German, and can be stated as follows: given that the present perfect refers to an eventuality in the past (anterior tense), why cannot the exact location in time of the anterior eventuality be made explicit by a time adverbial like *yesterday* (cf. (68))?

(68) John has left Boston (*yesterday)

There are various aspects to the puzzle, having to do with language variation (the effect being absent from Dutch and German) and with particular restrictions of the effect within the grammar of English. The latter stipulate that the present perfect puzzle effect illustrated in (68) is absent in nonfinite clauses, as well as in the past perfect:

(69) John appears to have left Boston yesterday

(70) John had (already) left Boston yesterday when I arrived

The relevance of these English facts to the discussion at hand is that if the explanation of the contrast between (68) and (69) crucially relies on the absence of tense in the embedded infinitival, as has been suggested to me, the proposal contemplated here, according to which infinitival complements do contain a tense operator, yields the problem of how to account for the contrast in (68) and (69).

From the perspective of the present paper, however, the contrast between (68) and (69) is easily understood. We have argued at some length that the infinitival complement in sentences like (69) must contain a tense operator with the feature [PAST]. This makes the infinitival complement in (69) comparable to a finite clause with a simple past verb, where adverbs like *yesterday* may readily appear:

(71) John left Boston yesterday

The assumption that infinitival complements (may) have tense, then, yields a natural explanation for those aspects of the present perfect puzzle having to do with the contrast between (68) and (69).

From a comparative Germanic perspective, the very fact of English (68) is also problematic, given that its Dutch counterpart is perfectly acceptable:

(72)	Jan	heef-t	gisteren	Boston	verlat-en
	John	have-PRES.3SG	yesterday	Boston	GE:leave-D
	‘John left Boston yesterday.’				

The Dutch-English contrast is undoubtedly related to the contrast noted earlier, namely that the perfect time span in the English perfect runs up to the here and now, whereas the perfect time span in the Dutch perfect is merely anterior to the here and now (cf. Poutsma 1926:257 and the discussion around (28) above). This difference between such closely related languages is certainly interesting and in need of explanation, but really tangential to the issue at hand in this paper.

[END OF UNFINISHED DRAFT]

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