Evidentials and Aspect[1]

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Introduction

Abraham (e.g. 1990; 1998) has analyzed the restrictions on (infinitival) complements to modal verbs in English and German in terms of aspect. Deontic modals are assumed to have non-perfective complements, whereas epistemic modals have perfective ones (his term is terminative). Giorgi & Pianesi's (1997) work is relevant to aspectual selection since they argue that bare (eventive) infinitives without -e(n), as in English, are perfective but that infinitives with -e(n), as in German and Dutch, are not. They do not examine modal complements but their claim is incompatible with Abraham's since, due to the perfectivity of English infinitives, only epistemic modals would be able to occur.

In this paper, I examine Giorgi & Pianesi evidence for their views on the differences between English and German: (a) Perception verb complements in English are perfective but they are not in Dutch and German, and (b) the simple present in English cannot be used to express present tense. I show that there are several problems with these parts of Giorgi & Pianesi's analysis in addition to the one with modals. First, the infinitival ending in English is lost several centuries before the infinitive becomes perfective, as defined in Giorgi & Pianesi, and before the simple present ceases to be used. Second, eventive (bare) infinitives are not always interpreted as perfective in Modern English. They only are as complements to stative perception verbs, not as complements to modals (mentioned above), or non-stative perception verbs. This means stative perception verbs such as *saw* are more like evidential modals whereas the non-stative variety in English and perception verbs in Dutch are 'regular' verbs. Such an analysis accounts for a number of typological and historical phenomena, as well as for the difference in constituent structure between bare infinitives and -*ing* constructions (as discussed in Akmajian 1977), and restrictions in complementation to perception verbs. The structure I suggest also reflects the fact that in many languages evidentials and perfectives are related, in accordance with what Abraham (1998; 1999) argues.

The main differences between Modern English on the one hand and similar languages on the other now emerge as (a) *saw* is more grammaticalized in the former than in the latter[2], (b) the contents of ASP in Modern English depend on the affix, whereas in Germanic, ASP is ambiguous, and (c) as argued by traditional grammarians, the real changes are caused by the availability of -*ing*, and perhaps by the loss of aspectual markers. Around the same time that -*en* is lost, i.e. around

[2]I am limiting myself to visual perception verbs.

1400, *to* becomes reanalyzed as I. Hence, tense starts to become more prominent at the expense of aspect, but the effects of the aspectual system remain felt.

The outline is as follows. In 1, I sketch Giorgi & Pianesi's analysis of bare infinitives; and briefly describe the problems with this analysis. In 2, it is shown that complements to perception verbs continue to have non-perfective bare infinitives after the ending disappears. It is also shown that the use of the simple present continues long after. In 3, I provide an overview of the literature on ASP(ect), to be adapted in section 4. In the latter section, I also argue that there are two kinds of *see*, an evidential and a full verb, each with their own structure.

1 Are bare infinitives perfectives in English?

Giorgi & Pianesi (hence, G&P, 1997: 163ff.) argue that English bare (eventive) infinitives carry a perfective feature. The reason they need this feature is that their morphology does not differentiate them from nouns. G&P derive two empirical differences between a language such as English, without an infinitival ending, and languages such as German and Dutch, with an infinitival ending. First, they (1997: 163ff.) argue that the difference between (1) and (2) is due to it:

1. I saw/*see him cross the street.
2. Ik zag/zie hem de straat oversteken.

It is well-known (e.g. Quirk et al. 1985: 1206) that Modern English bare infinitives differ from those in other Germanic languages in that the event referred to by the infinitive in (1) must be completed. In Dutch, on the other hand, the infinitive in (2) can refer to the action in progress (or to the completed action). If, as G&P argue, English eventive infinitives are [+perfective], (1) cannot have an imperfective meaning. Instead, to indicate an incomplete action in English, the progressive is used, as in (3) and (4), not the bare infinitive, as in (1):

3. I see him crossing the street.
4. I saw her reading the book for hours.

Miller (forthcoming: 341) provides a good summary of other aspectual differences between (1) and (2), the former being a "genericized but telic event" whereas the latter is a "non-completive, particularized event[] in progress that can have duration". Languages as diverse as Russian and Lele, a Chadic language, make similar morphological distinctions to indicate perfective, as in (5) and (7) respectively, or non-perfective complements, as in (6) and (8) (Buzarovska 2000 for Russian; Frajzyngier 1996: 278-9 for Lele):

5. Ja videla kak Bob pereshel ulicu
   I saw if Bob cross-PF street
6. Ja videla kak Bob perehodil ulicu
   I saw if Bob cross-impf street
7. ng-gòl-i wàl tù

1SG-see-3M slaughter goat
`I saw him slaughter a goat'.
8. ng-gòl-í go jè wàl-dí kúlbà
1SG-see-3M COMP PROGR slaughter cow
`I saw him slaughter a cow'.

There are other indications that the infinitive in (1) is really perfective: (9) is not that great since the 'for hours' forces a durative reading, incompatible with the perfective, unlike its Dutch counterpart in (10):

9. ?I saw him read the book for hours.
10. Ik zag hem urenlang dat boek lezen.

As in other constructions, a perfective is typically triggered with definite objects, and imperfective with indefinite ones. Therefore, (11) should be worse in English than (12). It is, but only very marginally so, however:

11. ?I saw him read books.
12. I saw him read the book.

To jump ahead, I will agree with G&P that in (1), the complement is perfective but for a reason different from theirs.
    The second piece of evidence that G&P use is that eventives cannot occur in the simple present tense, as (13) shows, since they are perfectives and perfectives are bounded and the present is not. Instead, the progressive as in (14) is used:

13. *I eat right now.
14. I am eating right now.

The presence of [+perf] is compatible with the progressive which is bounded (G&P, p. 169). Stative verbs such as *know* and *see* are not associated with [+perf] since, like habituals, they are associated with a generic operator.
    Thus, according to G&P, there are two reasons for assuming English bare infinitives are perfective: the interpretation of (1) and the ungrammaticality of (13). If this account were correct, languages without the infinitival ending would always be expected to be like English in these two respects, and English bare (eventive) infinitives would always be expected to be perfective. Neither of these two prove to be correct, as I show in the next section.

2   Bare Infinitives: Infinitival endings and Perfectivity

In 2.1, I will argue that interpretations as in (1) are not dependent on the infinitival endings, since the change to the Modern English interpretation of (1) does not coincide with the loss of the ending,

and in 2.2, I show that neither does the ungrammaticality of (13).

2.1 Perception verb complements (hence PVCs)

In Old and Middle English (hence OE and ME respectively), the infinitive has an ending, but a present participle also occurs ending in -ande/-inde/-ende, as in (15) and (16), and later in -ing:

15. Lindisfarne, John 11,33
    se hælend ... seah hia hremende 7 uoepende
    'The savior saw her weeping and weeping'.
16. Guy of Warwick 5799
    He seye ... a grom cominde
    'he sees a man coming'.
    (Visser, p. 2344)

Many people argue that the present participle is not "a native idiom" but appears in texts that are translated from Latin, e.g. (15) is an interlinear gloss. Sentences such as these would have the same analysis as (3) in Modern English with *see* having a sentential complement. Their occurrence is not at issue. At issue is the infinitive with perfective meaning at the time that the ending is disappearing. Some people have argued that the difference in aspect between constructions such as (1) and (3) was already present in Late OE (see Zeitlin 1908: 72 for a nice list of examples of both). If that is the case, that would be problematic for G&P as well. I will only look at ME.

The ME bare infinitive constructions from Chaucer in (17) to (20) have imperfective interpretations, as in (2) above:

17. Chaucer, Knight's Tale, 1098
    The fairness of that lady that I see
    Yond in the gardyn romen to and fro
    Is cause of ... (Kerkhof 1966: 55)
18. Chaucer, Knight's Tale, 1220
    The deeth he feeleth thurgh his herte smyte.
19. Chaucer, Bk of the Duchess, 848-50
    I sawgh hyr daunce so comlily
    Carole and synge so swetely
    Laughe and pleye so womanly ...
20. LGW, Benson p. 594, 166-7
    But ... in hande I saw hym holde
    Two firy dartes ...

In Chaucer, who wrote at the end of the fourteenth century, both -e and -en endings occur, as they do in Modern Dutch where the -en ending is mainly pronounced -e. The ending is presumably pronounced in Chaucer, i.e. *smyte* in (18) rhymes with *Arcite*. There is also an -ynge after perception verbs, as in (21):

21.   Chaucer, LGW, Benson 624, 2196
       And saw his barge saylynge.

Miller (forthcoming: 352 ff.), based on arguments from Fischer (1995), argues that in Chaucer the aspectual difference is as in Modern English. Based on (17) to (20), this is unlikely.

After Chaucer, the infinitival ending changes, and this is when we would expect the loss of (19) and (20) and the increase of forms in *-ing*. Minkova (1991), citing a number of other scholars, argues that the ending is disappearing in the North from 1100 on but that "[b]y 1400 final unstressed *-e* had been abandoned in all parts of the country" (p. 30). Görlach (1990: 47) says that from 1400 onwards, the *-e* spelling is "arbitrary and optional" (see also Moore & Marckwardt 1951). Southworth (1947: 925) estimates that even in Chaucer the final infinitival *-e* is not pronounced in 82% of the cases. As mentioned in the introduction, this fits with the rise of I (cf. van Gelderen 1993; 1997a), and means tense is `taking over' the aspectual system at least for non-finites (cf. also Fischer 1992; 1995 who argues for ME that *to* expresses tense independence). In the fifteenth century *Paston Letters* (hence, PL), the infinitival ending *-en* is fairly rare: apart from *ben* `to be', there are perhaps 20 in a large corpus. In the PL, neither bare infinitive nor *-ing* is popular. The PL show that, after the endings are lost, no immediate changes with PVCs occur.

In More's English (Visser 1946-52), from the beginning of the 16th century, i.e. a century or so after the loss of the infinitival ending, some infinitives have a perfective meaning, as in (22) with *it*, but not all. (23) emphasizes the action through the adverb and Modern English would use *running*. This text has many *-ing* forms too (see Visser 1952: 810):

22.   Apol, 489 E 8
       She hard him boast it.
23.   Rich 71 C 1
       The fox ... saw him run so faste.
       (Visser, 1952: 761-2)

Thus, even though the infinitive has no ending, it can be used as a non-perfective.

An Early Modern English grammarian, Mulcaster, who writes an *Elementarie* in 1582, divides final -e into "soundeth or ... silent" (p. 111). The first category includes *me, see, we, agree, yee*, and *e* in Latin words, but the section is very short; the silent *-e* section is much longer (and talks about nouns as well as verbs). Silent *-e* is said to have an effect on the length of the vowel preceding it, as in *made, cure*, and is used in many other situations, e.g. in *cause, excuse, deceiue, loue, moue*. Thus, Mulcaster's description shows that Elizabethan English infinitival endings are not pronounced differently from Modern English. Franz (1909: 21) says the infinitival *-e* is used "ziemlich prinziplos" in Shakespeare's time, but *-en* is never used. This loss of *-e(n)*, however, does not seem to force an increase in the use of *-ing*, since very few complements as in (24) and (25) occur. Checking all 852 instances of *heare* in the First Folio edition of 1623, only five occur with *-ing* complements, two in *Hamlet*, as in (24) and (25), two in *King Lear*, and one in *First Henry IV*. Four of these have the same verb in the complement:

24.   Hamlet, III, i, 55

I heare him comming.
25.   Hamlet, III, iv, 7
        I heare him coming.

Instances of bare infinitival complements after *hear*, as in (26) and (27), are very frequent. After *heard*, the only complements are bare infinitives, as in (28) and (29), participles, as in (30), and *to*-infinitives, as in (31):

26.   Tempest, II, ii, 20
        And another storm brewing; I hear it sing in the wind.
27.   Troilus & Cressida I, ii, 244
        Har! do you not hear the people cry Troilus?
28.   Macbeth, II, ii, 16
        I heard the Owle schreame and the crickets cry
29.   Macbeth II, ii, 35
        Methought I heard a voyce cry 'Sleep no more'.
30.   Tempest I, i, 193
        hear these matters denied.
31.   Comedy of Errors, V, i, 26
        who heard me to deny it?

There are 2 *-ing* complements after *see/saw*, namely (32) and (33), but at least 10 bare infinitives, as in (34) to (36), and many past participles:

32.   AYLI III, IV, 52
        who you saw sitting by me on the turf.
33.   Macbeth, V, v, 37
        may you see it comming
34.   AYLI V, ii, 23
        see thee wear thy heart in a scarf
35.   Tempest III, i, 12
        She sees me work
36.   LLL IV, iii, 181
        see me write

Thus, in Shakespeare, there is no connection between the loss of *-en* and the perfective interpretation of the infinitive: the infinitive has lost its ending but it continues to be used as a non-perfective.

In conclusion to 2.1, the loss of *-en* cannot be shown to coincide with the bare infinitive becoming perfective. It is more likely that the infinitive remains ambiguous until gradually *-ing* is reanalyzed as imperfective marker.

2.2 The use of the simple present

There are two other problems for G&P's account, related to the use of the simple present. (a) The progressive is available in OE, i.e. is not introduced with the loss of *-en*: there is even no sudden increase of constructions such as (14). (b) The use of the simple past remains frequent after the loss of the infinitival ending. Modern Afrikaans presents a counterexample as well. It is a language without infinitival endings (e.g. *te drink, te se, te kom*) but one in which eventives can be in the present tense (*Nou dans die poppe*, Ponelis 1991: 187; Paul Roberge p.c.).

The ultimate reason for the increase of the progressive is not known - it occurs especially in the 19th and 20th centuries, see Scheffer (1975: 110ff.) - but it does not coincide with the demise of the infinitival ending. Mossé (1938, II, 2ff.), based on Streitberg, attributes the popularity of (14) to the demise of the aspectual system from the 13th century on. In OE and Germanic, the simple verb is durative, whereas verbs with prefixes (he calls them `preverbes') are not. One of the problems with this theory is that already in OE the *-ing/ende* form is alive and well, as (37) shows, especially with verbs of dwelling and movement (see also Pessels 1896; Raith 1951: iii, even though Jespersen 1931: 168 claims that the ME *-ing* is not a continuation of the OE one), and as (15) and (16) above show for PVCs. It continues from then on, as (38) shows:

37.   Beowulf 159
        ac se æglæca ehtende wæs
        but the monster pursuing was
38.   Chaucer, I 929
        We han ben waitynge
        `We have been waiting'.

The additional problem for G&P is that long after the *-en* disappears, the simple present persists. I first provide some ME examples. The ME data in (39) and (40) are similar to those in other Germanic languages, e.g. Swedish, Afrikaans, German, Dutch in (41), and OE in (42), since eventive presents occur. Chaucer, as shown above, most likely still has an infinitival ending and hence G&P cannot be proved or disproved before 1400:

39.   Chaucer, I, 3437
        What do ye, maister Nicholay
40.   Chaucer, I, 3763
        He sharpeth shaar and kultour bisily
41.   What doe je? Ik eet een appel.
        `What are you doing? I am eating an apple'[3].
42.   VP 11.6
        nu ic arisu cwið drihten

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[3]There is also a marked construction similar to the *-ing*:
        i.   Ik ben een boek aan het lezen
                'I am reading a book'.
This construction may have an ASPP with *aan het* in ASP. I will leave it out of the discussion.

`Now I rise up said the lord'. (Visser 663)

In the 15th century *Paston Letters*, i.e. after the infinitival ending is definitely lost, the special progressive is relatively rare (around 20 perhaps in a big corpus):

43. Paston #187 (1465)
    þer ys comyng, ..., more than a thowsand.
44. Paston #40 (1452)
    where the seid felechep is abydung.
45. Paston #336 (1469)
    syche mony that he is owyng.

These occur with the same verbs as in OE and most of those would not get -*ing* in Modern English, e.g. (44), perhaps indicating that it is not the same construction, in accordance with Jespersen (1931) as mentioned above. That would make the connection between loss of -*en* and introduction of -*ing* even more tentative.

The present is typically expressed as in (46) to (48), with the latter possibly being fossilized:

46. Paston #3 (1425)
    I send you
47. Paston #4 (1426)
    I make þis day a new apelle
48. Paston #3 (1425)
    I recomaunde me to you.

By the time of More, i.e. the early part of the 16th century, the progressive is "employed rather sparingly" (Visser 1946: 248), even though the infinitive has lost its ending. In Shakespeare, -*ing* is used on occasion, e.g. in (49), cf. also Franz (1909: 514). Visser (p. 662) says, about both More and Shakespeare that "at the time the choice between the two possibilities did not yet depend on any fixed principle". The simple present is used frequently, as in (50) to (52):

49. MWW, III, ii, 36
    Now she's going to my wife.
50. MWW, II, ii, 10
    Whither go you?
51. MWW, I, i, 155
    What say you, Scarlet and John?
52. MWW, II, ii, 75
    But what says she to me?

Concluding section 2.2, G&P account for the differences between Dutch (41) and Modern English (13) by assigning [+perf] to the English eventive. This explanation encounters empirical problems. Even as late as Shakespeare's time, long after the disappearance of -*en*, (50) to (52) are

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grammatical. I therefore suggest that this problem is independent of the ending, but depends on what is in ASP, as I'll argue in the next section.

3   The Reanalysis of -ing as ASP

What is the reason for the changes that bring about the Modern English interpretations of PVCs in (1) and (3) and the ban on eventive simple presents in (13), if not the infinitival ending? In this section, I argue that it is the reanalysis of -ing as checker of the imperfective feature in ASP, and a change of the unmarked aspect. In section 4, I argue that PVCs involve ASP. First, in 3.1, I look at some recent theories on ASPP, and then, in 3.2, I propose a possible historical scenario.

3.1   ASP

Since the splitting of the IP into AGRP and TP in the late 1980s, ASP has become a frequently used functional category, e.g. Tenny (1987), Speas (1990), Marácz (1990), van Gelderen (1993), Travis (2000), to mention but a few. Other names are used as well, sometimes indicating a similar entity, VoiceP, and Tr(ansitive)P in Jelinek (1997). Some recent accounts, for instance, Ramchand (1997) and Cowper (1999) have provided analyses using ASP for present tense constructions, and Felser (1999) has used ASP for PVCs. In this section, I briefly discuss the latter two accounts.

Cowper (1999: 218) argues that "languages choose either MOMENT (perfective) or INTERVAL (imperfective) as the unmarked representation of events ... In English the unmarked value of e is MOMENT, while in French it is INTERVAL. While English has inflectional morphology making sentences imperfective, French has inflectional morphology making sentences perfective". Cowper also needs a (universal) principle excluding two temporal points to be simultaneous, and a discourse anchor which is a point/moment. Since in French the simple present as in (53) denotes an interval, the constraint is not violated (the event takes place as the same time as the moment of discourse), whereas in the English translation in (54), it is, since the simple present is a moment and so is the discourse:

53.   Elle ecrit une lettre
54.   *She writes a letter

With special morphology, a marked form is possible, i.e. -ing in English indicates that e is INTERVAL. Cowper's account, unlike G&P's, does not give an independent reason why a language would have one choice unmarked over the other. For the purposes of this paper, however, I assume Cowper's theory over G&P's, since the latter's account of the infinitival ending causing the difference cannot be maintained, as shown in the previous section.

For PVCs, perception verb complements, Felser (1999, e.g. 124) uses an ASPP. She not only includes ASP, vP, and VP, but allows a second vP Specifier position to accomodate the object. She does not include an AGRoP, since checking of the object Case is against v from the outer specifier position. I will provide a structure for PVCs in section 4 which, like Felser, includes an ASPP to account for PVCs. Felser, however, focusses on what I will call experiencer perception verbs. I will give different analyses for experiencer and activity perception verbs, and will argue

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that only the latter have a structure similar to Felser's.

3.2 Changes in ASP

Turning to the historical changes involving ASP, it has often been assumed that OE and Old High German, etc. display more aspect than their modern offspring. Streitberg (1891) assumes that the German prefixes are perfectivizing. *Have* is not generally used for perfective in OE, but a prefix is. Brinton (1988: 202 ff.) argues that OE verbal prefixes indicate telicity, but that *ge-* has become "seriously over-extended" (p. 212) by ME. In Gothic, it is on occasion an independent morpheme (see Lenz 1886: 11). Mustanoja (1960: 446) writes that *ge-* remains productive as a perfectivizer "down to the 13th century". Its disappearance is due to Norse influence and occurs first in the North according to Mustanoja. Chaucer only uses a limited palatalized version in the poetry. Traugott (1972: 91) argues that the present perfect arose to replace *ge*. *For* retains its productivity "down to the end of the ME period". The verbal prefixes are replaced by particles and phrasal verbs extend their domain in ME and become less marked (Brinton 1988: 226).

Around 1400, *ge-* is lost completely as a marker of perfective in ASP. Is there a replacement, as Traugott suggests? I assume this is the point when the unmarked representation of events (see the discussion of Cowper 1999 above) is switching from INTERVAL to MOMENT. Around this time, the past participle ending, infinitival *to*, and increasingly in *-ing* are occupying ASP, each with a different interpretation. As a result, constructions such as (55) and (56), where *me* and *her* are the subjects of *sayd* and *told* respectively, become frequent for a while, as do constructions such as (57) to (59), see also (31) above:

55.   Chaucer F 1547 (Visser 1952: 761)
      And told hym as ye han herd me sayd.
56.   Chaucer, Troilus I 1009
      Whan Troilus had herd Pandare assented to ben his helpe. (Visser 1952: 894)
57.   Wyclif, Gen Vi 12
      Whanne God had seen the erthe to be corrupt.
58.   Bunyan, PP 144
      I see it to be so.
59.   Shak. Shrew I i 175
      I saw her coral lips to move.

The latter is a frequent construction from later ME on, and seems especially frequent in the 16th and 17th centuries, as in (58) to (59). In the early 15th century Pecock (Zickner 1900: 67), *see* is complemented by a bare infinitive only twice but by *to* 4 times and *forto* once. So, at the time the infinitival ending is disappearing, the *to*-infinitive expresses durativity for a while. This construction occurs with modals only if the modal is very far removed from the infinitive (Visser 1952: 590; 620). The past participle expresses perfective.

In the next section, I argue that PVCs involve ASPPs. I tacitly assume that progressives as in (14) do too, but will not go into that more than I have. In OE, the prefixes on the verbs determine perfectivity. As the prefixes disappear, *-ing* (and *to*) are reanalyzed as imperfective and for a while the past participle is a perfective.

4   Perception Verbs in Modern English and Dutch

There have been many analyses of PVCs, i.e. PVCs (Akmajian 1977; Guasti 1993; Felser 1999, Miller forthcoming, to name but a few). I will not review these. My account differs in that I argue that there are (at least) two kinds of PVCs since there are two kinds of perception verbs, and one of these is a modal. Thus, as in de Haan (1998), I argue that evidentiality and epistemic modality are connected in that in both belief in the truth of the statement is involved but that in the former the source of the information is emphasized whereas in the latter the speaker's attitude is.

4.1   Two kinds of see

As is well-known, perception verbs such as *see* are typically stative. Viberg (1983: 123) uses the term experiencer-based for these. As a result, the simple present is used in (60) rather than the progressive in (61):

60.   I see (the) mountains.
61.   ?I am seeing (the) mountains (as if for the first time).

As seen in (1), infinitival complements to these stative verbs are perfective. Not discussed in this connection in the literature, as far as I know, but crucial for my analysis below, is the occurrence (62) to (66), where the bare infinitive expresses duration, and perfectivity is not connected to the infinitive:

62.   Seeing her swim is exciting.
63.   I made them watch Michael swim (for hours).
64.   Gaskell, *Mary Barton* 31
        Mary watched the boatman leave the house. (from the OED)
65.   Martin took it, feeling himself surrender. (from Visser, 2251)
66.   We'd be hearing him holler for mercy. (from Scheffer 1975: 68)

So, when the perception verb is not a state, but an activity, or used in the progressive, as in (62) to (66), its bare infinitival complement need not be perfective. This is not explained in G&P's account.

I will argue that *see* is ambiguous between a non-stative reading, as in (62), and a stative reading, as in (1). The former obeys Cowper's constraint, in that the present tense needs to be specially marked by *-ing* in order to be grammatical. In the latter case, I argue *saw* is an (evidential) modal. It is not unusual for verbs of perception to grammaticalize into evidentials. I will refer to this process as grammaticalization as it involves the change from a lexical verb to a more auxiliary-like element. For instance, Gordon (1986: 75; 84) shows that in Maricopa, a Yuman language, *see* and *hear* can be either evidential or a full verb with a sentential complement. The non-stative perception verbs in English are not typically *see* but *watch, observe, look at,* and *perceive*. I'll come back to that later.

Thus, there is some evidence that (1) is different from (2) even though both involve bare

infinitival complements: an exclusively perfective reading in (1), an incompatibility with duration adverbs in (9), but not in (10), and a slightly marginal (11). However, this is only the case if the bare infinitive is embedded under a stative perception verb, as in (1). The structure I suggest for (1), (2), and (3) is (67), with *him* moving to Spec ASPP (for Case reasons presumably), and *oversteken* `cross' moving to ASP in Dutch, but in English *cross* only moves if it is imperfective and picks up - *ing*, not if *saw* is present:

67.
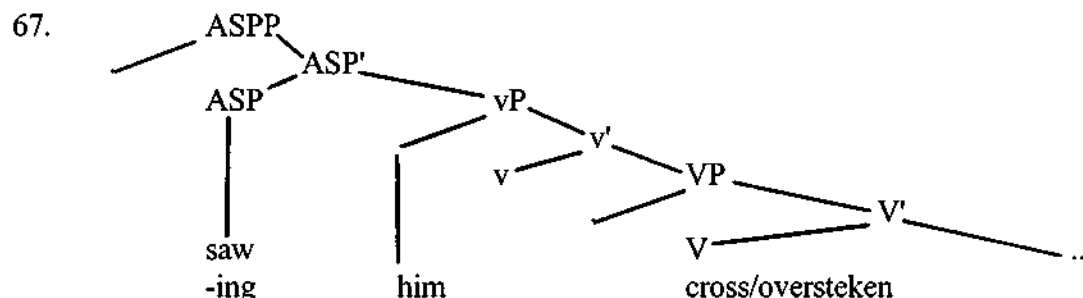
Thus, while agreeing with Felser (1999) that PVCs involve an ASPP, I argue that the static perception verb is in ASP. In (67), I include both vP and ASPP, but as Ramchand (1997: 216) argues it may be that vP is really ASPP and can hence be deleted. I won't go into that here.

Assume that in (67) ASP indicates ±boundedness/perfectivity, then Modern English has two options for ASP: either perfective *saw* or imperfective *-ing*. If *saw* is stative, it originates in ASP, as in (1), and then *cross* cannot have an independent aspect but is dependent on ASP. This use of *saw* is evidential and it is not surprising that it occurs only in the past. Abraham (1998) argues that "evidentiality is ... often triggered by the perfect or perfectiveness". Comrie (1976: 108-110) argues that the perfect is typical for the inferential evidential, not the direct evidence one. I see no reason to restrict it that way, and will assume that perfect can also be used for direct perception. In many languages, perception in the past is more grammaticalized than perception in the present. For instance, Turkish indicates evidentiality (direct vs indirect perception) in the past tense (see Slobin and Aksu 1982: 188), and Buzarovska (p.c.) reports that in Greek and Macedonian perception verbs in the past tense, i.e. as in (1), have a special infinitival complementation that makes them more grammaticalized into evidentials than the present tense ones. Barnes (1984: 259) shows that a verb with a visual evidential suffix is past unless specially marked.

The visual perception verb *see* can also be non-stative, and then it is a full verb higher in the tree with *cross* checking imperfective, as in (3), or perfective, as in (62). The tree would be as in (68), identical to (67) but with the higher VP showing:

68.

(-ing)see   ±pf him   cross
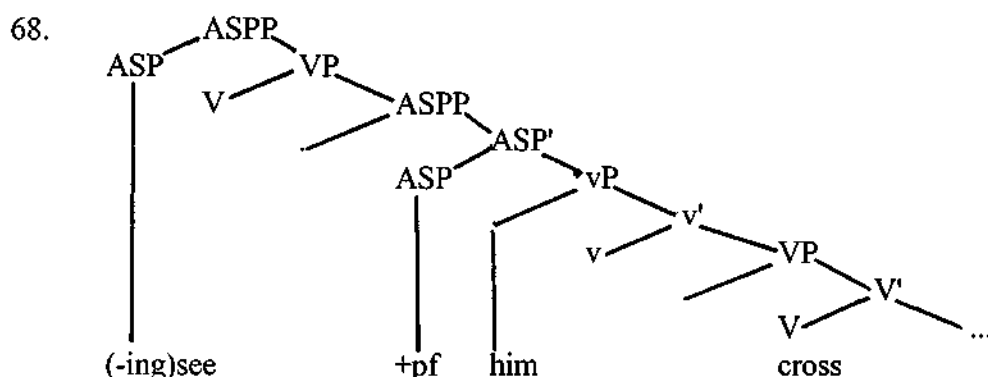
Since *-ing* is not available in Dutch, ASP is ambiguous. Therefore, *oversteken* `cross' in (2) can have independent aspect which it checks in ASP. Felser (1999: 205ff.) argues that Dutch *aan 't*, in sentences such as (69), and German *am* are ASP projections as well. My native speaker intuition about sentences such as (69) is that they are very marginal:

69.   ??Ik zag hem (`Harry Potter') aan het lezen
        I saw him Harry Potter on the reading
        `I saw him reading Harry Potter'.

It is interesting that historically many *-ing* forms in English derive from a preposition followed by a verb with *-ing* (cf. van Gelderen 1993: chap 8). Hence, (69) would not be an unexpected development.

The complement to a perception verb cannot be a stative (or individual level predicates), as (70) shows[4]. Using Diesing (1992) and others to argue statives are IPs (see also Rochette 1988, and Higginbotham 1983: 118 for a different account), one can expect that IP complements such as in (70) will not occur since they do not `fit' in (67) and (68)[5]:

70.   *I saw you be/being tall.
71.   *I saw him know/knowing the answer.

The structure of these complements never allows auxiliary *have* or *be* (except passive) in either English or Dutch, as in (72) and (73) respectively:

72.   *I saw him have crossed the street.
73.   *Ik zag hem de straat zijn overgestoken.

---

[4]Ikawa (1999) shows that Japanese PVCs can be both stage- and individual level predicates. Interestingly, the subjects of PVCs have nominative Case in Japanese, perhaps indicating PVCs are IPs (this is not Ikawa's conclusion though).

[5]As expected, the internal aspect of the complement need not remain non-stative either, as the grammaticality of (i) shows:
        i.   Seeing her be so healthy is a pleasure.

This is again explained by the structure: since perfect *have* and progressive *be* result in states (see Vlach 1981: 287 and Comrie 1976: 56), i.e. IPs, they cannot occur with perception verbs. Once *have* is used, as in (74), the structure changes into one where the *-ing* modifies the subject or object, and a comma intonation occurs between *him* and *having*:

74.   I saw him having crossed the street.

Syntactically, this means that the complement in (1) and (3) is pretty reduced in structure, as shown in (67); not an IP or CP. The same is true in Dutch.   In this paper I will not go into the structure of verbs such as *watch*, but there is evidence that their complement is more like a CP. As Kirsner (1977) has shown, they cannot be passivized, as (75) shows, unlike the two kinds of *see*, as in (76) and (77):

75.   *Nureyev was watched to leap across the stage.
76.   Nureyev was seen to leap across the stage. (both from Kirsner, p. 174)
77.   He was seen leaping across the stage.

In 4.1, I argue that *see* can be stative or non-stative in Modern English but not in Dutch. The structure for the former is auxiliary-like. PVCs are reduced in both languages, i.e. ASPP not IP.

4.2   Evidence
I now present three kinds of evidence in favor of (67).
         First, de Haan (1997: 5) argues that evidentials in Dutch cannot be in the scope of negation. The same should hold for English *saw* in (1) if it is an evidential, as I argue. Hence, (78) and (79) should not exclusively mean that the crossing/drowning is finished. According to native speakers, this is the case[6]:

78.   I didn't see him cross the street in a normal way, but I saw him crawling across.
79.   I didn't see her drown but someone else did and rescued her.

Second, many people, e.g. Kuno (1973, chap 18), Dixon (1988: 38), have argued that perception verbs have complements different from other verbs. On occasion, the complementizer is different (e.g. Japanese); French allows clitic climbing, indicating that there is a close connection between the perception verb and its complement; and English has *to*-less infinitives. In addition, based on Viberg's (1983) observations, it can be shown that in many languages, English included, stative perception verbs, such as *saw* in (1), repeated here as (80), are lexically different from non-stative ones (activity based), such as *see* in (62), repeated here as (81), and *look at* (Viberg discusses a third kind but I will leave that out):

---

[6]Dik & Hengeveld (1991: 241) do not mention this when they discuss negation in English. They show that a PVC cannot be negated, as (i) shows:
         i.   *He saw the girl not cry/crying.
Native speakers do not seem to be too clear in their judgements, however.

80.   I saw him cross the street.
81.   Seeing her swim is exciting.

Viberg provides data from a number of languages, but he is predominantly interested in the different lexical realizations, not what the nature of the difference is or what kind of complement there is.

Certain languages form variants through serial verbs (e.g. Vietnamese and Mandarin Chinese); others through compounds consisting of a noun and a (light) verb. Farsi is a good example of this. In the table Viberg provides (p. 131), it is the activity verbs that have the compound form. The light verb that is included in the compound is typically *kardan* `do' in Farsi, emphasizing the imperfectivity of the activity-based verb (even though Farsi light verbs are typically more varied, e.g. *harf zadan* `speak', literally `letter hit', *yod gereftan* `learn', literally `memory get'). PVCs in Farsi (cf. Lambton 1953: 155) are not infinitival, like English, but clausal, as in (82), even though (83) is very interesting with *him* `raised' out of a finite clause:

82.   didim ke inja hastand
       we-saw that here they-are
       `We saw they are here'. (from Lambton, p. 155)
83.   ura didam ke miraft
       him I-saw that is-going
       `I saw him going'. (from Haim's *Larger Persian English Dictionary*, entry for *didan*)

So, from (82) and (83), it appears that *didan* `see' in Farsi is not grammaticalized into an evidential, but that the activity based ones show imperfectivity through the compound verb.

For Hindi (and the same holds for Urdu), Viberg lists *dekhna* (p. 133) as the equivalent for both `look at' and `see'. However, even though *dekhna* `see' can be used as both (as *didan* can in Farsi), there are many noun-verb compounds for the activity-based verb `see', namely *nazer kerna*, *malum kerna*, *deryaft kerna*, and *nagah kerna* (see Sant Singh's *Practical Dictionary*). The nouns that are part of the compound in Hindi/Urdu and Farsi are most often loanwords from Arabic and in the case of Hindi/Urdu from Farsi as well (see Platts' *Dictionary*) whereas *dekhna* and *karna* `do' have cognates in Sanskrit. In Hindi/Urdu, *dekhna* can be complemented by a present participle, as in (84), (comparable to the English *-ing* form) or by a past participle, as in (85) (comparable to the English bare infinitive):

84.   mEN ne wse bEThte hwe dekha
       I ERG him sitting be see-PAST
       `I saw him (in the act of) sitting down'.
85.   mEN ne wse bEThe hwe dekha
       I ERG him sat be see-PAST
       `I saw him (in the state of) sitting down'. (Both from Barker II: 35)

In informal speech (Anju Kuriakose p.c.), an infinitive is used as well, as in (86), but intuitions

differ as to the exact (aspectual) interpretation:

86.   mEN ne wse jane dekha
        I ERG him go-INF see-PAST

My conclusion about Hindi/Urdu and Farsi is that the simple verb is often used for experiencer based, i.e. stative, meanings but since it has a clausal complement, it has not grammaticalized as in English. The reason for this is that the difference between experiencer and activity based `see' is expressed in another way, namely through compounds. Compounds are most often used for activity based meanings with the light verb emphasizing the imperfectivity.

I now turn to the development of words such as *see, watch, look at* in English. If Modern English *saw* is indeed grammaticalized into an evidential marker, it may be the case that the non-stative perception verbs show some lexical differences, as they do in Hindi/Urdu and Farsi. As is clear from reflecting on (62) to (66), the preferred non-stative perception verb is *watch* or *look at*, not *see*. In fact, (61) above and (87) are somewhat marked:

87.   ?I am seeing that problem for the first time.

According to the OED, *watch* (or rather its unpalatalized form *wake*) means `be awake' and `remain/keep awake' in OE. By 1200, it acquires the meaning of `be vigilant', and by 1600 or so, it acquires the modern meaning of observing someone, as in (88):

88.   Shakespeare, MND, II, i, 177
        Ill watch Titania, when she is asleep, and drop the liquor of it in her eyes.

Observe and *perceive* are straightforward loans, the former being a late 14th century loan with the initial meaning of `obey, follow' and the latter being an early 14th century loan. *Peer at, glance, stare* are all quite specialized forms of non-stative perception verbs, and in OE, *look at* means `direct one's sight to', according to the OED. Thus, in OE, the general perception verb for both stative and non-stative perception is *see*. The addition and changes of perception verbs, I claim, makes the grammaticalization of *see* as a perception verb possible.

A third piece of evidence in favor of (67) comes from an old and often-debated problem, namely the different constituent structures of (1), (2), and (3). Akmajian (1977) argues, on the basis of preposing and clefting, that the structures for (1) and (3) are quite different: in (1), the NP and infinitive are separate constituents; in (3), they are not. Thus, (89) is grammatical but (90) is not:

89.   It was [the moon rising over the mountain] that we saw.
90.   *It was [the moon rise over the mountain] that we saw[7].

---

[7]Sentences such as (i) and (ii) occur, but here the perception verb is not stative:
   i.   ... and [see him win] I will.
        ii.   ... and [hear those dogs yapping] I did.

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Applying this to Dutch (91), the result is (92), where the infinitive patterns with the -ing in English (but see Koster 1987: 131 who considers similar constructions "highly ungrammatical"):

91. We zagen de maan door de bomen schijnen.
    we saw the moon through the trees shine
92. [De maan door de bomen schijnen] is wat we gisteren zagen.
    the moon through the trees shine is what we yesterday saw

These differences between (1) and (2) should come out in the structure, and they can if one argues that *saw* in Modern English is in ASP, as in (67) above. This is only possible if the embedded infinitive is bare and does not move to ASP. In (67), when *saw* is in ASP, the subject *she* moves to Spec IP, and therefore, the trace of *she* inside the ASPP in (90) would not be bound if it is the ASPP that moves in (90).

With -ing, as in (3), bare infinitives in (62) to (66), and in Dutch (2), the structure would be as in (93), similar to (67) and (68), i.e. with *see* less grammaticalized, *she* the subject of the higher clause, and the structure biclausal. In (93), *cross* moves to ASP and *him* to Spec ASP:
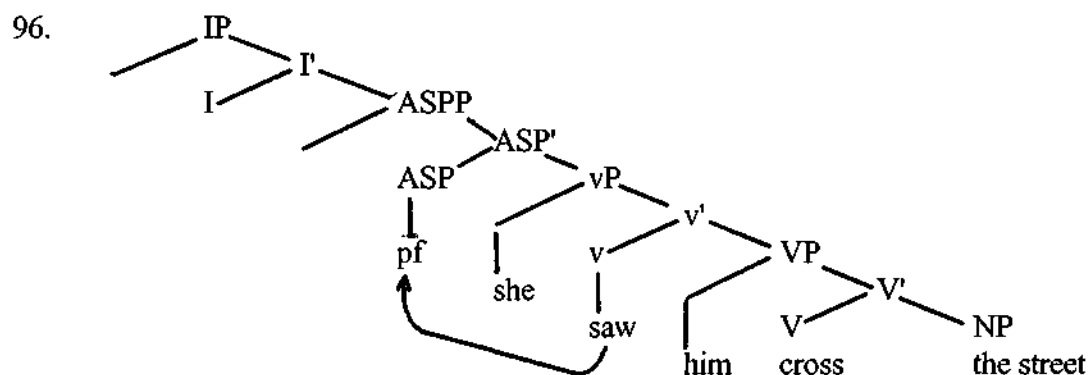
93.
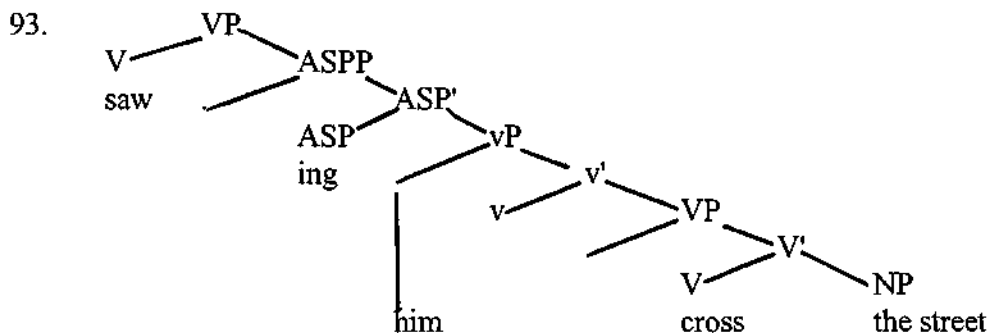
The difference between (67) with *saw* in ASP and (93) with *saw* in a higher clause accounts for the data in (89) and (90). In (89), the ASPP would move and the trace of the subject would be left un-c-commanded; in (90), there would be no trace. Thus, the crucial difference is either having the subject of *saw* and *saw* inside or outside of ASPP.

If sentences such as (62) to (66) are different from (1), the preposing should be grammatical as well, and it is, as (94) and (95) show:

94. [The moon rise over the mountains] is what we missed seeing.
95. [The moon rise over the mountains] is what we wanted to see.

In (94) and (95), *see* is not stative and therefore, the complement can be preposed. Thus, the difference between (89) on the one hand and (94) and (95) on the other provides extra evidence for the correctness of (96) and (93).

So far, I have given several different kinds of evidence that stative *saw* in English in structures such as (1) has a structure as in (67). It is possible to suggest a slight modification of (67) and have *saw* start out in v and move to ASP, as in (96):

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96.

```
            IP
         /      \
        /        I'
       I      /     \
          /       ASPP
         /       /    \
       ASP    ASP'
        |    /    \
       pf         vP
        ↑   /     /   \
        |  /     v'
        |  she  /   \
        | saw  VP
        |_____/  /  \
              V'    \
         him  V      V'
             cross    \
                      NP
                   the street
```

This would mean that the subject would receive a theta-role, Experiencer, from *saw* in v, slightly more elegant than *she* receiving a theta-role from an element in ASP. Note that *him* would be a Theme though. This structure might seem less likely than (67), because of sentences such as (97) (pointed out by a number of people, e.g. Guasti 1993; Felser 1999: 103):

97.   She saw them all cross the street.

Felser (p.c.), however, suggests that *him/them* would have to move to check Case, and then (97) could have a structure as in (96).

In conclusion, I have shown that bare infinitives are not always perfective and there is some evidence that *saw* can occupy two different base positions. There are a number of empirical advantages to (67) and (93): (a) characterizing the perfectivity constraint in (1), (b) accounting for the difference in constituent structure between (1) and (3), (c) explaining (1) versus (62) to (66), both in terms of perfectivity and constituent structure, and (d) showing similarities between English, Hindi/Urdu, and Farsi. In Dutch and older English, *zie/see* would not have grammaticalized as far. Sentences such as (1) are grammaticalized: *saw* behaves more like an auxiliary.

5   Conclusion and further research

In this paper, I shed doubt on the assumption that endingless eventive infinitives are perfectives. The reasons for these doubts are that only certain bare infinitives are perfective and that at the time of the loss of the infinitive marker around 1400, there is no sudden change in either the interpretation of (1) or the grammaticality of (39).

In an attempt to provide an account why Modern English on the one hand and Dutch, OE and ME on the other differ, I argue that including an ASPP explains a number of phenomena and that *saw* in (1) is an evidential modal: (a) the complementation similarities between deontics and perception verbs in Modern English stem from being in or being lower than ASP; epistemics can select an ASPP and are therefore higher, (b) structural differences, e.g. as between (89) and (90).

I will now point to some areas that need further research. I have not examined event

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structure, and the similarities between verbs such as *saw* and verbs like *make* (see Hale & Keyser 1993). In a structure with an embedded clause, there are obviously two events. The structures I have examined here are ones where bi-clausals become mono-clausal, and the two (original) events may be one. Therefore, it may be more accurate to say that there is one event in (1), rather than a seeing event and a perfective crossing, but two in (2). This may be a result of the grammaticalization. This remains for further research (see e.g. Travis 2000: 180 who places ASP between two VPs, the highest being process and the lowest result) and tests such as the use of *again/once more* are very inconclusive.

Another question I have not considered is what kind of features are occupying ASP. If they are Uninterpretable (Chomsky 1995), overt movement would be necessary. In addition, one needs to know what the features of the word connected to the aspectual marker are.

Part of a Modern Corpus of Spoken Professional American English shows that the evidential use of *see/saw* is quite rare. Out of 217 instances of *see* only 5 have bare infinitival complements and all are activity, as in (98). Of the 26 instances of *saw*, none have a bare infinitival complement:

98.   a model for how you'd like to see a university operate.

This is puzzling and requires an explanation.

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