On the Dutch *aan het*-infinitive

Frank Van Eynde
University of Leuven

Dutch has an infinitival construction which is introduced by *aan het* 'at the' and which is canonically combined with the copula, as in (1).

(1) Het schijnt dat ze al   uren [aan het dansen]   is.
     it   seems that she already hours at   the dance.INF is

     'It seems that she has been dancing for hours.'

It presents the activity or process that the infinitive denotes as ongoing. Given that *aan* is canonically used as a preposition and *het* as a determiner, the bracketed phrase in (1) has been argued to be a PP, consisting of a preposition and a nominalized infinitive (Booij 2002, 307). There is some evidence, though, that this treatment is not appropriate.

Evidence that the *aan het*-infinitive is not a PP

Combinations of a preposition with a nominalized infinitive routinely occur in the Nachfeld, just like ordinary PPs, but *aan het*-infinitives cannot occur in that position.[1]

(2) Het dient niet te worden gebruikt [tijdens het geven   van borstvoeding]
     it   ought not to get   used   during the give.INF of   breast.feeding

     'It should not be used during lactation'

(3) * Het schijnt dat ze al   uren   is [aan het dansen]
       it   seems that she already hours is at   the dance.INF

Likewise, combinations of a preposition with a nominalized infinitive can occur anywhere in the Mittelfeld, just like ordinary PPs, but *aan het*-infinitives must immediately precede the cluster.

(4) ... dat de Smart Fortwo Cabrio [na   het verdwijnen   van de Ford Street Ka] de
     ... that the Smart Fortwo Cabrio after the disappear.INF of   the Ford Street Ka the
     goedkoopste cabrio op de Belgische markt is
     cheapest   cabrio on the Belgian   market is

     '... that the Smart Fortwo Cabrio is the cheapest cabrio on the Belgian market after the disappearance of the Ford Street Ka'

(5) * ... dat ze [aan het dansen]   al   uren is
       ... that she at   the dance.INF already hours is

Evidence that the *het*+infinitive part is not an NP

Nominalized infinitives are subject to the Complex Noun Phrase Constraint (Ross 1967), just like ordinary NPs.

(6) a. Dit wordt vaak gebruikt bij [het eten geven]
        this is   often used   at the food give.INF

        'This is often used while giving food'

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     b. * Wat wordt dit vaak gebruikt bij [het __ geven]?
        what is   this often used at the   give.INF

By contrast, the *het*+infinitive part of *aan het*-infinitives is not constrained by the CNPC, as demonstrated in (7).

(7)   a. ... toen ik mijn beesten aan [het eten geven] was
        ... when I my animals at the food give   was

       '... when I was giving food to my animals'

     b. wat was ik mijn beesten aan [het __ geven]?
        what was I my animals at the   give.INF?

       'What was I giving to my animals?'

In this respect, it sides with ordinary VP complements, as in (8).

(8)   a. Je moet je   beesten elke dag [eten geven]
        you must your animals every day food give.INF

       'You must give your animals food every day'

     b. Wat moet je je   beesten elke dag [__ geven]?
        what must you your animals every day   give.INF?

       'What should you give to your animals every day?'

Moreover, nominalized infinitives that are introduced by *het* may be modified by a declined adjective, as in (9a). This is not possible for the infinitive in the *aan het*-construction (Broekhuis, Corver and Vos 2015, 154).

(9)   a. door [het heftige   bewegen van armen en benen] te stoppen
        by   the fierce.DCL move.INF of arms and legs]   to stop

       'by stopping the fierce moving of arms and legs'

     b. dat ze hun armen en benen aan [het (*heftige)   bewegen] zijn
        that they their arms and legs at the (*fierce.DCL) move.INF are

    Taking stock, given that the *aan het*-infinitive does not behave as a PP, that the combination of *het* with the infinitive does not behave as a nominalized infinitive, and that it sides with ordinary VPs in terms of the extractability of its dependents, we assume that the *aan-het*-infinitive is a VP.

Analysis

To present the analysis we use the syntactic structure of (7a), as spelled out in Figure 1. Proceeding bottom up, the bare infinitive *geven* 'give' combines with its nominal complement *eten* 'food', yielding a partially saturated VP, that is subsequently combined with *het* and with *aan*. We treat *het* and *aan* as separate words, because the latter can scope over coordination, as in (10).

(10) Ik denk dat ze   nog aan [het eten en het drinken] zijn.
      I think that they still at the eat and the drink   are

     'I think they are still eating and drinking.'

    To model the combination of *het* with the infinitive, we assume that it is a head selecting functor, adopting the notion of functor as defined in (Van Eynde 2006) and (Allegranza 2006). More specifically, we assume that *het* selects a bare infinitival VP with a nonempty SUBJ(ECT) list, that it does not select any complements, and that it has a MARKING value of type *het* which it shares with the resulting VP. See Figure 2. In contrast to the homophonous definite article, the infinitival *het* cannot be replaced by any other determiner and does not convey any notion of definiteness. Instead, its semantic contribution

consists in the introduction of an index of type *situation* that is constrained by the state-of-affairs which its infinitival sister denotes. The index is invariably 3rd person, singular and neuter, and the state-of-affairs must be dynamic. Stative verbs cannot be used in the *aan het*-infinitive:

(11) * Ze   zijn het aan het weten/bezitten
      they are it   at   the know.INF/own.INF

    'They are knowing/owning it.'

This is captured by the requirement that the CONTENT value of the selected nominal must be of type *process*, which is a subtype of *state-of-affairs.*

In the same vein, we assume that *aan* selects an infinitival head sister which is introduced by *het* and which has a nonempty SUBJ list, that it does not select any complements, and that it has a MARKING value of type *aan-het* which it shares with the resulting VP. See Figure 3. Its semantic contribution consists in the addition of the constraint that the situation that its head sister denotes is presented as ongoing at the time of location. That time is often left implicit, but can be overtly expressed, as in (12), where it is specified by the temporal PP *om 5 uur* 'at 5 o'clock'.

(12) nu   is dat zo al   om 5 uur aan 't   donker worden
     now is that so already at   5 hour at   the dark   become.INF

    'it is already getting dark at 5 o'clock now'

Proceeding upward, the resulting partially saturated *aan het*-infinitive is combined with its other nominal complement (*mijn beesten* 'my animals'). Its SUBJ requirement remains unsaturated and is inherited by the copula. This may concern a non-referential NP, as in (13).

(13) het schijnt dat het aan het regenen is
     it   seems that it   at   the rain.INF is

    'it seems to be raining.'

Beside the copula, there is a small number of other verbs that select a VP[*aan-het*] complement, including the inchoative *gaan* 'go', as used in (14).

(14) ... zodat   hij niet meer aan het zwerven   kon   gaan.
     ... so.that he not more at   the wander.INF could go

    '... so that he could not go wandering any more.'

A comprehensive survey of these verbs is provided in Haeseryn, Romijn, Geerts, de Rooij and van den Toorn (1997, 1049–1054).

Summing up, to model the syntactic and semantic properties of the *aan het*-infinitive it is not necessary to introduce a special type of phrase (or construction). Instead, it suffices to treat *aan* and *het* as head selecting functors. This treatment is in line with the functor treatment of the Dutch *om* and *te* in Van Eynde (2004, 33–42) and with the marker treatment of the French '*a* and *de* in Abeillé, Godard, Miller and Sag (1998) and of the English *for* in Pollard and Sag (1994, 45), all of wich are prepositions that combine with an infinitival sister.

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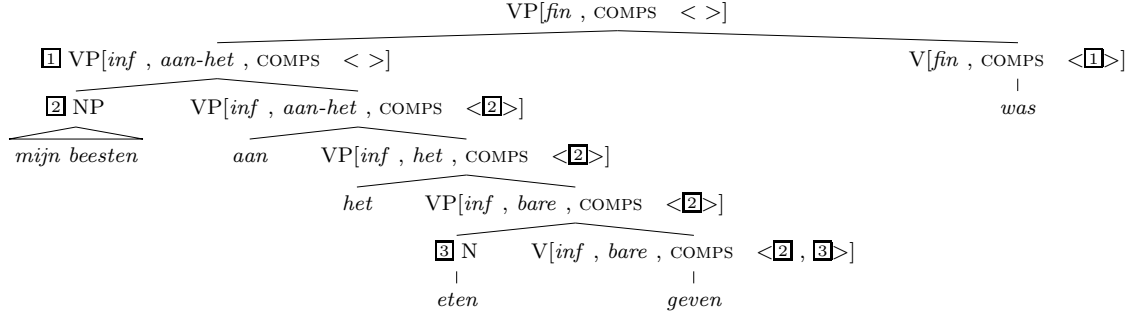
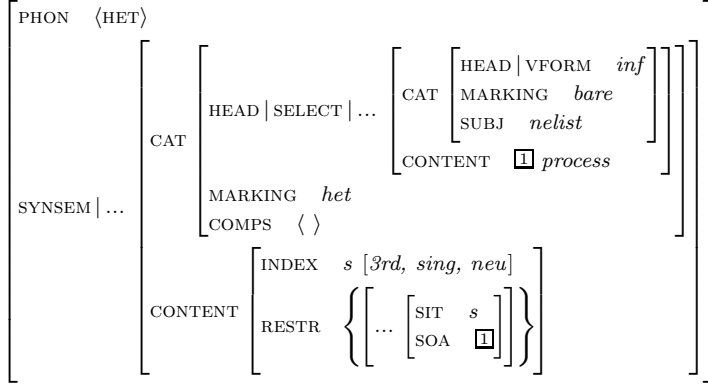Figure 1: Analysis of *mijn beesten aan het eten geven was*
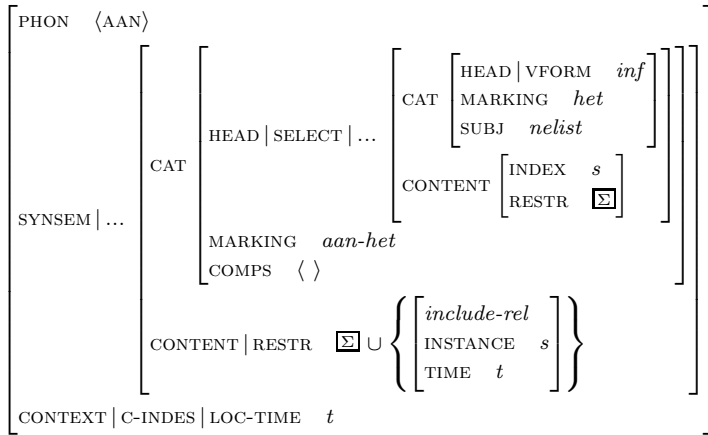

Figure 2: Lexical entry for the infinitival *het*

Figure 3: Lexical entry for the infinitival *aan*