RESEARCH ARTICLE

Reference to and via properties: the view from Dutch

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Abstract Many languages offer a surprisingly complex range of options for referring to entities using expressions whose main descriptive content is contributed by an adjective, such as Dutch *de blinde* 'the blind (person),' *het besprokene*, 'the (matters) discussed,' or *het ongewone van het niet roken* 'the strange (thing) about not smoking.' In this paper, we present a case study of the syntax and compositional semantics of three such constructions in Dutch, one of which we argue has not previously been identified in the literature. The data and the analysis will shed light on our understanding of how reference using adjectives differs from that using nouns in languages that have the two categories, as well as on the differences between reference to entities via their properties vs. reference to properties themselves. Finally, we briefly discuss related work and indicate directions for future study of the typological variation found in this rich and highly understudied corner of natural language.

Keywords Adjective semantics · Noun semantics · Abstract objects · Nominalization · Inflected adjectives · Kinds · Properties · Tropes

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1 Introduction

In formal semantic theories with roots in Montague Grammar, nouns and predicative adjectives are both generally assigned the same semantic type: they denote properties of individuals, typically modeled as sets of those individuals describable by the noun or adjective, or intensionally as functions from indices to such sets.[1] Against such a theoretical background, we might expect there to be no substantive difference in the way the two types of expressions are used (in combination with determiners) for reference, and, indeed, it is somewhat surprising on such theories that there are distinct categories of adjectives and nouns at all. However, differences clearly do exist between the ways in which adjectives and nouns can be used for reference. This paper investigates three Dutch Determiner Phrase (DP) configurations with an inflected adjective (marked with a subscripted [+e] in the gloss) and without an overt nominal 'core.' To give just a few examples, *een vreemde* in (1a) can only be used for reference to humans (a stranger, i.e. someone you don't know), even though the adjective *vreemd* 'strange' can in principle apply to physical objects (e.g. *een vreemd kunstwerk* 'a strange piece of art'). *Al het vreemde* in (1b) can only have mass, and not count reference ('that which is strange'), even though there are uses of the definite article *het* that are compatible with count reference (as in *het kind* 'the child'). In contrast to (1b), *het vreemde van het ongeluk* in (1c) doesn't describe something strange in itself, but refers to the strange aspect of the accident:

(1) a. Hoe leer je een kind dat het niet met **een vreemde** mee
        how teach you a child that it not with a strange[+e] with
        mag gaan?
        may go
        'How do you teach a child not to leave with a stranger?'
    b. Ze moeten wennen aan al het nieuwe, **al het vreemde**
        they must get-used to all the new[+e] all the strange[+e]
        dat dit land hen biedt.
        that this land them offers
        'They must get used to everything new, everything strange that this
        land offers them.'
    c. **Het** vreemde van de situatie vind ik dat politieke partijen
        the strange[+e] of the situation find I that political parties
        het maar laten gebeuren.
        it just let happen
        'The strange thing about the situation, I find, is that political parties just
        let it happen.'

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[1] On some analyses (e.g. von Stechow 1984) gradable adjectives denote relations between individuals and degrees or measure functions, and come to denote properties of individuals only in combination with a degree argument or degree morphology. The reader who prefers such analyses could substitute "adjectives" with "adjectives once combined with the relevant degree component" in the text above; for simplicity, we set aside this complication.

The examples in (1) are extracted from Google searches, as are most of the examples discussed in this paper. The examples are sometimes shortened or adapted for reasons of space, but we prefer this methodology of naturally occurring examples over artificially constructed ones for the topic at hand. We find that the naturalness of the examples helps us to obtain good native speaker intuitions and capture the relevant generalizations.[2]

The premise of this paper is that we can gain insight into the syntactic and semantic differences between nouns and adjectives and the consequences of those differences for their referential uses by exploring in depth the constructions in (1) and the ways in which these constructions differ from DPs whose main descriptive content is provided by a noun (e.g. *de hond* 'the dog').[3] We also hope to shed light on how reference to properties themselves is effected. To this end, we present an analysis of these three Dutch constructions, none of which, to our knowledge, has previously been given a comprehensive syntactic and semantic analysis (though see Kester 1996 and McNally and de Swart 2011 for partial descriptions).

The main claims of the paper can be summarized as follows. We argue that the construction in (1a) involves a null noun with human reference, and the adjective has its regular predicative interpretation. In contrast, we take the construction in (1b) to have the syntax of a small clause and the semantics of a free relative, with a semantics roughly paraphrased in English as 'all that is Adj(ective).' Finally, we assign the inflected adjective in (1c) a relational interpretation: it takes the DP complement of the PP as its inner argument and, in combination with the determiner, refers to a property, which we roughly paraphrase as 'the Adj aspect of/ thing about DP' or, in some cases, 'the Adj-ness of the DP.'[4]

The paper is organized as follows. We start with some background information on the patterns of adjectival inflection in Dutch (Sect. 2). Sections 3–5 are devoted, respectively, to the syntactic and semantic analysis of the three constructions illustrated in (1), including arguments that (1b) and (1c) do in fact constitute distinct constructions.

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[2] Of course, all examples have been checked against our respective native speaker intuitions for Dutch (de Swart) and English (McNally). The following abbreviations not mentioned in the text also appear in our glosses: Adj = adjective, Adv = adverb, DEM = demonstrative, DIM = diminutive, F(EM) = feminine, INF = infinitive, M = masculine, PART = particle, PL = plural, REFL = reflexive.

[3] For simplicity and where no confusion will arise, we will sometimes use the locution "DPs headed by a [noun/adjective/…]" for such cases, even though strictly speaking the head of the DP is the determiner on our analysis.

[4] A note particularly for native speakers of English: This last construction lacks a single formal counterpart in English, which might make it intuitively difficult for native English speakers to grasp. We think the best way to deal with this potential difficulty is via the illustration of the specific properties of the construction as the paper develops. It is also therefore hard to find an exact English paraphrase for the inflected adjective in this construction.

2 Background on the uses of inflected adjectives in Dutch

We begin with some relevant background on Dutch. First, we review the basic patterns of adjectival inflection within nominals. We then distinguish the non-elliptical uses of inflected adjectives that will concern us from their elliptical uses, which will not further interest us here. This latter discussion will also provide a bit more introductory information about the three constructions to be discussed in Sects. 3–5.

2.1 Patterns of adjective inflection in prenominal position

Adjective inflection in Dutch depends in part on the gender of the noun that the adjective co-occurs with. Dutch nouns are classified as masculine, feminine or neuter. The distinction between masculine and feminine nouns is visible with natural gender, where the two lead to different anaphoric pick-ups: *de man…hij* 'the man…he' vs. *de vrouw…zij* 'the woman…she.' In the grammatical system of articles and adjective inflection, masculine and feminine nouns behave alike, in contrast to neuter nouns. Thus, Dutch grammars commonly establish a distinction between common gender and neuter gender. Dutch has two definite articles: *het* (glossed in 3 as 'the.SG.N'), which is singular and neuter; and *de* (glossed here as 'the'), which combines with all common gender (i.e. masculine and feminine) singular nouns, as well as all (common gender and neuter) plural nouns. There is one (singular) indefinite article *een* 'a,' which is used for all (common gender and neuter) singular nouns.

When a neuter noun appears with the indefinite article, any accompanying adjective appears in the basic uninflected form:

(2) Ik kocht   een groen   boek.   [neuter noun, indefinite]
     I   bought a   green$_\varnothing$ book
     'I bought a green book.'

In all other cases, the adjective appears in its inflected form. That is, definite DPs containing neuter nouns (3a), both definite and indefinite DPs containing common gender nouns (3b), and definite/bare plurals (3c), all use the long form of the adjective with the schwa *-e* at the end:

(3) a. Het   groene   boek was mooi.   [neuter noun, definite]
         the.SG.N green$_{[+e]}$ book was beautiful
         'The green book was nice.'
     b. Ik heb   een/de groene   tafel gekocht.   [common gender noun,
         I   have a/the   green$_{[+e]}$ table bought   indef/def]
         'I bought a/the green table.'
     c. Ik heb   (de) groene   boeken/tafels gekocht. [neuter/common gender
         I   have (the) green$_{[+e]}$ books/tables   bought   noun, pl.]
         'I bought (the) green books/tables.'

All adjectives show this alternation, except when they end in schwa (*roze* 'pink,' *mauve* 'mauve'), *-a* (*lila*, 'lilac'), or *-en* (*gouden* 'golden'); we therefore generally avoid such adjectives in the rest of the paper.

2.2 Elliptical vs. non-elliptical uses of inflected adjectives

Both inflected and uninflected adjectives have an elliptical use with the indefinite article *een*, the non-neuter definite article *de*, and the neuter definite article *het*, as illustrated in (4):

(4) a. Jan kocht een rode   auto, en Karel een blauwe $\varnothing$.
        Jan bought a   red$_{[+e]}$ car   and Karel a   blue$_{[+e]}$ $\varnothing$
        'Jan bought a red car, and Karel a blue one.'
    b. Jan kocht   de rode   auto, en Karel de blauwe $\varnothing$.
        Jan bought the red$_{[+e]}$ car   and Karel the blue$_{[+e]}$ $\varnothing$
        'Jan bought the red car, and Karel the blue one.'
    c. Ik   las   het   rode   boek, en mijn buurvrouw   het
        I   read   the$_{sg.n}$ red$_{[+e]}$ book and my   neighbor$_{fem}$ the$_{sg.n}$
        groene $\varnothing$.
        green$_{[+e]}$ $\varnothing$
        'I read the red book, and my neighbor the green one.'

There is no pronominal *one* here as in English, but elliptical use of inflected adjectives is subject to the same conditions on use as are DPs headed by *one*.[5] Crucially, the DP must have an antecedent containing an overt nominal that identifies the elided descriptive content.

In the absence of an explicit or implicit antecedent in the preceding discourse, DPs headed by inflected adjectives have a use that is unrelated to ellipsis. In traditional grammars (e.g. Haeseryn et al. 1997; see also Broekhuis et al. 2013), it is common to distinguish between the so-called 'human' construction illustrated in (5a), and the so-called 'abstract object' construction in (5b). We will further argue

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[5] Sassoon (2013) discusses some facts involving English nationality expressions (e.g. *Italian*) that indicate that the use of *one* is somewhat more complex than it might seem at first glance, and that the conditions on its use are sensitive to the animacy of the DP referent. However, as our focus is on Dutch rather than English, and as we suspect that the facts are specific to nationality adjectives, we will not discuss these data here. More generally, we avoid using nationality expressions in this paper, as it seems possible to us that they have acquired a conventionalized nominal use alongside their adjectival one.
  Note also that there is a residual problem with indefinite neuter nouns in examples like (i):

(i) Ik kocht   een groen schrift,   en mijn broer   een $^?$rood / $^?$rode $\varnothing$.
    I   bought a   green notebook, and my   brother a $^?$red / $^?$red$_{[+e]}$ $\varnothing$
    'I bought a green notebook, and my brother a red one.'

We would expect the uninflected form of *rood* here, as the antecedent is the neuter noun *schrift*. However, Dutch speakers are uncomfortable with the uninflected form in ellipsis, and some prefer the use of the inflected form in this environment (Kester 1996). Broekhuis et al. (2013) claim that ellipsis is disfavored without schwa, and therefore avoided with neuter nouns altogether. We will leave this problem aside, as it doesn't interact with the main issues addressed in this paper.

that examples like (5c), which Kester (1996) subsumes under the abstract object construction, are in fact syntactically and semantically quite different:

(5) a. **De zieke**   werd thuis   verzorgd en   verpleegd.
       the sick$_{[+e]}$ was   at-home cared-for and nursed
       'The sick person was taken care of and nursed at home.'

   b. Van **het   besprokene**   en   de   besluiten wordt een   verslag
      of   the$_{sg.n}$ discussed$_{[+e]}$ and the decisions is   a   report
      gemaakt.
      made
      'A report is made of what was discussed, and the decisions.'

   c. **Het mooie**   aan al   deze activiteiten is dat ze   vóór en
      the beautiful$_{[+e]}$ at all these activities is that they for   and
      dóór   psychologiestudenten worden   georganiseerd.
      by   psychology-students are   organized
      'The beautiful thing about all these activities is that they are organized
      for and by psychology students.'

In the construction in (5a), an inflected human-describing adjective (e.g. *rijk* 'rich,' *blind* 'blind,' *ziek* 'sick') combines with the common gender article *de* (compare English *the blind*, *the rich*, etc.). In the abstract object construction in (5b), the inflected adjective generally takes the neuter article *het* (possibly preceded by the predeterminer *al* 'all'), though as we will see, in some cases demonstratives are also found. Note that we find the long form here even with adjectives that do not normally take the schwa, like *besproken*, which ends in *-en* (cf. above). English also allows reference to abstract objects by means of adjectives along the lines of (5b). Quirk et al. (1985, p. 424) list *the mystical*, *the best*, *the sublime*, *the ridiculous* and a few others, but observe that the construction is "restricted chiefly to certain fixed expressions" (though see Glass 2014 for data that indicate that the construction is more widespread than Quirk et al.'s characterization would suggest). In Dutch, there is a wide range of such inflected adjectives referring to what we can describe (pretheoretically) as 'that which is Adj,' for (5b). The meaning of the abstract object construction in (5b) is similar to its English counterpart, but the process is fully productive in Dutch. Though, as we will see in some examples later on, the referent of this construction can sometimes be fairly concrete, we will follow tradition and continue to refer to it as the "abstract object" construction in order to distinguish it from the construction in (5c).

Het mooie aan al deze activiteiten in (5c) shares the use of the neuter definite article with the abstract object construction in (5b). However, as we will see, *het* is the only determiner that occurs in this construction. The intuition is that the construction doesn't refer to some thing or stuff that is attractive, but rather to an attractive feature or aspect of the activities. This interpretation points to a special relation between the inflected adjective and the PP, and indeed the latter is obligatory, while the PP in (5b) is not. The special role played by the obligatory complement motivates our decision to label this construction as involving a *relational* inflected adjective, as will be discussed in detail in Sect. 5.

We now turn to the syntactic and semantic differences between the three types of inflected adjectives illustrated in (5a–c), formulating a syntax–semantics interface for each of them. We start with the human construction, which is the most straightforward case.

3 The human construction

In English, the human construction is largely restricted to the sort of cases that would be expressed using definite generic plurals in Dutch (6a), but in Dutch we also find the human construction in indefinite generic and existential contexts, in the singular as well as the plural (6b, c, examples from Kester 1996, p. 231), and with a wide range of quantifiers (6c–e):

(6) a. **De rijken**   worden alleen maar rijker.
        the rich$_{[+e]}$.PL become only   just   richer
        'The rich only become richer.'
     b. **Een zieke**   heeft recht op een goede   verzorging.
        a   sick$_{[+e]}$ has   right to a   good   care
        'A sick person has a right to good care.'
     c. Ik zag **twee blinden**   de   straat oversteken.
        I   saw two   blind$_{[+e]}$.PL the   street cross
        'I saw two blind people cross the street.'
     d. Er   komen **weinig vreemden**   in dit   dorp,   dus
        there come   few   strange$_{[+e]}$.PL in this village so
        het is   voor de   lokale   bevolking   een hele   belevenis
        it   is for   the   local   population a   whole   event
        om   ons aan   het   werk   te   zien.
        for   us   at   the   work   to   see
        'Few strangers come to the village, so for the local population, it is quite an event to see us at work.'
     e. **De meeste armen**   leven in derde   wereldlanden.
        the most   poor$_{[+e]}$.PL live   in third   world   countries
        'Most of the poor people live in third world countries.'

In traditional grammars (like Haeseryn et al. 1997), it is generally assumed that the adjective in the human construction has been converted into a noun. One argument for this is that adjectives in prenominal position are not marked for plural (see 3c), but the -*n* appearing in (6a) and (6c) indicates plurality. That is, without the -*n*, the inflected adjective refers to a single person, as in (6b). The -*n* is an irregular plural, as most nouns ending in schwa in Dutch form the plural by means of the affix -*s* (*dame-dames* 'lady-ladies'), though -*en* is found as a plural nominal form with other classes of nouns (*stoel-stoelen* 'chair-chairs,' *student-studenten* 'student-students'). Note also that -*n* is used in special cases to indicate human reference. Certain indefinite plural quantifiers allow forms with and without -*n*, and in those cases, the form with -*n* is [+human], whereas the form without -*n* is [-human]. We see this

contrast in *enkele/enkelen* 'some,' *sommige/sommigen* 'some, certain,' *vele/velen* 'many.' The use of *-n* with *rijke* 'rich,' *zieke* 'sick,' *blinde* 'blind,' etc. may thus be explained by the human reference of these expressions.

A second argument for the conversion analysis of the adjective is that it also correctly predicts that adjectival modifiers can appear in the construction:

(7) a. de   zielige   blinde
       the   pitiful$_{[+e]Adj}$ blind$_{[+-e]}$
       'the   pitiful   blind person'
    b. de   verveelde   rijken
       the   bored$_{[+e]Adj}$ rich$_{[+-e]}$.PL
       'the   bored   rich   people'

Many adjectives double as adverbs, but the adverbial counterpart always occurs in the short form (without *-e*). Given that *zielige* 'pitiful' and *verveelde* 'bored' appear in the long form in (7), they must be adjectives. If *blinde* and *rijken* in (7) were adjectives, we might expect only adverbial modification, as adjectives normally do not modify other adjectives. The pattern in (7) therefore supports a nominal analysis of the inflected adjective in the human construction.

However, Kester (1996) challenges the claim that the adjective is converted into a noun, and maintains an adjectival analysis. She observes that inflected human adjectives as in (8c) do not allow for diminutive suffixes, unlike regular nouns (8a, b)[6]:

(8) a. een vrouw – een vrouwtje
       a   woman – a   woman.DIM
    b. a   dame   – een dametje
       a   lady   – a   lady.DIM
    c. een blinde – *een blindetje
       a   blind – *a   blind.DIM

The contrast between (8b) and (8c) indicates that the problem with (8c) is not phonological: (8b) shows that regular nouns ending in schwa are compatible with the diminutive suffix. Kester takes the incompatibility with diminutive suffixes to be a major problem for the nominalization approach.

In support of an adjectival analysis Kester argues that the inflected form is compatible with degree modifiers and other adverbs as in (9). Furthermore, they can appear in comparative and superlative forms as in (10), and they can be preceded by adjuncts and complements as in (11) (examples from Kester 1996, p. 232):

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[6] This is not to say that no inflected adjectives are lexicalized as nouns. A likely example appears in (i). Note, in support of the lexicalization hypothesis, that there is a shift in meaning: the diminutive form has a somewhat pejorative interpretation. Unsurprisingly, as a noun, it admits the diminutive. The point is that such cases are the exception, not the rule.

(i) een blonde – een blondje
    a   blond   – a   blond.DIM

(9) a. de   zeer   rijken
         the   very$_{Adv}$ rich$_{[+e]}$.PL
         'the very rich'
     b. de   onlangs   gestorvenen
         the   recently$_{Adv}$ died$_{[+e]}$.PL
         'the people who died recently'

(10) a. de   nog   ziekeren
          the   even$_{Adv}$ sicker$_{[+e]}$.PL
          'the people that are even sicker'
      b. de   allerbesten
          the   all-best$_{[+e]}$.PL
          'the best of all'

(11) a. de   naar   onze   maatstaven   zeer   vermogenden
          the   to   our   standards   very$_{Adv}$ wealthy$_{[+e]}$.PL
          'the people that are very wealthy by our standards'
      b. de   van   een   uitkering   levenden
          the   of   a   social-security   living$_{[+e]}$.PL
          'the people that are living on social security'
      c. de   tot   levenslang   veroordeelden
          the   to   lifelong   sentenced$_{[+e]}$.PL
          'the people serving a lifelong sentence'

On the basis of these facts, Kester concludes that the human construction in Dutch is best analyzed in terms of an adjective followed by the null noun pro (N-*pro*). The definite common gender article *de* identifies the semantic features of N-*pro* as [+human]. Recall that the Dutch human construction is much freer than its English counterpart. The English human construction is restricted to definite, generic plural uses like (6a). The Dutch human construction also appears in the singular (6b), and in non-generic uses (6c–e). Accordingly, Kester takes the N-*pro* in the English human construction to be specified as [+human, +generic, +plural]. In the Dutch human construction, N-*pro* only carries the feature [+ human], and the special ending -*n* on the adjective is needed to license and identify it as [+plural] (Kester 1996, p. 238). Multiple adjectives can modify the N-*pro*, leading to configurations like (7), but the special plural ending -*n* appears only on the last one (7b). This adjective occurs in a specifier-head configuration with N-*pro*, and, as argued for other cases as well, specifier-head agreement in overt syntax is crucial for licensing (Kester 1996, p. 239).

We find Kester's (1996) arguments for a null noun in the human construction convincing, but she doesn't discuss the semantics beyond the features on the null noun. We will now be more explicit about the syntax–semantics interface so as to fine-tune the contrast with the abstract object construction and the relational inflected adjectives. Specifically, we propose that the null noun contributes a free variable and the sortal restriction that the value of this variable must be human. We will assume a variant of the "layered" approach to DP advocated in Zamparelli (1995), on which the descriptive core of DP (typically contributed by an NP)

denotes a property of kinds, while a functional projection Num(ber) adds number morphology and extensionalizes the NP denotation. On the basis of the syntactic structure in (12), the denotation of the null noun will have the logical representation in (12a): it denotes the property of human kinds. When an adjective modifies this noun, the resulting denotation will be effectively the same as that of the adjective (12b), only with the added condition that the individuals described by the adjective be human (12c). We take inflectional morphology (-e, -en) to sit in NumP; its job is to extensionalize the NP by means of Carlson's (1977) realization relation **R** (12d, e). In the case of the plural, we add Link's (1983) star operator (*) to the realization relation to indicate that the instances of the kind will be pluralities. In the absence of an overt noun, plural is marked on the adjective as -n, and fused with -e in NumP (12e, g).

(12) $[_{\text{NumP}} \text{-}e(n) \, [_{\text{NP}} \text{AP} \, [_{\text{N}} pro]]]$

    a. $[\![\, [_{\text{N}} pro] \,]\!]$: $\lambda x_k[\textbf{human}(x_k)]$

    b. $[\![\, [_{\text{AP}} \text{Adj}] \,]\!]$: $\lambda P \lambda y[(\textbf{Adj}(P))(y)]$

    c. $[\![\, [_{\text{NP}} \text{AP} \, [_{\text{N}} pro]] \,]\!]$: $\lambda x_k[\textbf{AP}_{[+\text{human}]}(x_k)]$

    d. $[\![\text{-}e]\!]$: $\lambda P \lambda y \exists x_k[\textbf{R}(y, x_k) \wedge P_{[+\text{human}]}(x_k)]$

    e. $[\![\text{-}en]\!]$: $\lambda P \lambda y \exists x_k[\textbf{R*}(y, x_k) \wedge P_{[+\text{human}]}(x_k)]$

    f. $[\![\, [\text{-}e \, [_{\text{NP}} \text{AP} \, pro]] \,]\!]$: $\lambda y[\textbf{R}(y, x_k) \wedge \textbf{AP}_{[+\text{human}]}(x_k)]$

    g. $[\![\, [\text{-}en \, [_{\text{NP}} \text{AP} \, pro]] \,]\!]$: $\lambda y[\textbf{R*}(y, x_k) \wedge \textbf{AP}_{[+\text{human}]}(x_k)]$

This semantics allows the inflected adjective to appear in the singular or the plural, with any kind of count article, determiner, or quantifier, as is in fact the case in Dutch. By way of example, we work out the semantics of *rijke(n)* in (13). (13a) is the output of (12f) applied to the adjective *rijk*. This corresponds to the set of rich (atomic) people. (13b) is the output of (12 g) applied to the adjective and denotes the set of pluralities of rich people.

(13)   a. $[\![\, [_{\text{NumP}} \text{-}e \, [_{\text{NP}} \text{AP} \, pro]] \,]\!]$: $\lambda y[\textbf{R}(y, x_k) \wedge \textbf{Rich}_{[+\text{human}]}(x_k)]$

    b. $[\![\, [_{\text{NumP}} \text{-}en \, [_{\text{NP}} \text{AP} \, pro]] \,]\!]$: $\lambda y[\textbf{R*}(y, x_k) \wedge \textbf{Rich}_{[+\text{human}]}(x_k)]$

The semantics of -n is no different from that of the plural morphology on nouns. We assume Farkas and de Swart's (2010) semantics for the plural marker on nominal expressions, but note that the behavior of plural -n on inflected adjectives could also be compatible with other analyses of plural morphology.

    With this basic analysis in hand, we can now dig a bit deeper into the semantics of the human construction with adjectives and adverbs preceding the inflected adjectives. (14) and (15) provide examples in a sentential context. Recall that the long form (with -e) *zielige* that appears in (14) indicates that it is an adjective. In contrast, *ernstig* 'serious' appears in the short form (without -e) in (15), indicating that it is an adverb, effectively equivalent to 'seriously':

(14) De vader van Luna heeft **de twee zielige**   **zieken**   opgehaald.
      the father of   Luna has   the two pitiful$_{[+e]\text{Adj}}$ sick$_{[+e]}$.PL up-picked
      'Luna's father picked up the two pitiful sick persons.'

(15) Er   zijn **twee ernstig   zieken**   overleden kort   na   de
     there are two serious$_{Adv}$ sick$_{[+e]}$.PL died   shortly after the
     inentingen.
     vaccinations
     'Two seriously sick people died shortly after the vaccinations.'

Preceding descriptive adjectives as in (7) and (14) always have an interpretation where they describe what might be called incidental properties of the referent: (14) conveys that two people who are identified as sick are picked up, and they are further described as pitiful. In contrast, preceding adverbs as in (9b) and (15) have an interpretation that serves to narrow down the kind of individuals picked out by the adjective. Thus, in (15) the two people who are claimed to have died shortly after the vaccinations are identified as of the seriously ill sort.

We take it as a fact that adjectives cannot modify other adjectives. Therefore, *zielige* cannot modify the adjective *zieke* directly, within the Adjective phrase that modifies the null *pro* head noun. In contrast, the adverb *ernstig* can modify *zieke*, resulting in *ernstig zieke* at the NP level, which denotes a property of kinds (of humans) that forms the core of the nominal description. The inflection *-e* on *zieke* apparently closes off the NP to any further internal modification, preventing *zielige* (or any other adjective) from appearing within that NP. Instead, the adjective in (14) must only be able to come in at a later point in the derivation, once Num(ber) has been added. The syntactic structures corresponding to (14) and (15) are thus as in (16):

(16) a. [$_{DP}$ twee [$_{NumP}$ [$_{AP}$ zielige] [$_{NumP}$ -en [$_{NP}$ [$_{Adj}$ ziek] [$_N$ *pro*]]]]] [=14]
     b. [$_{DP}$ twee [$_{NumP}$ -en [$_{NP}$ [$_{AP}$ [$_{Adv}$ ernstig] [$_{Adj}$ ziek]] [$_N$ *pro*]]]] [=15]

The adverb in (16b) is in a position to form a complex adjective phrase with *ziek*. Since the effect of adverbial modification occurs within NP (which, recall, denotes a property of kinds), we account for the subkind interpretation. The attachment of *zielige* above NumP in (16a) entails that the adjective applies after the kind description $\lambda x[\textbf{sick}_{[+human]}(x)]$ is closed off to further modification; the adjective thus can only modify the instances of the kind described by NP. Note that the adjective does not get a non-restrictive interpretation, that is, (16a) does not entail that there are only two sick individuals. On the contrary, we can use adjective modifiers of inflected *zieke* to contrast two sets of sick people, as in (17):

(17) Er   liggen twee gemakkelijke, en   twee moeilijke   zieken
     there lie   two easy$_{[+e]}$ and two difficult$_{[+e]}$ sick$_{[+e]}$.PL
     in   kamer   10.
     in   room   10
     'There are two easygoing patients in room 10, and two who are
     difficult to handle.'

In (17), the additional adjectives simply describe the realizations of the kind: in this example, there are four patients in total, two of them with one incidental property, and two with another.

The human construction also allows modification by a relative clause. As illustrated in (18) and (19), respectively, both restrictive and non-restrictive interpretations are available:

(18) De rijken   die   door hard werken   hun rijkdom vergaard
       the rich$_{[+e]}$.PL who   by   hard work.INF their riches   gathered
       hebben, bravo. De   rijken   die   hun rijkdom vergaard hebben
       have   bravo The rich$_{[+e]}$.PL who their riches   gathered have
       op   de   rug   van   iemand   anders…
       on   the   back   of   somebody   else
       'The rich who acquired their riches by working hard, bravo. The rich who
       acquired their riches by exploiting others…'

(19) De meerderheid van   de   bevolking kon   zich ook geen vlees
       the majority   of   the population could REFL also no   meat
       veroorloven. Dit was   weggelegd voor de   rijken,   die   vlees
       afford   this was   reserved   for   the rich$_{[+e]}$.PL who   meat
       consumeerden in   overvloed.
       consumed   in   abundance
       'The majority of the population could not afford meat. This was only
       possible for the rich, who consumed meat in abundance.'

The relative clause in (18) is used to contrast two groups of rich people who acquired their riches in different ways, so it restricts the denotation of the human construction. The relative clause in (19) has a non-restrictive interpretation, providing additional information about an independently identifiable group of rich people.

These two types of relativization are also straightforwardly expected on our account. The insight that restrictive relative clauses attach to (some projection of) the noun phrase rather than the DP goes back at least to Partee (1975). We take them to attach to NumP, like the adjective in (16a). We analyze non-restrictive relatives as adjoined to DP, following the treatment in Potts (2005) and earlier work by McCawley (1998) and Del Gobbo (2003). This leads to the structures in (20a) and (20b), respectively, for the restrictive and non-restrictive relative clauses in (18) and (19):

(20) a. [$_{DP}$ de [$_{NumP}$ [$_{NumP}$ -en [$_{NP}$ [$_{AP}$ rijk] [$_N$ pro]]] [$_{CP}$ die… (restrictive)]]]
          [=18]
      b. [$_{DP}$ [$_{DP}$ de [$_{NumP}$ -en [$_{NP}$ [$_{AP}$ rijk] [$_N$ pro]]]][$_{CP}$ die… (non-restrictive)]]
          [=19]

In (20a), the relative clause serves to pick out a potentially proper subset of rich people, whereas in (20b) the relative clause serves as the predicate of an independent proposition, applied to the referent of *de rijken*, providing additional

information about the people identified as rich by the inflected adjective. See Potts (2005, Chap. 3) for the details of the semantic analysis of non-restrictive relatives.

In sum, the human construction involves a null noun, which denotes the property of human kinds. The inflectional marker -*e* sits in Num, and introduces the Carlsonian realization relation **R** that yields a set of individuals with the property **Adj**. The inflection marker -*n* pluralizes this set. As a result of the combination with the adjective, we obtain a set of people with the property **Adj** (singular) or **Adj*** (plural). This expression is of the right type to be taken as the argument of any determiner or article, which accounts for the wide range of determiners and quantifiers in (6). Both adjectival and adverbial modification is possible, depending on the attachment site: adverbials combine with the inflected adjective and build an adjective phrase below Num, whereas modifying adjectives combine at a later stage (after the inflected adjective has combined with the null noun). Both restrictive and non-restrictive relative clauses appear, with the same syntax–semantic interface as in any other DP.

The distributional, syntactic and semantic properties of the human construction are quite straightforward, and although the syntax–semantics interface we presented is new, it will not strike anyone as highly unusual. In contrast, the abstract object and relational constructions are more challenging. In general, these two constructions are not distinguished in the literature, presumably because they are both introduced by the neuter definite article *het*, and—to our knowledge—no one has delved more deeply into their syntactic and semantic properties. It will be easier to distinguish the two constructions after we have built the syntax–semantics interface for the abstract object construction, to which we now turn.

4 The abstract object construction

Kester (1996) proposes an analysis of the abstract object construction in (5b) in terms of an adjective modifying a null noun *pro* with the features [+mass, -animate]. In support of the adjectival analysis of the abstract object construction, we find that *het* + inflected adjective can be preceded by degree modifiers (21a) and other adverbs (21b), can appear in comparative and superlative forms (21c), and can be preceded by adjuncts and complements (21d), all of which we have already seen for the human construction (examples from Kester 1996, p. 244):

(21) a. het   zeer   onverwachte
          the   very$_{Adv}$ unexpected$_{[+e]}$
          'that which is/was very unexpected'
      b. het   onlangs   gebeurde
          the   recently$_{Adv}$ happened$_{[+e]}$
          'that which recently happened'
      c. het   allerduurste
          the   all-expensive-superlative$_{[+e]}$
          'that which is super-expensive'

d. het   voor   mij   onacceptabele
   the   for   me   unacceptable[+e]
   'that which is unacceptable to me'

The inflected adjective in the abstract object construction is also not compatible
with diminutives, though this could also be due to the fact that the diminutive suffix
is restricted to count nouns, and Kester qualifies the null noun in these constructions
as mass. On this analysis, then, the different articles in each construction identify
different semantic features of *pro*: the common gender article *de* identifies animate
or human count *pro*, whereas neuter *het* identifies inanimate or non-human mass
pro.

   Besides the definite article *het*, we find the neuter form of the proximal and distal
demonstrative articles *dit* (22a) and *dat* (22b) in the abstract object construction.
The predeterminer *al* 'all' combines either with the definite (22c) or with the
demonstrative (22d). It indicates maximality, as opposed to uniqueness, in the
interpretation of the determiner.

(22) a. Maar toch merk je   dat **dit onzekere   in zijn karakter** zit.
        but   yet   notice you   that this uncertain[+e] in his   character sits
        'But yet you notice that this uncertainty is in his character.'
     b. Ze   haatte **dat onverschillige in zijn houding**.
        she   hated   that indifferent[+e] in his attitude
        'She hated that indifference in his attitude.'
     c. We   willen een gemeenschap zijn die   met   beide benen in   de
        we   want   a   community   be   that with both legs   in   the
        samenleving staat,   met   **al het goede   en   mooie**   verder
        society   stands   with all the good[+e] and   beautiful[+e] on
        gaat en   werkt aan **al het moeilijke**   dat   er   is.
        goes and works on   all the difficult[+e] that there is
        'We want to be a community that stands with both feet in society,
        continues all that is good and beautiful, and works on everything
        that is difficult.'
     d. Als hij er   over   zou   beginnen zou   jij   misschien
        if   he   there about would start   would you   maybe
        herinnerd worden aan **al dat nare   van   gister**.
        reminded become of   all that nasty[+e]   from   yesterday
        'If he would start talking about it, it might remind you of all that
        nasty stuff from yesterday.'

However, we do not think these parallels with the human construction are sufficient
to motivate the same null noun analysis. An important difference with the human
construction is that the abstract object construction can only be headed by the
definite article or a demonstrative (23a, b), and not by the indefinite article, a
numeral or a quantifier of any sort:

(23) *een onzekere   / *twee moeilijke(n)   / *ieder nare   /
      an   uncertain$_{[+e]}$ / two   difficult$_{[+e]}$(.PL) / every nasty$_{[+e]}$ /
      *een beetje onverschillige / *veel moeilijke / *weinig goede   /
      a   bit   indifferent$_{[+e]}$ / much difficult$_{[+e]}$ / little   good$_{[+e]}$ /
      *het meeste mooie
      the most   beautiful$_{[+e]}$

If abstract object constructions involved a null mass noun, as proposed by Kester (1996), this would explain the incompatibility with count indefinites, numerals, plurality and distributive *ieder* 'every.' However, it would not explain why the adjective does not combine with partitive expressions such as *een beetje* 'a bit' that take mass nouns (*een beetje zout* 'a bit of salt'), or indefinites like *veel* 'many/much' and *weinig* 'few/little' that have both count and mass uses (*veel boeken* 'many books,' *veel olie* 'much oil'; *weinig kinderen* 'few children,' *weinig peper* 'little pepper'). Although we find *al het* 'all the' with a maximality interpretation in (22c), we do not find *het meeste* 'most,' even though *meeste* is otherwise compatible with both mass and count nouns (*het meeste water* 'most of the water,' *de meeste studenten* 'most of the students'). The null noun analysis of the human construction provided an attractive account of the wide range of possible determiners and quantifiers in examples like (6). The lack of this freedom with the abstract object construction therefore provides a strong argument against a null noun analysis.

Instead, we propose that the null *pro* that Kester saw evidence for in this case is a pronominal DP, not a null noun, and contributes a free variable that is sortally restricted to inanimate mass reference. The inflected adjective predicates over this free variable, creating an open proposition of the form **Adj**(x). This difference is small but crucial. Syntactically, the proposal implies that the inflected adjective builds a small clause in combination with *pro*, rather than building an NP. The small clause is embedded under *het* in a DP structure.[7] This reflects our intuition that this structure bears a strong semantic similarity to a free relative: 'that which is Adj.' The use of the definite article fits with the observation that free relatives are definite descriptions (Dayal 1995; Jacobson 1995; and others). The PP *in de mens* 'in the human being' functions as a locative modifier of the small clause (SC). The result is shown in (24):

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[7] We should point out that adjectives with predicative uses normally appear in the short form, rather than the long form:

(i)   De tafel is rood /*rode.
      the table is red / red$_{[+e]}$
      'The table is red.'
(ii) Ik vind dit mooi /*mooie.
      I   find this nice / nice$_{[+e]}$
      'I find this nice.'

What unites the examples in (i) and (ii) in contrast to the constructions we discuss in the text is that the adjective in them is selected by a higher predicate (here *is*, *vind*). Though we must leave this issue for future research, we suggest that the inflection marker *-e* in the abstract object construction may be the counterpart of the higher predicate in (i) and (ii).

(24)   [$_{\text{DP}}$ het [$_{\text{SC}}$ [[$_{\text{Adj}}$ goede] [$_{\text{DP}}$ *pro*]][$_{\text{PP}}$ in [$_{\text{DP}}$ de mens]]]]

The definite article *het* introduces closure over the open proposition. For its semantics, we adapt Hinterwimmer's (2013) implementation of the iota operator in his analysis of free relatives. Hinterwimmer provides both extensional and intensional variants, which we use for *het* in (25c) and (26c), respectively. Here *s* is a situation or world variable (we use an intensional version of the adjectives here). The extensional definition of *het* is used for non-generically interpreted DPs, as in (25), whereas the intensional definition is used when the DP has a generic interpretation, as would be possible with (26). The difference is simply that the extensional definition introduces a specific situation or world variable, indicated as s_1, which saturates the lambda-bound situation variable and gets valued by the assignment function *g* with respect to which the sentence is evaluated (25c, d). Technically, the iota operator forces lambda abstraction over the variable $x_{\text{[-anim, -count]}}$ of the open proposition in the (a) examples to have taken place prior to application (25d, 26b). As in (13) above, P^* (e.g., here, **Discussed***) is the closure of *P* under sum formation to account for mass nouns (Link 1983). The PP is added as an intersective modifier in the (b) examples.

(25)   het besprokene   in de   vergadering
      the discussed$_{[+e]}$ in the   meeting
      'what was discussed in the meeting'
      a. $[[besprokene\ pro]]^{g,s}$: $\lambda s[\textbf{Discussed*}(x_{\text{[-anim, -count]}})(s)]$
      b. $[[besprokene\ pro\ in\ de\ vergadering]]^{g}$:
          $\lambda s[\textbf{Discussed*}(x_{\text{[-anim, -count]}})(s) \land \textbf{In}(x_{\text{[-anim, -count]}}, \textbf{the meeting})(s)]$
      c. $[[het_1\ s_1]]^{g}$: $\lambda P_{\langle e,\langle s,t\rangle\rangle}\iota x[P(x_{\text{[-anim, -count]}})(g(s_1))]$
      d. $[[het_1\ s_1\ besprokene\ pro\ in\ de\ vergadering]]^{g}$:
          $\lambda P_{\langle e,\langle s,t\rangle\rangle}\iota x[P(x_{\text{[-anim -count]}})(g(s_1))](\lambda x \lambda s[\textbf{Discussed*}(x_{\text{[-anim, -count]}})(s) \land$
          $\textbf{In}(x_{\text{[-anim, -count]}}, \textbf{the meeting})(s)])$
          $= \iota x[\textbf{Discussed*}(x_{\text{[-anim, -count]}})(g(s_1)) \land \textbf{In}(x_{\text{[-anim, -count]}}, \textbf{the meeting})(g(s_1))]$

(26)   het goede   in de   mens
      the good$_{[+e]}$ in the   human-being
      'what is good in man'
      a. $[[goede\ pro]]^{g}$: $\lambda s[\textbf{Good*}(x_{\text{[-anim, -count]}})(s)]$
      b. $[[goede\ pro\ in\ de\ mens]]^{g}$: $\lambda s[\textbf{Good*}(x_{\text{[-anim, -count]}})(s)$
          $\land\ \textbf{In}(x_{\text{[-anim, -count]}}, \textbf{man})(s)]$
      c. $[[het_2]]^{g} = \lambda P_{\langle e,\langle s,t\rangle\rangle}\ \lambda s \iota x[P(x_{\text{[-anim, -count]}})(s)]$
      d. $[[het_2\ goede\ pro\ in\ de\ mens]]^{g}$: $\lambda s \iota x[\textbf{Good*}(x_{\text{[-anim, -count]}})(s)$
          $\land\ \textbf{In}(x_{\text{[-anim, -count]}}, \textbf{man})(s)]$

The DP in (26d) has the semantic type of an individual concept and corresponds to the denotation that Chierchia (1998) provides for kind-denoting bare plurals. The intensional definition of *het* in (26c) returns a function that for each possible world or situation returns the maximal sum individual satisfying the predicate in that world/situation. In combination with the semantics of the PP as a conjunctive

modifier, introducing a general locative relation between the variable x and the denotation of *de mens*, we obtain the kind-denoting interpretation paraphrasable as 'everything that is good in humankind.' In contrast, the extensional definition in (25) returns the maximal sum individual that satisfies the predicate with respect to a contextually given situation or the world of evaluation. With the modifier added in, this yields a non-generic interpretation paraphrasable as 'what was discussed in the meeting.'

Under the analysis of the abstract object construction as similar to a free relative, the restriction to the definite or demonstrative article follows from the maximal sum interpretation. The predeterminer *al* can be added because it further emphasizes maximality. The abstract object construction does not contain a NumP, and thus does not involve reference to a property that just any determiner or quantifier could take as an argument. This accounts for the infelicity of other quantifiers in this configuration (cf. 23), in contrast to the much wider range of determiners we find in the human construction (cf. 6).

We might expect the abstract object never to accept adjectival modifiers and relative clauses, unlike the human construction, since the Adj + *pro* is a small clause rather than an NP or NumP and thus has a propositional, rather than property-type, semantics that should be incompatible with adjectival modification. In fact, Kester ([1996]) claims that the abstract object construction does not accept adjectival modifiers. It turns out that restrictively interpreted descriptive adjectives are, indeed, excluded: only the short (adverbial) forms are possible in (27). However, a small subset of adjectives is attested: the inflection on *enige*, *andere*, *eerste*, *vermeende*, *mooie*, *vele*, and *weinige* in (28) shows that these modifiers are not adverbs[8]:

(27) a. het   recent   / *recente   besprokene
         the   recent$_{Adv}$ / recent$_{[+e]Adj}$ discussed
         'the   matters   recently   discussed'
     b. het   moreel   / *morele   goede in de ander
         the   moral$_{Adv}$ / moral$_{[+e]Adj}$ good   in the other
         'the moral good in the other'

(28) a. **Het enige bijzondere in Pisa** is de   toren   en
         the   only   special$_{[+e]}$ in Pisa is the tower   and
         het is daar enorm toeristisch, dus wellicht dat je
         it   is there very   touristy   so   maybe   that you
         liever toch   een   andere   stad   bezoekt?
         rather yet   another city   visit
         'The only special thing in Pisa is the tower, and it is very touristy there, so maybe you prefer to visit another town after all?'

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[8] These are examples from the internet, tested against native speaker intuitions. Incidentally, Ellen-Petra Kester (p.c.) accepts them as well.

b. Een blog over   eten,   drinken, genieten, muziek, films,   voetbal
   a   blog about eat.INF drink.INF enjoy.INF music   movies soccer
   en   al   het   andere   leuke   in   het   leven!
   and   all   the   other[+e] nice[+e] in   the   life
   'A blog about eating, drinking, enjoying, music, movies, soccer and all
   the other nice things in life!'

c. Met Spike was het   ook anders,   die   kwam uit zo'n ellende
   with Spike was it   also different DEM came out such misery
   en   ik   was **het   eerste   leuke   in   zijn   leven**.
   and   I   was the   first[+e] fun[+e] in   his   life
   'With Spike it was different, he came out of such misery, and I was the
   first fun thing in his life.'

d. In die   zin   vind ik het vreemd, en   ook heel jammer, dat
   in that sense find I   it   strange and also very pitiful   that
   een discussie   die   ik startte over **het vermeende**
   a   discussion that I   started about the   alleged[+e]
   antisemitische van   Luther op slot is gezet.
   anti-semitic[+e] of   Luther   on lock is put
   'In that sense, I find it strange, and also a pity, that a discussion that
   I started on the alleged anti-Semitism of Luther has been put on hold.'

e. En   ook een paar   echte Woerdenaren   die   **het**
   and also a   couple real   Woerden-inhabitants who the
   mooie   oude   in Woerden zelf ter harte nemen.
   beautiful[+e] old[+e] in Woerden   self to   heart take
   kaaspakhuisje   hier, boerderij daar.
   cheese-warehouse.DIM here farm   there
   'And also a couple of real inhabitants of Woerden, who take to heart the
   beautiful old things in Woerden. Here a cheese warehouse, there a farm.'

f. Waarna   we weer vrolijk   de   bus ingingen   en   de   tweede
   whereafter we again happily the   bus in   went and the   second
   helft van de   reis voldaan van **het vele   goede   van de**
   half of   the trip satisfied of   the   many[+e]   good[+e]   of   the
   hele   dag met een dutje afsloten.
   whole   day with a   nap   off-closed
   'After which we happily got back into the bus, and completed the second
   half of the trip satisfied by the many good things of the day.'

g. een gedeelte van **het weinige nieuwe onder de   zon**
   a   part   of   the little[+e] new[+e]   under the sun
   'a part of the few new things on Earth'

Crucially, though, the categories of adjectives that we find are limited to DP-internal
only (28a), *other* (28b), ordinals like *first/last* (28c), intensional adjectives (28d),
non-restrictively used evaluative adjectives (28e) and adjectival *many/much* and
few/little (28f, g). The evaluative adjectives can be analyzed extending Potts' (2005)
analysis of epithets (e.g. *damned* in *the damned dog*). Like epithets, non-restrictive
adjectives do not form part of what is at issue in utterances containing them. Potts

accounts for this by composing the predication of the adjective with the entity denoted by the DP on the whole as an independent, conventionally implicated proposition in parallel to the composition of the rest of the descriptive content of the DP. Thus, the modified small clause in (28e), setting aside the PP for simplicity, would be analyzed as in (29)[9]:

(29) a. [[*oude pro*]]: $\lambda s[\mathbf{Old^*}(x)(s)]$
     b. [[*mooie oude pro*]]: At issue content: $\lambda s[\mathbf{Old^*}(x)(s)]$
                                Conventional implicature: $\lambda s[\mathbf{Beautiful^*}(x)(s)]$

If, as suggested in footnote 7, the inflection serves to license predication in the absence of an overt licensing predicate such as the copula, we can make sense out of the fact that it appears on the adjective in this case.

Adjectival *vele* and *weinige* are necessarily interpreted as cardinal or amount oriented (de Hoop 1992). Just like the evaluative adjectives, their use in the abstract object construction is non-restrictive in nature, so we take them to be composed in parallel to the descriptive adjective, rather than interacting with it, as in (29). We do not work out the formal details here, but the approach allows adjectival *vele* and *weinige* in (28f, g) to describe the maximal sum of everything that is Adj as a high amount.

Interestingly, the remaining classes of adjectives have in common that they can all be analyzed as propositional, rather than predicate, modifiers. Consider intensional adjectives first. Larson (2002) argues for a general theory of intensionality as what he calls a 'sentential' phenomenon. The intuition, as we understand it, is that intensional predicates always express relations to thoughts or proposition-like objects. On such a view, which we adopt here, intensional adjectives such as *vermeende* 'alleged' express a relation to a proposition about the applicability of a(n adjectival) property to some individual. Though Larson does not provide a fully explicit semantics for intensional adjectives, he says the following:

> Consider the case of fully intensional adjectives. We suggested a sententialist analysis of their corresponding adverbs in which the latter combined with a clause-like VP: one that contained both subject and predicate. To duplicate this idea, we would evidently need to view the nominal in cases like alleged dancer as containing a subject, which, for concreteness, we might construe as a silent pronoun (*pro*):
>
> Olga interviewed an alleged [$_{NP}$ *pro* dancer].
> 'Olga interviewed an x such that it is alleged that x is a dancer'
>
> (Larson 2002, pp. 253–254)

Though Larson acknowledges that in the ordinary case it is not trivial to justify the sort of syntax he proposes for *an alleged dancer*, for the Dutch cases that interest us, this is exactly what the small clause analysis provides us. The composition of the DP in (28d) (leaving out the PP for the sake of simplicity) can thus be sketched as in (30):

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[9] For readability, hereafter, unless necessary, we suppress the assignment function and situation indices on the denotations as well as the sortal restriction subscripts on the variable contributed by *pro*.

(30) a. $[\![vermeende]\!]^g$: $\lambda p_{\langle s,t\rangle}\lambda s[\mathbf{Alleged}(p)(s)]$

    b. $[\![antisemitische\ pro]\!]^g$: $\lambda s[\mathbf{Anti\text{-}Semitic}^*(x)(s)]$

    c. $[\![vermeende\ antisemitische\ pro]\!]^g$: $\lambda s[\mathbf{Alleged}(\mathbf{Anti\text{-}Semitic}^*(x)(s))]$

    d. $[\![het\ s_1\ vermeende\ antisemitische\ pro]\!]^g$:

        $\iota x[\mathbf{Alleged}(\mathbf{Anti\text{-}Semitic}^*(x)(g(s_1)))]$

The semantics of *vermeende* in (30a) allows it to combine directly with the small clause in the abstract object construction as an open proposition in (30b), as shown in (30c). (30d) gives us the maximal sum of what is alleged to be anti-Semitic about Luther in the world under consideration. With respect to the presence of the inflection, we suggest that, as with the evaluative adjectives, it is present to license predication, in this case between the adjective and its propositional argument. We extend the same explanation to account for the presence of inflection on *enige* 'only' and ordinals, to which we now turn.

Consider first *enige*. The classic analysis of English *only* in Rooth (1985) treats it as a focus-sensitive propositional operator that quantifies over the set of alternative propositions that constitutes the focus semantic value of its argument. For example, the set of alternatives for *John introduced* [*Bill*]$_\mathrm{F}$ *to Sue* is the set of all propositions obtained by substituting all of the alternatives x to the focused constituent *Bill* (31a) into the argument position occupied by *Bill* (31b). *Only* quantifies over this set of alternatives, and asserts that the sole value of x that makes the proposition true is Bill (31c):

(31) John only introduced [Bill]$_\mathrm{F}$ to Sue

    a. $\mathbf{Alt}(Bill)$: $\{\mathbf{a},\mathbf{b},\mathbf{c},\mathbf{d},\ldots\}$

    b. $\mathbf{Alt}(John\ introduced\ [Bill]_\mathrm{F}\ to\ Sue)$:

        $\{p : \exists x \in \mathbf{Alt}(Bill)[p = \mathbf{Introduce}(\mathbf{s})(x)(\mathbf{j})]\}$

    c. $\mathbf{Introduce}(\mathbf{j},\mathbf{b},\mathbf{s}) \wedge \forall p[p \in \mathbf{Alt}(\mathbf{Introduce}(\mathbf{s})(\mathbf{b})(\mathbf{j})) \wedge$

        $\mathbf{True}(p) \rightarrow p = \mathbf{Introduce}(\mathbf{s})(\mathbf{b})(\mathbf{j})]$

We can give exactly the same sort of semantics to *enige* in the abstract object construction. The only difference is that the alternatives over which *enige* quantifies are determined by the different possible values of the free variable x in the open proposition corresponding to the small clause; we also intensionalize the semantics of *enige* (vs. what is sketched for *only* in 31c) to fit with the rest of our analysis of the DP. By way of example, we work out the analysis of the *het* DP from (28a) in (32):

(32) Het enige bijzondere in Pisa is de toren.

     the only special$_{[+e]}$ in Pisa is the tower

    a. $[\![enige]\!]^g$: $\lambda p_{\langle s,t\rangle}\lambda s[p(s) \wedge \forall q[q \in \lambda s'[\mathbf{Alt}(p)(s')] \wedge q(s) \rightarrow q = p]]$

    b. $[\![bijzondere\ pro]\!]^g$: $\lambda s\ [\mathbf{Special}^*(x)(s)]$

    c. $\mathbf{Alt}(bijzondere\ pro)$: $\{q: \exists y \in \mathbf{Alt}(x)[q = \lambda s'\ [\mathbf{Special}^*(y)(s')]]\}$

    d. $[\![enige\ bijzondere\ pro]\!]^g$:

        $\lambda s[\mathbf{Special}^*(x)(s) \wedge \forall q[q \in \mathbf{Alt}(\lambda s'\ [\mathbf{Special}^*(x)(s')]) \wedge$

        $q(\mathrm{s}) \rightarrow q = \lambda s'[\mathbf{Special}^*(x)(s')]]$

    e. $[\![het_1\ s_1\ enige\ bijzondere\ pro]\!]^g$: $\iota x[\mathbf{Special}^*(x)(g(s_1)) \wedge$

        $\forall q[q \in \mathbf{Alt}(\lambda s'[\mathbf{Special}^*(x)(s')]) \wedge q(g(s_1)) \rightarrow q = \lambda s'[\mathbf{Special}^*(x)(s')]]$

The analysis of *andere* in (28b) is similar, except that it involves existential, rather than universal quantification over alternatives.

For the analysis of (28c), we need a semantics for ordinals. To start, slightly adapting a proposal in Yee (2010), we rely on the notion of well-ordering in (33):

(33) A set X is *well-ordered* by $\leq$ iff
    a. X linearly ordered by $\leq$
    b. $\forall Y.Y \subseteq X [Y \neq \varnothing \rightarrow \exists y \in Y.\forall z \in Y.y \leq z]$

In prose: every non-empty subset of a linearly ordered set has a first/least element. The intuition we have about ordinals is that they combine well-ordering with the exclusion of other values, a property they share with *only*. The difference is that alternatives have the structure of a well-ordered set, as indicated by the subscripted **Alt**$_{wo}$ in (34):

(34) a. $[[eerste]]$: $\lambda p_{\langle s,t\rangle}\lambda s[p(s) \wedge \forall q[q \in \lambda s'[\textbf{Alt}_{wo}(p)(s')] \wedge q(s)$
       $\rightarrow p(s) \leq q(s)]]$
    b. $[[laatste]]$: $\lambda p_{\langle s,t\rangle}\lambda s[p(s) \wedge \forall q[q \in \lambda s'[\textbf{Alt}_{wo}(p)(s')] \wedge q(s)$
       $\rightarrow q(s) \leq p(s)]]$

The denotation of (28c), repeated in (35), can now be spelled out as in (35a–d), again using the extensional definition of the iota operator given the episodic context:

(35) Het eerste leuke (in zijn leven)
      the first$_{[+e]}$ nice$_{[+e]}$ (in his life)
    a. $[[leuke\ pro]]^g$: $\lambda s[\textbf{Nice}^*(x)(s)]$
    b. $\textbf{Alt}_{wo}(leuke\ pro)$: $\{q: \exists y \in \textbf{Alt}(x)[q = \lambda s'[\textbf{Nice}^*(y)(s')]]\}$,
       a well-ordered set.
    c. $[[eerste\ leuke\ pro]]^g$: $\lambda s[\textbf{Nice}^*(x)(s) \wedge \forall q[q \in \textbf{Alt}_{wo}(\lambda s'[\textbf{Nice}^*(x)(s')]) \wedge$
       $q(s) \rightarrow \textbf{Nice}^*(x)(s) \leq q(s)]]$
    d. $[[het_1\ s_1\ eerste\ leuke\ pro]]^g$: $\iota x[\textbf{Nice}^*(x)(g(s_1)) \wedge \forall q[q \in$
       $\textbf{Alt}_{wo}(\lambda s'[\textbf{Nice}^*(x)(s')] \wedge q(g(s_1)) \rightarrow \textbf{Nice}^*(x)(g(s_1)) \leq q(g(s_1))]]$

The ordering of the set of alternative values for p, the open proposition denoted by the abstract object construction, is strongly context dependent. In the case of (35b), we can assume that the order is identified with the linear structure assumed for the time axis. The first nice thing in Spike's life is then the nice thing that happened earlier in time than any other nice thing that happened in his life. However, we can also imagine more abstract orderings, e.g. in terms of importance. Given that the exact interpretation depends on the context, we do not think it needs to be fixed as part of the semantics of the ordinal.

In conclusion, the small clause analysis we propose correctly predicts that restrictively interpreted descriptive adjectives are not acceptable in the abstract object construction (cf. 27). The empirical data confirm that adjectival modification

is restricted to evaluative adjectives, adjectival *much/little*, intensional adjectives, *only*, *other*, and ordinal *first/last* (cf. 28). These adjectives all have either a non-restrictive semantics or a propositional semantics that combines easily with the free relative interpretation of the abstract object construction. We take this to provide further support for the small clause analysis, and against the null noun analysis used for the human construction.

Kester (1996) does not discuss the possibility of modification by relative clauses for the abstract object construction. Recall that both restrictive and non-restrictive relative clauses are found in the human construction (cf. 18, 19). We find both in the abstract object construction as well:

(36) a. **Al het vervelende   dat hoort bij   zijn ziekte** kon   hij die
　　　　all the annoying$_{[+e]}$ that comes with his   illness could he that
　　　　dag even   vergeten, en   dat is denk ik precies de
　　　　day shortly forget   and that is think I   exactly the
　　　　bedoeling   voor   zo'n   jochie.
　　　　intention   for   such-a   kid
　　　　'All the annoying things that come with his illness, he could forget for
　　　　a moment that day, and that is exactly what such a kid needs, I think.'

　　 b. Japanners die   de   galerie bezochten, verbaasden zich over
　　　　Japanese who the gallery visited   surprised   REFL about
　　　　het gewone   dat van der **Kleij fotografeerde**.
　　　　the ordinary$_{[+e]}$ that van der Kleij photographed
　　　　'Japanese visitors of the gallery were surprised about the ordinary
　　　　things that van der Kleij took pictures of.'

(37) a. Want **het goede   dat** ik wil,   doe ik niet, maar **het kwade,**
　　　　for   the good$_{[+e]}$ that I want do I   not   but   the evil$_{[+e]}$
　　　　dat ik niet wil,   dat doe ik.
　　　　that I   not want   that do I
　　　　'For good, which I want, I do not do, but evil, which I do not want,
　　　　that I do.'

　　 b. Het is wel   goed dat we weer   eens   even niet enkel het
　　　　it is though good that we again once   just   not only   the
　　　　verdrietige of sombere   naar boven halen maar ook **het leuke**
　　　　sad$_{[+e]}$ or gloomy$_{[+e]}$ to   up   hold but   also the nice$_{[+e]}$
　　　　waarvan we   genoten   hebben.
　　　　whereof we   enjoyed   have
　　　　'It is good though that for once we do not just remember the sad and
　　　　gloomy things, but also the nice things, which we enjoyed.'

The relative clauses in (36) restrict the denotation of the abstract object to annoying things that come with the illness in question (rather than annoying things in general) and ordinary things that van der Kleij took pictures of (rather than ordinary things in general), respectively. In contrast, the non-restrictive relative clauses in (37) provide elaborations on the abstract objects denoted by

het goede, *het kwade*, *het leuke*. Note that the relative clause in (37b) is introduced by a so-called R-pronoun, a *wh*-expression which shows up as a relative pronoun linked to the complement of a preposition (van Riemsdijk 1985). We can analyze the non-restrictive relative clauses as attached at the DP level, just as we did for the human construction. For the restrictive relative clauses modifying inflected adjectives in the human construction, we posited that they attach at a lower level. However, given the small clause analysis we have adopted for the abstract object construction, we cannot use exactly the same semantics as we would for a property-type modifier of NumP. Instead, we hypothesize that what differentiates relative clauses from adjectives is the fact that they, like the small clause formed in the abstract object construction, semantically correspond to an open proposition, as in (38b). This allows for a conjunctive analysis of their semantic composition, as in (38) (we gloss over the other details of the internal semantics of the relative clause, as they are orthogonal to the main argumentation):

(38) het gewone   dat van der Kleij fotografeerde
     the ordinary$_{[+e]}$ that van der Kleij photographed
     'the ordinary things that van der Kleij took pictures of'
     a. [[*gewone pro*]]: $\lambda s[\mathbf{Ordinary^*}(x)(s)]$
     b. [[*dat van der Kleij fotografeerde*]]: $\lambda s[\mathbf{Photographed^*}(x)(\mathbf{vdK})(s)]$
     c. [[*gewone pro dat van der Kleij fotografeerde*]]:
        $\lambda s[\mathbf{Ordinary^*}(x)(s) \wedge \mathbf{Photographed^*}(x)(\mathbf{vdK})(s)]$

We conclude that Kester (1996) was essentially correct in observing that ordinary descriptive adjectival modification is unavailable in the abstract object construction, and that both this restriction and the exceptions to it are naturally accounted for under the small clause syntax, with its corresponding semantics in terms of open propositions.

5 The relational inflected adjective construction

We now turn to the last of the three constructions, which we have dubbed the relational inflected adjective construction. At first sight, there are many similarities between the abstract object construction and the relational inflected adjective, to the point that Kester (1996) and Broekhuis et al. (2013) do not distinguish the two. However, there are also crucial differences in their distribution and semantic properties that lead us to reject for the relational adjective construction the free relative-like semantics that we posited for the abstract object construction. In Sect. 5.1, we focus on distributional similarities and differences between the abstract object construction and the relational inflected adjective. Section 5.2 develops the syntax and semantics of relational inflected adjectives.

5.1 The relational inflected adjective as a separate construction

We begin by reviewing the similarities between the two constructions. First, as in the abstract object construction, the inflected form in the relational construction is really an adjective. For example, it takes adverbial rather than adjectival modification (39a–c). In (39a) we find the adverbial degree modifier *al te* 'all too'; *intens* 'intense' in (39b) qualifies as an adverb, as shown by the fact that it cannot bear inflection in a context where an adjective would have to bear it (cf. 2 above). The adjective can also appear in synthetic as well as analytical comparative/superlative forms (39c, d):

(39) a. **Het al te zure van citrusvruchten** is in deze confiture
       the all too sour$_{[+e]}$ of citrus-fruits is in this jam
       verdwenen.'
       disappeared
       'The all too sour (aspect) of citrus fruits is lacking in this jam.'
   b. Zonder licht, om **het intens / *intense rode van de**
       without light, in-order the intense$_{Adv}$ / intense$_{Adj}$ red$_{[+e]}$ of the
       ondergaande zon niet te verstoren.
       setting sun not to disturb
       'Without light, so as not to disturb the intense redness of the sunset.'
   c. De acteerprestaties zijn eigenlijk **het minst interessante aan**
       the acting-performances are in fact the least interesting$_{[+e]}$ at
       deze film.
       this movie
       'The acting is in fact the least interesting aspect of this movie.'
   d. Hoe hij gestalte geeft aan deze koning vind ik nog **het**
       how he portrait gives of this king find I yet the
       sterkste aan de hele film.
       strongest$_{[+e]}$ at the whole film
       'The way he portrays this king, I find to be the strongest feature of the entire movie.'

Second, just like the abstract object construction, the relational inflected adjective resists indefinite articles, quantifiers and plurality (40):

(40) *een / *ieder vreemde / *de vreemdes / *de vreemde(n) van
     a / every strange$_{[+e]}$ / the strange$_{[+e]}$.PL / the strange$_{[+e]}$(.PL) of
     deze situatie (…)
     this situation (…)

Third, the relational inflected adjective shares the restrictions on adjectival modification with the abstract object construction. Recall that we only find short (adverbial) modifiers in (27), not long (adjectival ones), and only a few subclasses of adjectival modifiers appear in (28). We find the same restrictions with the relational inflected adjective construction: *enige* (41a), *andere* (41b), ordinals (41c),

intensional adjectives (41d), and non-restrictively used evaluative adjectives (41e, f), though we note that the latter two sorts of adjectives have turned up extremely rarely in corpus searches.

(41) a. **Het enige leuke   aan niet naar school kunnen gaan** is niet
the only nice$_{[+e]}$ at not to school can.INF go.INF is not
naar school gaan. Voor de rest is het vooral   ′n hoop
to   school go.INF for the rest is it especially a heap
administratie naast ander werk.
administration next   other   work
'The only nice thing about not being able to go to school is not going to school. For the rest, it is mostly a lot of administration and other work.'

   b. **Het andere   leuke   aan schilderen** is dat ik zelf altijd
the other$_{[+e]}$ nice$_{[+e]}$ of paint.INF is that I self always
het   meest onder de verf zit.
the   most   under the paint sit
'The other nice thing about painting is that most of the paint ends up on me.'

   c. **Het eerste vervelende   van de maatregel** is dat het voor
the first annoying$_{[+e]}$ of the measure   is that it   for
de   scholen lastig is om daar rekening mee te houden.
the schools tricky is to there account with to take
'The first annoying thing about the measure is that it is tricky for the schools to take that into account.'

   d. …bijvoorbeeld over **het vermeende goede   van hele hoge**
for-example   about the alleged$_{[+e]}$ good$_{[+e]}$ of   very high
eiwitpercentages
protein-percentages
'…for example about the alleged goodness of very high protein percentages'

   e. Dit is een jonge African Spoonbill waaraan   goed te zien is
this is a   young African Spoonbill which-of good to see is
dat hij nog niet op kleur is. Hij is nog wat   flets, en
that he yet not on color is he is still somewhat pale and
heeft niet **het mooie   rode van een volwassen exemplaar**.
has   not the beautiful$_{[+e]}$ red$_{[+e]}$ of an adult   exemplar
'This is a young African Spoonbill, which is not yet showing his full colors. It is still somewhat pale and doesn't have the beautiful red color of an adult exemplar.'

   f. Dit is een heerlijke couscous met het kruidige vlees en   **het**
this is a   delicious couscous with the spicy   meat and the
lekkere   zoete   van de pruimen en   abrikozen.
delicious$_{[+e]}$ sweet$_{[+e]}$ of the plums   and apricots.
'This is a delicious couscous with the spicy meat and the delicious sweet taste of the plums and apricots.'

Despite these similarities, the relational inflected adjective construction differs in a few important respects from the abstract object construction, which leads us to develop different analyses of the two constructions.

First, we observe that the relational inflected adjective is strictly restricted to the definite article *het*, even to the exclusion of demonstratives like *dit* and *dat* and the predeterminer *al* (cp. 22). We see this in the impossibility of creating variants of examples like (1c) or (5c) with demonstratives and *al* in (42a). Moreover, we cannot use adjectival *vele* or *weinige* in this configuration (42b, c). Note that this does not reflect a general incompatibility with a degree interpretation of the relational adjective, as the felicity of the adverbial use of *weinig* in (42c) illustrates.[10]

(42) a. Het/ *dit/ *al het vreemde   van de situatie   vind ik dat
        the/ this/ al the strange$_{[+e]}$ of the situation find I   that
        politieke partijen het   maar laten gebeuren.
        political   parties   it   just   let   happen
        'The / *this / *all the strange thing about the situation, I find, is that
        political parties just let it happen.'

     b. *het vele   goede   van zwemmen in de winter
         the much$_{[+e]}$ good$_{[+e]}$ of swimming   in the winter

     c. Het weinig / *weinige   vreemde   van de   situatie
        the little   / little$_{[+e]}$ strange$_{[+e]}$ of   the   situation
        'the not very strange aspect of the situation'

Intuitively, *al* is blocked in (42a) because the DPs do not refer to potentially maximal parts of something, which also suggests that we are not dealing with a free relative semantics here. *Vele* and *weinige* in (42b, c) are blocked because they can only be ascribed to measurable entities, but relational inflected adjectives are not perceived as mass-like. The difference between the abstract object construction and the relational inflected adjective is particularly clear when we consider the interpretation of examples involving inflected adjectives that describe concrete properties, such as the examples in (43) with color and taste adjectives:

(43) a. **Het rode   van de aardbeien**, **het witte**   **van de**
        The red$_{[+e]}$ of the strawberries the white$_{[+e]}$ of   the
        mascarpone en   de slagroom en de groene mintblaadjes
        mascarpone   and the cream   and the green mintleaves.DIM.PL
        kleurden   prachtig   bij   elkaar.
        colored   beautifully with   each-other
        'The red (aspect) of the strawberries, the white (aspect) of the
        mascarpone and the cream and the green mint leaves are a wonderful
        color combination.'

---

[10] Dutch *weinig* has a determiner use (both mass and count), an adjectival use, and an adverbial use. Dutch *veel* shares with *weinig* the determiner and adjectival use, but doesn't have an adverbial use. See Doetjes (1997) for discussion of quantifiers and categories.

b. **Het bittere   van het bier** is een mooi contrast met **het**
   the bitter[+e] of   the beer is a   nice contrast with the
   zoete   van de   mout.
   sweet[+e]   of   the   malt
   'The bitter (aspect) of the beer is a nice contrast with the sweet (aspect)
   of the malt.'

The *het* DPs in (43a) do not refer to colored parts of the strawberries or mascarpone,
or to colored stuff in/on them, as would be expected if we extended the mass-like
semantics of the abstract object construction to relational inflected adjectives. Nor
(even more clearly) do those in (43b) refer to the parts of the beer or malt with a
particular taste. Rather, they describe properties of the object contributed by the PP,
understood as a whole.[11] Adding *al* to these DPs, or using a demonstrative instead,
if felicitous at all, would imply, for instance, that the strawberries and mascarpone
could have had parts that were not red and white, respectively, or that the beer and
the malt could have parts that were not bitter and sweet, respectively. In other
words, the reference in the relational inflected adjective construction is truly unique,
as opposed to the maximal reference of the abstract object construction.

   Second, and relatedly, we observe that restrictive relative clauses do not appear
with relational inflected adjectives, although they are fine with the abstract object
construction. (44a) shows that we cannot replace the PP complement of a relational
inflected adjective with a restrictive relative clause, and (44b) that we cannot add
one to a relational inflected adjective with the PP.

(44) a. Het zoete   van de aardbeien / *dat de aardbeien   toevoegen
       the sweet[+e] of the strawberries / that the strawberries add
       wordt   getemperd door het frisse   van de   wilde
       becomes moderated by the fresh[+e] of the wild
       bessen / *dat de   wilde bessen   hebben.
       berries / that the wild   berries have
       'The sweetness of the strawberries/*that the strawberries add is
       moderated by the freshness of the wild berries/*that the wild berries add.'
   b. *het zwarte   van de nacht dat al het licht absorbeert
       the black[+e] of the night that all the light absorbs

In contrast, non-restrictive relative clauses do seem to be possible in principle,
though there are few attested examples. They typically do not appear with the
relative pronoun *dat* 'that,' but rather with the so-called R-pronoun *waar* (cf. also
37b).[12]

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[11] See McNally and de Swart (2011) for some discussion of how the DPs in (43) differ both from
uninflected color/taste nouns and deadjectival derived nominals like *roodheid* 'redness.'

[12] It may be the case that relative clauses with *dat* 'that' are not felicitous because its use creates
agreement problems between *het* and *dat/die* that do not show up with the R-pronoun *waar*. We leave this
open for further research.

(45)　a.　**Het mooie　　van Twilight** waar　ik WEL　naar uitkijk
　　　　　　the　beautiful$_{[+e]}$ of　Twilight where I　PART　to　out.look
　　　　　　zijn altijd　de　reacties　op recensies en　persberichten
　　　　　　are　always the reactions to　reviews　and press releases
　　　　　　hier　op　Filmtotaal.
　　　　　　here　at　Filmtotal
　　　　　　'The beautiful thing about *Twilight*, which I AM looking forward to,
　　　　　　is always the reactions to reviews and press releases here on Filmtotal.'
　　　b.　Nu　komt　**het vervelende　aan mediteren** waar　elke
　　　　　　now　comes　the　annoying$_{[+e]}$　at　meditate.INF where every
　　　　　　beoefenaar mee　te　maken krijgt.
　　　　　　practitioner with　to　make　gets
　　　　　　'Now comes the annoying thing about meditation, which everyone
　　　　　　practicing it has to deal with.'

The relative pronoun *waar* 'where' in (45a) does not refer to *Twilight* but rather picks up on the beautiful thing about *Twilight* as what I am looking forward to. Similarly, what everyone has to deal with in (45b) is the annoying aspect of meditation, not meditation in general. Thus, unlike restrictive relative clauses, non-restrictive relative clauses are not excluded, although they are rarely attested. The fact that restrictive relatives are impossible indicates that the adjective extension is subject to a uniqueness condition in the relational construction and cannot be interpreted as a mass with parts that could be distinguished via added information from a restrictive relative, as we have proposed for the abstract object construction.

A third indication of the special status of relational inflected adjective construction resides in the observation that the PP in the construction has a different status from that in the abstract object construction. In the abstract object construction, the PP is strictly optional. Examples without PPs appear in (5b), (22c), (36) and (37). When a PP does appear in the abstract object construction, it can be introduced by any number of locative prepositions, such as *in* ('in,' 22a, b), *van* ('of,' 22d, 28d, 43), *bij* 'with,' *op* 'on,' *rond* 'around,' or *aan* 'at,' as we see in the examples in (46):

(46)　a.　De kunst is om zo te leven dat we **dit goede　bij**
　　　　　　the　art　is to　so to live　that we this good$_{[+e]}$ with
　　　　　　elkaar　tevoorschijn roepen.
　　　　　　each-other　forward　call
　　　　　　'The art is to live in such a way that we bring out that which is good
　　　　　　in each other.'
　　　b.　Achteraf gezien, had ik beter nog een zomerlang　genoten
　　　　　　back　looked, had I　better still a　summer-long enjoyed
　　　　　　van **al het leuke　met mijn man**,　vele fiets-
　　　　　　of　all the nice$_{[+e]}$ with my　husband, many bike
　　　　　　en　leuke　wandeltochtjes…
　　　　　　and　nice　hiking-tours
　　　　　　'Looking back, I would have been better off spending another summer enjoying
　　　　　　all the nice things with my husband, making bike and fun hiking tours…'

   c. Het zijn mild   geformuleerde stellingen, die ons tot tevredenheid
     it   are mildly formulated   theses   that us to contentment
     manen en oproepen te genieten van **al het goede**
     urge and up-call to enjoy   of   all the good$_{[+e]}$
     rond   ons   heen.
     around us   PART
     'They are mildly formulated theses, which urge us to be content and call
     upon us to enjoy all the good things around us.'

   d. Voor **al het mooie**   **op deze aarde** hoef je   niet ver
     for   all the beautiful$_{[+e]}$ on this   earth need you not far
     te   reizen.
     to   travel
     'For all the beautiful things on this earth, one does not need to travel far.'

   e. Hier vindt je   **al het leuke   aan een vakantie**: goed
     here find you all the nice$_{[+e]}$ at a   vacation good
     onthaal, lekker   ontbijt,   leuke   kamers.
     reception delicious breakfast nice   rooms
     'Here you find everything that is nice about a vacation: good reception,
     delicious breakfast and nice rooms.'

The PPs in these examples contribute the location (e.g. each other in 46a or the earth in 46d) where we can find the abstract object (e.g. that which is good or beautiful). Thus, we posited in Sect. 4 that the PP is a locative adjunct and gets a conjunctive analysis as a regular modifier (cf. 25 and 26).

    With the relational inflected adjective construction, the PP complement is most often introduced by *van* 'of' (47a, e), *aan* 'at' (47b, d), and more by rarely *bij* 'with' (47c) or *met* 'with' (47f). More importantly, the status of the PP in the relational inflected adjective construction is, we maintain, that of an argument rather than an adjunct, as it is needed to identify the referent of the DP. This is perhaps most clearly illustrated by examples in which the complement of the preposition is a nominalized infinitive (47a–c, f), but we also see it with nouns denoting events or properties (47d, e) in the PP complement of the relational inflected adjective:

(47) a. **Het goede   van zwemmen in de winter** is dat je   in
      the good$_{[+e]}$ of   swim.INF in the winter is that you in
      conditie blijft terwijl je   de fietsbeweging even   los laat.
      shape   stay while you the bike-motion for-a-moment go let
      'The good thing about swimming in winter is that you stay in shape
      while you let go of the biking motion.'

   b. **Het vervelende   aan pesten**   is dat het vaak en   met
      the annoying$_{[+e]}$ at   bully.INF is that it often and with
      opzet   gebeurt.
      intention   happens
      'The annoying thing about bullying is that is happens frequently and
      intentionally.'

c. **Het gevaarlijke   bij   rechts inhalen**   is dat je   bij
   the   dangerous$_{[+e]}$ with right   overtake.INF is that you with
   het inhalen   even   de andere baan gebruikt en   dan
   the overtake.INF for-a-moment the other   lane use   and then
   weer   op   de   oorspronkelijke baan   komt.
   again on   the original   lane   come
   'The dangerous thing with passing on the right is that while overtaking
   you use the other lane for a moment, and then return to the original lane.'

d. **Het goede   aan deze campagne** is dat de   ondernemer   zelf
   the good$_{[+e]}$ at this campaign is that the entrepreneur self
   aan de   slag kan.
   at   the   go can
   'The good thing about this campaign is that the entrepreneur can get
   started himself.'

e. **Het vervelende   van talent** is dat je   het vaak zelf niet ziet.
   the annoying$_{[+e]}$ of talent is that you it often self not see
   'The annoying thing about talent is that you often do not see it yourself.'

f. **Het leuke   met het meerijden   in een vrachtwagen** is dat
   the fun$_{[+e]}$ with the drive-along.INF in a   truck   is that
   je   overal   in   Nederland   terecht komt.
   you   everywhere in   Netherlands right   come.
   'The fun thing about driving along in a truck is that you get everywhere
   in the Netherlands.'

Though *goede* is an inflected adjective that can appear in abstract object
constructions like (26) above, the abstract object analysis is not available for
(47a) or (47d), as evidenced by the fact that neither *al/vele* nor a demonstrative
determiner could be used in these sentences, as exemplified in (48):

(48) a. *Dit   vervelende   van pesten   is dat het vaak en   met
        this   annoying$_{[+e]}$ of bully.INF is that it often and with
        opzet   gebeurt.
        intention happens.

     b. *Al het leuke / *Het vele   leuke met het meerijden
        all the nice$_{[+e]}$ / the much$_{[+e]}$ nice with the drive-along.INF
        in een vrachtwagen is dat je   overal   in Nederland
        in a   truck   is that you everywhere in Netherlands
        terecht komt.
        right   come

The source of the problem appears to be that an eventuality cannot function as a
location for the abstract object—in other words, it cannot provide the ground in a
figure–ground relation. Note, in support of this, that the prepositions that are

excluded from the relational inflected adjective construction are locative preposi-
tions (e.g. in 'in,' *op* 'on,' *rond* 'around'), while those that are accepted are often
used to express more abstract relations (*van* 'of,' *aan* 'at').[13]

At this point we do not have a deep explanation for what blocks eventuality-
denoting expressions from the abstract object construction, but one possibility is that
eventualities fail to have an existence independent of their participants and spatio-
temporal location. It might be the case that for purposes of locating something,
those participants or locations would be more salient options than the transitory
relations between them or the actions that they perform. In contrast, something like
humankind, though also in a sense abstract, can provide a ground against which
things can be located, perhaps because what really serves as the location is the
instances of humankind. The instance–kind relation is different from the
participant–eventuality relation insofar as properties attributed to kinds are routinely
(if not always) shared by their instances, whereas that is arguably not so for
participants and the eventualities they participate in.

Whatever the deeper explanation, the crucial fact is that the impossibility of an
eventuality like swimming to serve as a location does not prevent it from being the
target of property ascription: *zwemmen* in (47a) is described as an activity that is
good to do in order to stay in shape, and the DP refers to that property of swimming.
Similarly, *deze campagne* 'this campaign' in (47d) is what is described as having a
good aspect, and the DP refers to that aspect. We can make similar remarks about
het vervelende in (47b) in comparison to its use in the abstract object construction
illustrated in (36a) above. In (36a), *al het vervelende dat hoort bij zijn ziekte* refers
to 'all the annoying things that come along with his disease.' *Het vervelende aan
pesten* in (47b) does not have such a maximal sum interpretation, but rather refers to
a property of bullying ('bullying is annoying'). If a figure–ground relation is ruled
out, we conclude that the PP in the relational construction cannot be analyzed as a
conjunctive locative modifier. We will return shortly to the question of exactly what
DPs like those in (47) denote and how their semantics is computed.

Additional support in favor of the special status of the PP in the relational
inflected adjective construction comes from the fact that its complement can include
an overt negation:

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[13] What is less clear to us is why the choice of prepositions is not more radically limited in the case of the
relational construction, as might be expected if the PP is semantically selected by the adjective. The
second author observes that there is a certain amount of speaker variation in the choice of preposition,
noting, for example, a preference for *van* or *aan* in (47f), rather than *met*. We also note that something
similar can be seen in the English translations of the construction: For the first author, there is not a big
difference between using *about* or *with* in (47a, c). We must leave further exploration of the conditions
governing the choice of preposition in the relational construction for future research.

(49) a. **Het mooie   van het niet hebben van zo'n tool** is dat
        the beautiful[+e] of   the not   have.INF of   such tool is that
        je   gewoon het zekere voor het onzekere neemt en
        you   just   the certain for   the uncertain take   and
        alles   vervangt   door   goede materialen.
        everything   replace   by   good   materials
        'The nice thing about not having such a tool is that you just err on the
        side of caution, and replace everything by good materials.'

    b. Geef   toe   dat uw   irritatie komt   door   **het ongewone**
       acknowledge that your irritation comes through the   unusual[+e]
       van   het   niet   roken.
       of   the   not   smoke.INF
       'Acknowledge that your irritation is caused by the unusual experience
       of not smoking.'

    c. Dat is natuurlijk ook **het mooie   van niet geloven**:
       that is naturally   also the beautiful[+e] of   not   believe.INF
       je   hoeft nergens van gered te   worden en   er   gebeurt
       you   need nowhere of saved to   become and there   happens
       niks   naars met je   na   je   dood.
       nothing   bad   with you after your death
       'That is of course the nice thing about not believing: you don't need to
       be saved from anything, and nothing bad happens to you after you die.'

That these are not abstract object constructions can be seen in the fact that, as with
(47), it is impossible to modify any of the examples in (49) with the predeterminer
al, or to replace the definite article with a demonstrative article:

(50) *Geef toe   dat uw   irritatie komt   door   al het / dit
      acknowledge that your irritation comes through all the / this
      ongewone   van het niet   roken.
      unusual[+e]   of   the not   smoke.INF

It is hard to imagine what sort of location the denotation of the negated infinitive
could provide for locating the property. We therefore take the presence of negation
to indicate that the complement to the PP is not providing the ground in a figure–
ground relation.
    A final piece of evidence that the PP is an indispensable ingredient of the
semantics of the relational inflected adjective construction is the fact that it is
obligatory, unless its content can be unambiguously retrieved from the immediate
context, as in (51), where the adjective *rare* 'funny' describes (the landscape of) the
town mentioned immediately before:

(51) En   dan   komen we   aan op de   top, en   wat doe je   dan…
      and   then arrive we   PART at the top   and what do you then
      je   geniet van   het   uitzicht. Hier vandaan kijken we op de
      you   enjoy of   the   view   Here from   look   we at the
      stad Wernigerode, en   **het rare**   is   dat het daar   weer
      city Wernigerode and the funny[+e] is   that it   there   again
      helemaal plat   als   een   dubbeltje is.
      entirely flat   as   a   dime   is
      'And then we arrive at the top, and then what do you do…. you enjoy the
      view. From here, we look down upon the city of Wernigerode, and the
      funny thing is that there, it is flat as a dime.'

Intuitively, the information contributed by the PP is essential because without it we
wouldn't know what object the adjective is describing a feature of. We conclude
that the PP with the relational inflected adjective is an obligatory argument, and that
the preposition does not denote a general locative figure–ground relation, hence the
greater limit on the variety of prepositions attested in the construction. In contrast,
in the abstract object construction the PP is an optional locative adjunct, in which
we can use any preposition that denotes a general locative figure–ground relation.

   Summarizing, there is clear evidence that the relational construction constitutes a
third non-elliptical use of the inflected adjective alongside the human and the
abstract object constructions. The fact that it occurs exclusively with the definite
neuter article *het*, rejecting demonstratives as well as the predeterminer *al*, and that
it rejects restrictive relative clauses casts doubt on the possibility of positing a free
relative semantics for the construction. We therefore develop a different syntax and
semantics for this construction in the following section.

5.2 The syntax and semantics of the relational inflected adjective construction

The fact that the PP is obligatory and that the DP intuitively refers to the property
itself and not to an individual or stuff that manifests the property leads us to adopt a
rather different syntactic analysis for this construction than for the abstract object
construction. Most importantly, we see no place for a null nominal or pronominal
pro, as the target of the adjective's predication is provided by the PP complement.
The structure we propose is thus quite simple: the inflected adjective directly
complements the head of a DP, taking the PP as its own complement, as in (52b)
for (52a):

(52) a. het   vreemde   van   de   situatie
          the   strange[+e] of   the   situation
          'the strange thing about the situation'
      b. [DP het [AP [A vreemde] [PP van de situatie]]]

As with the abstract object construction, the fact that we do not posit conversion of
the adjective into a noun immediately explains the tendency to use adverbial, rather

than adjectival, modifiers. Initially, it might seem surprising that we assign the adjective a PP complement in this structure when it does not take one in general. In fact, the construction is deeply similar to infinitival constructions in Dutch, such as (53).[14]

(53) het   / *de   zingen   van Jan
      the.SG.N /   the   sing.INF of   John
      'John's singing'

What, in the sentential use of the predicate, would be the external argument of the predication appears as a *van*-marked PP complement in the nominalized infinitive in (53). If the PP complement can indicate argumenthood in (53), it can do the same in (52). In addition, the infinitival construction in (53) refers necessarily to a specific eventuality of singing by John, in an exactly parallel fashion as the relational inflected adjective construction in (52) refers to a specific instance of strangeness manifest in the relevant situation.

  We have seen that the semantics of the relational inflected adjective construction is crucially different from that of the abstract object construction. Most importantly, we need to make explicit a variable in the semantic representation that corresponds to the property denoted by the entire DP (e.g. the strangeness manifest in the situation). The simplest way to do this is to posit that the adjective has an additional argument analogous to the event argument associated with verbs, represented in (54a) as x.[15] This amounts to the claim that the adjective constitutes a description of a property, much in the same way that a verb denotes a description of an eventuality. We take the inflection -e, which we suggested in footnote 7 may mediate in predication DP-internally, to increase the valence of the adjective by one and to introduce a relation (P_{asp}) indicating 'the P aspect' of an argument (54b). The adjective provides a value for the P in P_{asp}, as in (54c), which can be roughly paraphrased as "y's strange aspect" or "y's strangeness":

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[14] However, in contrast to what we find with the relational inflected adjective construction, we can use the predeterminer *al* with infinitives, and the demonstrative articles are fine as well:

(i) dit / dat / al   dat zingen   van Jan
     this / that / all   that sing.INF van Jan

Thus, the comparison only goes so far.

[15] One anonymous reviewer expressed concern that this semantics for -e might create problems for the analysis of adjectival inflection in other sorts of nominals. We see no obstacle to including the extra argument introduced in (54b) in the representations for inflected adjectives more generally (thus allowing for a fully uniform treatment of -e and the inflected adjective), including in the human and abstract object constructions, though we will not revise the analyses of the latter here to conform with (54b). If we were to do this, in other uses of the inflected adjective, including the human and abstract object constructions, we would need to existentially close the additional variable corresponding to the property itself (x in 54b) so as to prevent it from interacting with the rest of the semantics of these constructions and, in the case of the human and abstract object constructions, allow the y variable in (54b) to directly or indirectly identify the referent of the constructions as a whole. A similar strategy is adopted for English in Glass (2014), though we make different use of it here than Glass does. See Sect. 6 for further discussion of Glass's proposal.

(54) a. $[[vreemd]]$: $\lambda z \lambda s[\textbf{Strange}(z)(s)]$
      b. $[[-e]]$: $\lambda P_{\langle s,\langle e,t\rangle\rangle} \lambda y \lambda x \lambda s[P_{\mathrm{asp}}(y)(x)(s)]$
      c. $[[vreemd_{+e}]]$: $\lambda y \lambda x \lambda s[\textbf{Strange}_{\mathrm{asp}}(y)(x)(s)]$

The resulting relation takes an argument syntactically introduced by a preposition that we consider semantically vacuous, similar to the *van* in (53) or the *of* in relational noun configurations like *mother of John*. (55) illustrates the composition. We represent the denotation of the complement to the preposition as in (55a). In the absence of a PP, the argument is saturated contextually, as in (51). The result in (55b) is the property of being the **Adj** aspect of the denotation of the DP complement to the P. If we apply *het* as defined in (25b) to the AP (assuming the nominal is extensionally interpreted here), we get (55c).

(55)   het vreemde   van de situatie
          the strange$_{[+e]}$ of   the situation
          [$_{DP}$ het [$_{AP}$ [$_A$ vreemde] [$_{PP}$ van de situatie]]]
      a. $[[de\ situatie]]^{\textbf{\textit{g}}}$: $\iota y[\textbf{Situation}(y)]$
      b. $[[\ [_{AP}\ vreemde_{+e}\ van\ de\ situatie\ ]\ ]]^{\textbf{\textit{g}}}$: $\lambda x \lambda s[\textbf{Strange}_{\mathrm{asp}}$
              $(\iota y[\textbf{Situation}(y)])(x)(s)]$
      c. $[[\ [_{DP[D}het\ s_1\ [_{AP}\ vreemde_{+e}\ van\ de\ situatie]]\ ]]^{\textbf{\textit{g}}}$: $\lambda P_{\langle e,\langle s,t\rangle\rangle}$
              $\iota x[P(x)(g(s_1))]\ (\lambda x \lambda s[\textbf{Strange}_{\mathrm{asp}}(\iota y[\textbf{Situation}(y)])(x)(s)])$
              $= \iota x[\textbf{Strange}_{\mathrm{asp}}(\iota y[\textbf{Situation}(y)])(x)(g(s_1))]$

(55c) gives us the intuitive meaning of (55), in which the adjective indicates a particular aspect of the situation.

   This analysis directly accounts for various properties of this construction. First, the obligatoriness/necessary recoverability of PP is due to the relational semantics of the adjective. This obligatoriness might eventually be given a deeper account based on the idea that we access or ground specific properties in their bearers. Indeed, it is an old philosophical idea that particular instances of properties (sometimes referred to as 'tropes') depend for their existence on the individuals that manifest or bear them (see e.g. Moltmann 2004 for discussion and references to earlier literature).[16]

   Second, it is now clear why infinitival complements, including negated ones, are acceptable in the PP. Though their denotations might not be able to serve as locations for the stuff denoted by the abstract object construction, there is ample linguistic evidence that they serve as the arguments to property predications (see e.g. Chierchia 1984; Zucchi 1993).

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[16] Note, interestingly, that certain cases of reference to eventualities also seem to be mediated through their participants in a similar fashion, further underscoring the parallel between infinitival expressions like (53) and the relational inflected adjective construction. Grimm and McNally (2013) present corpus evidence that the expression of participant-denoting PPs with deverbal nouns is obligatory precisely when the event referred to by the noun is introduced for the first time in discourse and the relevant participant(s) cannot be recovered from the context. This generalization, in turn, has antecedents in Rappaport Hovav and Levin's (2001) Argument-per-Subevent Condition, which was proposed to account for a broad range of argument realization facts based on the event structures associated with the verbs in question.

Third, as was the case with the abstract object construction, the analysis accounts for the fact that, as a rule, adverbial rather than adjectival modification is found (cf. 39), since the inflected adjective is, indeed, an adjective and not converted to a noun. Since the syntax of the relational construction is slightly different than that of the abstract object construction, we illustrate the semantic composition of adverbial modification.

Consider (39a), repeated here in (56). The adverb and adjective together form a complex description that is ascribed to the referent of the PP complement to the adjective; in other words, the adverb composes semantically with the adjective before the latter combines with the PP. This is unsurprising given that *te* 'too' is a degree adverb, and, on an analysis of adjectives as measure functions (e.g. Kennedy 1997), degree morphology is essential to licensing the adjective as a predicate of or relation between individuals (56a, b). Following e.g. Piñón (2005) and Kennedy and Levin (2008), we assume that degree morphemes can apply both to measure functions and (as is needed here) measure relations, in order to convert them into predicates of the corresponding valence. In other words, the expression in (56b), denotes a function not to propositions but rather to degrees, while that expression combined with *te* as in (56d) does denote a function to propositions. Adapting a proposal in Meier (2003), we take *te* to introduce a standard whose value exceeds the maximum degree compatible with the argument of the adjective being able to manifesting some specific property (56c). The specific property is contextually identified as P_i in (56c), but may in other cases be identified by an infinitival clause. The rest of the derivation in (56) is like that in (55).

(56) **het al te zure van citrusvruchten** is in deze confiture
the   all   too   sour$_{[+e]}$ of   citrus-fruits   is   in   this   jam
verdwenen.
disappeared
'the all too sour (aspect) of citrus fruits is lacking in this jam.'

    a. [$_{DP}$ het [$_{DegP}$ [$_D$ te][$_A$ zure]] [$_{PP}$ van citrusvruchten]]

    b. $[[zure_{\langle e,\langle e,\langle s,d\rangle\rangle\rangle}]]^g$: $\lambda y\lambda x\lambda s[\mathbf{Sour}_{asp}(y)(x)(s)]$

    c. $[[te]]$: $\lambda G_{\langle e,\langle e,\langle s,d\rangle\rangle\rangle}\lambda y\lambda x\lambda s[G(y)(x)(s) > \mathbf{max}d[G(y)(x)(s)$
       $= d \rightarrow \diamondsuit P_i(x)]]$

    d. $[[te\ zure]]^g$: $\lambda y\lambda x\lambda s[\mathbf{Sour}_{asp}(y)(x)(s) > \mathbf{max}d[\mathbf{Sour}_{asp}(y)(x)(s)$
       $= d \rightarrow \diamondsuit P_i(x)]]$

    e. $[[citrusvruchten]]^g$: $\mathbf{c}$

    f. $[[te\ zure\ van\ citrusvruchten]]^g$:
       $\lambda x\lambda s[\mathbf{Sour}_{asp}(\mathbf{c})(x)(s) > \mathbf{max}d[\mathbf{Sour}_{asp}(y)(x)(s) = d \rightarrow \diamondsuit P_i(x)]]$

    g. $[[het\ s_1\ te\ zure\ van\ citrusvruchten]]^g$:
       $\iota x[\mathbf{Sour}_{asp}(\mathbf{c})(x)(g(s_1)) \geq \mathbf{max}d[\mathbf{Sour}_{asp}(y)(x)(s) = d \rightarrow \diamondsuit P_i(x)]]$

The final representation in (56g) states that the sour aspect of the citrus fruits has a value that exceeds the maximum degree of sourness acceptable in the context. Thus,

this sort of adverbial modification can be handled straightforwardly.[17] For the remainder of the paper, however, we will abstract away from the complexities of degree semantics introduced here and will maintain the simpler analysis of adjectives that we have used up to this point.

Let us now turn to the remaining modification facts. Recall that the relational inflected adjective construction resembles the abstract object construction in licensing *enige* 'only' (41a), the ordinals (41b), intensional adjectives such as *vermeende* 'alleged' (41c) and non-restrictively used evaluative adjectives (41d, e) and relative clauses (45). It differs in not licensing restrictive relative clauses. The analysis of the non-restrictive modification (whether via adjectives or relative clauses) works exactly as with the abstract object construction: these modifiers intervene on the conventional implicature level and ascribe properties directly to the referent of the full DP (e.g. the strange aspect of the situation). We will therefore not illustrate again the derivation of such examples. The remaining cases are worth discussing because the denotation we assign to the adjective phrase in the relational construction is of a different semantic type than the one we assigned to the small clause in the abstract object construction: it denotes a property, rather than a proposition. We might therefore have expected the modification facts to be different, and that restrictive adjectival or relative clause modification would be more systematically available when, in fact, the options are even more limited than in the case of the abstract object construction.

The key to understanding this combination of similarities and differences, as noted in Sect. 5.1 above, lies in the unique extension attributed to the Adj + PP in the relational construction, evidence for which can be found in the inability of the construction to take any determiner other than *het*, including demonstratives, the maximizing predeterminer *al* and adjectival *vele, weinig* ('many/much, few/little'). This uniqueness blocks restrictive modification but will not block those adjectives with other semantic contributions, as is the case precisely with *enige*, the ordinals, and intensional adjectives. All of these are independently attested as properties of property-type expressions in Dutch (i.e. common nouns), so a property-type alternant for them must be independently assumed, even though their semantics is fundamentally propositional in nature, as argued e.g. by Larson (2002). Therefore, their composition with the Adj + PP in the relational inflected adjective construction should work exactly as it does with those, modulo the difference in semantic type. For the sake of comparison with the abstract object construction, we now briefly go through sample derivations with these adjectives in the relational construction.

Consider the use of *vermeende* in (41c), repeated below in (57). In (35a) we assigned *vermeende* the denotation in (57a), but here we use the alternative, equivalent denotation in (57b). This will combine with the Adj + PP (57c, where **p**, for 'protein percentages', is the translation of the PP) as in (57d).

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[17] The adverbial modification we have found in this construction appears to be limited to degree modification, in which category we include adverbs such as *intens* 'intensely' in (39b) and *weinig* 'little' in (42c).

(57)   het vermeende goede van hele hoge eiwitpercentages
        the alleged$_{[+e]}$ good of very high protein-percentages
        'the alleged goodness of very high protein percentages'

   a. [[*vermeende*]]: $\lambda p_{\langle s,t\rangle}\lambda s[\textbf{Alleged}(p)(s)]$
   b. [[*vermeende*]]: $\lambda P_{\langle e,\langle s,t\rangle\rangle}\lambda x\lambda s[\textbf{Alleged}(P(x))(s)]$
   c. [[*goede van hele hoge eiwitpercentages*]]: $\lambda x\lambda s[\textbf{Good}_{asp}(\textbf{p})(x)(s)]$
   d. [[*vermeende goede van hele hoge eiwitpercentages*]]:
       $\lambda P_{\langle e,\langle s,t\rangle\rangle}\lambda x\lambda s[\textbf{Alleged}(P(x))(s)](\lambda x\lambda s[\textbf{Good}_{asp}(\textbf{p})(x)(s)])$
       $= \lambda x\lambda s[\textbf{Alleged}(\textbf{Good}_{asp}(\textbf{p})(x))(s)]$

The examples with *enige* and ordinals are more interesting. In our corpus searches, we have found these adjectives exclusively in DPs that serve as the fronted predicate in specificational copular sentences. We repeat two examples from above in (58):

(58) a. **Het enige leuke aan niet naar school kunnen gaan**
          the   only   fun$_{[+e]}$ at   not   to   school can.INF go.INF
          is niet naar school gaan.
          is   not   to   school go.INF
          'The only fun thing about not being able to go to school is not going to school.'
      b. **Het eerste vervelende van de maatregel is dat het**
          the   first   annoying$_{[+e]}$ of   the measure is that it
          voor de scholen lastig is…
          for   the schools tricky is
          'The first annoying thing about the measure is that it is tricky for the schools…'

We pointed out in Sect. 4 that the function of both *enige* and the ordinals is to quantify over alternatives. In (58), these alternatives are intuitively the potential bearers of the property of being fun or annoying. There is, thus, a sortal mismatch between the preverbal, predicate DP in the specificational copular sentence (the relational inflected adjective construction) and its postverbal subject argument. To take (58a) as an example, on our analysis the preverbal DP (ignoring *enige*) should denote a property, namely the fun (or funness) in not going to school; however, its argument DP—with which it is specificationally identified—identifies that aspect or part of not going to school that actually manifests that property or, to put it in other terms, supports the ascription of the property. Though this might look like a reason to think that perhaps the examples in (58) involve the abstract object construction, rather than the relational one, we note that the Adj + PP forms in (58) without *enige* or the ordinal cannot be preceded by *al het* or *dit*, which would be clear diagnostics for the abstract object construction:

(59) *Al   het/ dit   leuke   aan niet naar school kunnen gaan
       all   the/ this fun[+e]   at   not to   school can.INF go.INF

We therefore conclude that analyzing the preverbal, predicate DPs in (58) as involving the abstract object construction is not correct. Rather, it seems that the predicative context coerces the Adj + PP from denoting a property of a particular object to denoting the set of parts or aspects of that object that manifest the property. For example, in (58a) the coercion would be from denoting the fun in not going to school to the set of those parts or aspects of not being able to go to school that manifest this fun. The unacceptability of (59) suggests that these manifestations are not conceived of as a maximal sum of a mass, as is the case for the referent of the abstract object construction. It also suggests that the referent of the relational inflected adjective construction in (58a) is not, strictly speaking, conceived of as a part of the referent of the complement to the preposition in the construction. This may seem initially surprising, especially since one can find in English similar examples with the overt noun *part*, as in (60):

(60) a. About the only good part of not making it to Philadelphia was that I got to go back to sleep for a bit.
      b. So, the only bad part of not taking the test is that she may not be able to apply for some college scholarships.
      c. The only negative part of not having a kid with me was that I had no one to blame for all the little color samples I kept taking.

However, observe that it is difficult to imagine how the referent of the expression on the right-hand side of the copula in these examples could be considered a part of the referent of the complement to *of* on the corresponding left-hand side, except in the most abstract of senses.[18] Note that even if we construe the negated VPs as denoting propositions or facts—that is, as pieces of information, whose entailments could be considered parts—it is not clear that we can take the propositions or facts on the right-hand side to constitute informational parts, as in no case are they strictly entailed by the negated VP. Thus, while it is beyond the scope of this paper to explore more deeply the sort of predication relation that holds in (58) and (60), we consider examples such as (60) to confirm rather than call into question the need for an analysis that is distinct from the one we used for *enige* and ordinals in the abstract object construction.

   Once we accept that Adj + PP in the relational inflected adjective construction can be coerced from describing a property to describing something that manifests the property, the example in (58a) can be composed straightforwardly as in (61). We follow the semantic analysis of specificational sentences in Geist (2007) (who draws

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[18] We also observe that such examples are significantly rarer than their counterparts of the form *the only good/bad/negative thing about*…. To give an idea of the difference in frequency, a Google search (26/5/2014) for "the only good part of not" turned up 40 results before Google warned that the rest were highly similar; in contrast a search for "the only good thing about not" turned up 268 results before that warning emerged. *Good* was by far the adjective that yielded the largest number of examples in this construction with *part*; examples with other adjectives are anecdotal.

on earlier work by Williams 1983 and Partee 1986), on which the verb *be* has the option of combining first with an entity-denoting expression, and then a property-denoting one (see 61f). We assign *enige* a version of the semantics of DP-internal *only* from McNally 2008 (see 61d).[19] We take the coercion step mentioned above to apply to the Adj + PP as in (61c), indicated by a coercion operator **Man** (for 'manifestations') and the corresponding subscript on x in the output. The relational inflected adjective construction is converted into the specificational predicate via the **ident** type shift (Partee 1987, 61i).

(61)   **Het enige leuke   aan niet naar school kunnen gaan** is
          the   only   fun$_{[+e]}$ at   not   to   school can.INF   go.INF is
          niet naar school gaan.
          not   to   school go.INF
          'The only fun thing about not being able to go to school is not going
          to school.'

     a. $[\![$*niet naar school kunnen gaan*$]\!]^g$: **nscg** ('not school can go')
     b. $[\![$*leuke aan niet naar school kunnen gaan*$]\!]^g$: $\lambda x \lambda s[\mathbf{Nice}_{asp}(\mathbf{nscg})(x)(s)]$
     c. $\mathbf{Man}([\![$*leuke aan niet naar school kunnen gaan*$]\!]^g)$: $\lambda x_{Man} \lambda s [\mathbf{Nice}_{asp}$
        $(\mathbf{nscg})(x_{Man})(s)]$
     d. $[\![$*enige*$]\!]^g$: $\lambda P \lambda x \lambda s[P(x)(s) \wedge \forall y[P(y)(s) \rightarrow y \subset x]]$
     e. $[\![$*het$_1$ s$_1$ enige leuke aan niet naar school kunnen gaan*$]\!]^g$:
        $\iota x_{Man}[\mathbf{Nice}_{asp}(\mathbf{nscg})(x_{Man})(g(s_1)) \wedge$
        $\forall y[\mathbf{Nice}_{asp}(\mathbf{nscg})(y)(g(s_1)) \rightarrow y \subset x]]$
     f. $[\![$*is*$]\!]^g$: $\lambda v \lambda P[P](v)$
     g. $[\![$*niet naar school gaan*$]\!]^g$: **nsg** ('not school go')
     h. $[\![$*is niet naar school gaan*$]\!]^g$: $\lambda v \lambda P[P](v)(\mathbf{nsg}) = \lambda P[P](\mathbf{nsg})$
     i. $\mathbf{ident}([\![$61e$]\!]^g)$: $\lambda z[\iota x_{Man}[\mathbf{Nice}_{asp}(\mathbf{nscg})(x_{Man})(g(s_1))$
        $\wedge \forall y[\mathbf{Nice}_{asp}(\mathbf{nscg})(y)(g(s_1)) \rightarrow y \subset x_{Man}]] = z]$
     j. $\lambda P.P(\mathbf{nsg})([\![$61i$]\!]^g)$: $\iota x_{Man}[\mathbf{Nice}_{asp}(\mathbf{nscg})(x_{Man})(g(s_1)) = \mathbf{nsg}$
        $\wedge \forall y[\mathbf{Nice}_{asp}(\mathbf{nscg})(y)(g(s_1)) \rightarrow y \subset x_{Man}]]$

In prose: (61e) provides us with the unique manifestation of what is nice about not being able to go to school. After application of Partee's **ident** operator in (61i), we obtain the singleton set corresponding with this manifestation. Application of the predicate *is niet naar school gaan* from (61h) to this singleton set results in the identification of the unique manifestation of what is nice about not being able to go to school with not going to school in (61j). A fully analogous derivation can be given for (58b), assuming we assign the ordinal a property- (rather than proposition-) selecting variant of the interpretation in (34).

    This concludes our description and analysis of the Dutch facts. We now turn to a very brief discussion of how these facts and their analysis differ from what has been

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observed and proposed in the literature for similar constructions in other languages, and of what we see as the larger implications of our study.

6 The bigger picture

We have argued that the abstract object construction involves reference to a mass of stuff via a property that this stuff manifests. It does not refer to the property itself. The same, mutatis mutandis, is (more obviously) true of the human construction. In contrast, the relational inflected adjective construction does apparently refer to a property. However, even though they are crystal clear in certain contexts (cf. 42–47), the differences between the abstract object and relational constructions can be difficult to detect in other contexts (such as the instances of coercion in 61), and indeed prior to now the difference between the two has gone unnoticed in the literature.

Although our discussion has focused exclusively on Dutch, adjective-based constructions that refer specifically to humans, to maximal sums of stuff bearing the adjectival properties, and/or to the properties themselves exist in a number of other languages. Without going far afield we find such constructions in French (Lauwers 2008; Beauseroy 2009; Borer and Roy 2010), Spanish (Villalba 2009; Villalba and Bartra-Kaufmann 2010), Greek (Giannakidou and Stavrou 1999; Alexiadou 2011), Serbo-Croatian (Arsenijevic 2011), Slovak (Richtarcikova 2014), German, Italian (Marzo and Umbreit 2013), and Romanian (Alexiadou and Iordachioaia 2013), in addition to English, as mentioned in Sect. 1. As there is considerable variation across languages in the syntax–semantics interface of these constructions and their use, it would be impossible to discuss them all here. We therefore limit ourselves to briefly comparing our proposal to the two semantic analyses that we know of, namely that for Spanish in Villalba (2009, 2013) and for English in Glass (2014), and we will focus mainly on the constructions that do not have human reference, as they seem to present more cross-linguistic variation and greater complexity. Since the constructions in these two languages and the analyses proposed differ in interesting ways from what we have argued for Dutch, this comparison will serve as a useful illustration of the cross-linguistic terrain, though it does not by any means exhaust the range of variation.

We begin with Spanish. Examples of human reference, reference to what is arguably a mass of (abstract) stuff, and to a property are illustrated in (62a–c), respectively.

(62) a. dos ciegos,   los   ciegos,   la   pija
two blind.PL.M, the.PL.M blind.PL.M the.SG.F posh.SG.F
'two blind people, the blind people, the posh woman'

   b. …**todo lo aprendido o estudiado**, …iba   teniendo gravedad…
…all   LO learned   or studied   went   having   seriousness
'…everything that was learned or studied,… gradually took on seriousness…'

c. …el   cielo despejado, limpio… y   sin   ninguna nube   que
   …the sky   clear   clean   and without no   cloud   that
   hiciera   perder la   hermosura de **lo azul de la**
   made.SUBJ   lose   the   beauty   of LO blue of the
   bóveda celeste.
   heavens
   '…the sky clear, clean…and without a single cloud that could mar the
   beauty of the heavenly blue.'

The human construction allows for generic or specific count reference, as in Dutch,
and invariably involves the presence of a determiner (in some cases inflected for
number and gender) of the sort that typically appears with nouns. Everything
indicates that this construction could be analyzed as we have proposed for Dutch,
and we will have nothing more to say about it here.

   Non-human reference is more interesting. It invariably involves neuter *lo* instead
of a typical determiner.[20] Villalba (2009) argues that examples like (63) denote
tropes, i.e. particular instances of a property (citing Moltmann 2004); in a later work
(Villalba 2013) he adopts the analysis of *het*-constructions in McNally and de Swart
(2011), which, setting aside the treatment of the article, is identical to the one we
have proposed here for the relational abstract object construction.

(63) lo honesto de Juan
      LO honest   of John
      'John's honesty'

Curiously, however, though examples of reference to properties involving
lo-constructions, like (62c), are attested in Spanish, and some further examples like
(63) are provided in Bosque and Moreno (1990), the Peninsular Spanish speakers we
have consulted generally do not find (63) itself or the examples in Bosque and Moreno
acceptable, preferring instead a deadjectival nominalization such as (64).

(64) la   honestidad de Juan
      the.SG.F honesty   of John
      'John's honesty'

Informal Google searches for color and taste adjectives with clear property
reference yield very few results. Note that (62c) involves the adjective *azul* 'blue,'
which, unlike other common color terms in Spanish lacks a nominalized form (cp.
e.g. *rojo/rojez* 'red/redness,' *blanco/blancura* 'white/whiteness,' *negro/negrura*
'black/blackness'). Interestingly, corpus examples with *lo rojo* or *lo blanco* are very
hard to find with a relational interpretation, suggesting that their use is dispreferred.
Furthermore, we observe that *lo* heads constructions that are the equivalent of free

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[20] The status of *lo* is controversial: It has been claimed to be a determiner, a pronoun, and it has even
been argued that perhaps one cannot tell (see Bosque and Moreno 1990; Leonetti 1999 for an overview of
the literature). We set aside this question here, as a fruitful comparison between these *lo*-constructions
and the constructions in Dutch can be made without resolving the status of *lo*, and gloss *lo* as LO.

relatives in English (65a) and related degree relative clauses (65b), as well as other degree-referring expressions (65c, from Bosque and Moreno 1990, p. 34):

(65) a. lo   que dije   ayer
        LO that I-said yesterday
        'What I said yesterday'

     b. Lo   bueno que   era!
        LO   good   that was
        'How good it was!'

     c. Juan come lo necesario… no más   cantidad de la
        Juan eats LO necessary   no more   quantity of the
        aconsejable.
        recommendable
        'Juan eats the necessary amount…not more than is recommendable.'

Two of the nine attested sentences that Villalba (2009) provides containing *lo*-constructions could clearly be translated using degree expressions as in (66c) or a non-exclamative version of (66b), and three others could clearly be translated as 'that which is Adj,' like (65a).

   The discussion of examples (62) to (65) suggests that the semantics we proposed for the abstract object construction in Dutch would be the obvious choice for the *lo* + Adj constructions (62b), and actually its preferred interpretation in Peninsular Spanish more generally. We hypothesize that the relational interpretation of *lo* + Adj, although available in principle, is only recruited for property reference in actual language use when a deadjectival noun is not available (as in 62c).

   Note that the Dutch *het* constructions do not have the free relative and degree relative uses illustrated in (65). In contrast, they are productively used for reference to individuals (through the human construction), stuff (through the abstract object construction) and properties (through the relational construction). Whereas derived nominals in Spanish are commonly used to refer to properties in general (64), derived nominals in Dutch are specialized for expressing a degree or quantity of a property (66), as observed by McNally and de Swart (2011).

(66) hooguit een beetje roodheid op mijn wangen
     at-most a   bit   redness   on my   cheeks
     'at most a bit of redness on my cheeks'

No such restriction to degree/quantity interpretation is observed for deadjectival nouns like (64) in Peninsular Spanish. It thus appears that, while the two languages share a similar basic set of forms and express a similar set of meanings, the distribution of the meanings over the different forms is distinct in the two languages.

   Glass (2014) carried out a corpus study of English *the* + Adj expressions, and argues that they have two sorts of denotations: a plural count denotation referring to (mainly but not necessarily always animate) individuals bearing the property, and a mass denotation referring to the property itself. Representative examples of each type from her paper appear in (67) and (68), respectively:

(67) a. New Swarm Theory: **The Weak** Can Lead **the Strong** [topic: insects]
      b. In Tacloban, **the dead** are being taken to a mass grave in a public cemetery
      c. How about because **few rich** are philanthropic?
      d. **The stylish young** are reclaiming the necktie as their own.

(68) a. **The cute** is perhaps the dominant aesthetic category of our late-capitalist times.
      b. "progress" always seems to go in one direction–toward **the dead** and the dull.
      c. **A little pretty** is just what the doctor ordered!
      d. You're on the upside of the healing and most of **the mean nasty** is behind you

Glass formalizes the notion of 'property' as a neo-Davidsonian state and proposes that adjectives have the representation in (69a). She then proposes that a nominalizing type-shifter, **nom-indiv** (69b), can convert the adjective (or adjective phrase) into an NP that denotes a set of entities of which the state holds, with existential closure over the state variable (69c). Alternatively a related type shifter, **nom-mass** (69d), can convert it into a mass of the property, with existential closure over the entity variable (69e; irrelevant details of the formalization are changed here):

(69) a. [[happy]]: $\lambda x \lambda s[s \leq$ **happiness** $\wedge$ **holder**$(x, s)]$
      b. [[**nom-indiv**]]: $\lambda P_{\langle e, \langle s,t \rangle \rangle} \lambda x \exists s[P(x)(s)]$
      c. [[**nom-indiv**(happy)]]: $\lambda x \exists s[s \leq$ **happiness** $\wedge$ **holder**$(x, s)]$
      d. [[**nom-mass**]]: $\lambda P_{\langle e, \langle s,t \rangle \rangle} \lambda s \exists x[P(x)(s)]$
      e. [[**nom-mass**(happy)]]: $\lambda s \exists x[s \leq$ **happiness** $\wedge$ **holder**$(x, s)]$

The resulting nominals can combine with any sort of determiner that is compatible in count/mass features.

   The denotation that Glass provides for the individual interpretation is, except for the human restriction, effectively identical to that we provide for the human construction in Dutch. She substitutes type-shifting for our use of a null noun. However, her semantics for the mass construction is different from our analysis both of the abstract object construction and of the relational inflected adjective construction, and is in fact much closer to Kester's (1996) proposal. This is appropriate to the extent that the determiner facts in English are different from those in Dutch, as we see in the comparison of (68c) with (23). It may be the case that the specifically neuter form of the definite article, combined with adjectival inflection, sets the Dutch construction apart from ordinary nominals in other languages.[21] Clearly further comparison of the English and Dutch data is called for.

   While we cannot do justice to Villalba's and Glass's interesting discussions here, this brief comparison with Spanish and English leads to two main observations, which we hope will inspire future lines of research. First, while very similar

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[21] A similar compatibility with mass quantifiers for reference to 'stuff' via properties is found in French (Lauwers 2008), German (Berit Gehrke, p.c.), and Italian (Denis Delfitto, p.c.).

morphosyntactic resources are used cross-linguistically for reference to and via properties, languages vary in the degrees to which these are productive and in the ways in which the individual constructions become specialized. For reference to properties, Spanish relies heavily on derived nominals, but for reference to stuff via their properties and to degree, *lo*-constructions appear to be the productive option. In English, *-ness* affixation is tremendously productive for reference to properties themselves and to degree, while for reference to stuff via their properties there is no single preferred option, with a combination of free relatives, relatively empty nouns such as *part*, and occasionally *the* + Adj being used. Finally, in Dutch *het* constructions are highly productive for reference to properties and stuff, while derived nominals are used to express degree. This cross-linguistic variation opens up interesting possibilities for exploring how different options for reference are established, interact as a system, and evolve over time.

The second observation resulting from our brief comparison of Dutch, Spanish and English brings us back to one of the main questions we raised in the introduction: that of the division of labor between nouns and adjectives as the descriptive core of referring expressions. Our analysis of Dutch assigns multiple syntactic and semantic roles to adjectives in the constructions where they are the primary source of descriptive content for reference. However, on our account they never directly replace common nouns: adjectives serve as modifiers of a null noun in the human construction, as predicates of individuals in the free relative-like small clause structure associated with the abstract object construction, and as predicates over aspects of the referent identified by the PP complement in the relational inflected adjective construction. The diversity is perhaps surprising, but it strongly indicates that the grammar of Dutch exploits the specific features of adjectives to enrich the expression of reference, rather than obliterating the distinction between adjectives and common nouns. We thus hope that our analysis contributes to a more fine-grained semantic analysis of adjectives that goes beyond the $<e,t>$-type assignment they share with common nouns, and helps to articulate the relation between the abstract notion of a property and the less abstract ways in which property particulars are actually manifested.

7 Conclusion

In this paper we have argued that Dutch has three distinct DP constructions whose main visible descriptive element is an adjective: alongside the well-known human construction, there is not only the abstract object construction previously discussed in the literature, but also what we call the relational inflected adjective construction. We have provided the first formal semantic analysis that we know of that accounts for the distinct properties of these three constructions. We have also pointed to some of the larger implications of this study for our understanding of both typological and within-language strategies for reference to and via properties. Though we have had to leave various deeper questions unanswered along the way, we hope that this study serves to inspire further work on this rich and underexplored area of natural language semantics.

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