

# Wise adverbs and the functional hierarchy: a case study

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## Abstract

This article presents a case study on Dutch adverbs formed with the suffix *-erwijs*. It addresses two research questions that have been raised in the literature. Firstly, it asks the question whether other Germanic adverbial suffixes are equivalents of this suffix. It is shown that *-erwijs* can realise a large subset of the Cinquean adverbial projections. It is pointed out that the question whether other affixes are equivalents of the *-erwijs* suffix is therefore unprecise and misguided: adverbial suffixes may realize sets of adverbial syntactic projections, subsets of which may also be realized by other adverbial affixes. Secondly, it investigates whether there is a structural relation between adverbs formed with the suffix *-erwijs* and present participles. We show that the adverbs built on participles fail to project verbal argument structure. This leads to an interesting paradox, where the adverbs morphologically appear to contain the participle, but do not contain a verb semantically. We propose to solve this paradox by putting verbal argument structure projecting heads higher in the structure than the participial suffix, which we take to be a mere adjectiviser.

**Keywords:** Adverbs, *-erwijs*, present participle, Dutch

## 1 Introduction

Many Germanic languages contain what we will call WISE adverbs. Some examples are given in Table 1.

*Table 1 Wise adverbs in Germanic languages*

Language	suffix	examples	gloss
English	-wise	clockwise, pairwise, crabwise, lengthwise	
German	-erweise	erstaunlicherweise	'surprisingly'
		angenehmerweise	'fortunately'
		korrekterweise	'correctly'
Swedish	-vis	nödvändigtvis	'necessarily'
		exempelvis	'by way of example'
		lyckligtvis	'fortunately'
Dutch	-erwijze	verrassenderwijze	'surprisingly'
		typischerwijze	'typically'
		spelenderwijze	'effortlessly'

This article presents a case study on the Dutch adverbs that contain this suffix, which can surface interchangeably as *-erwijs* or *-erwijze*. The literature on WISE adverbs (De Haas & Trommelen 1993; Heinle 2004; Van de Velde 2005; Diepeveen 2012) has raised two research questions that we will explore in more depth in this article. First, the question has been raised whether WISE adverbs across Germanic varieties are equivalent of one another and whether other adverbial suffixes could be considered equivalents. We will argue that the Dutch suffix *-erwijs* can have different meanings in terms of the Cinquean hierarchy of adverbial heads, and that therefore the question whether suffixes are equivalents is unprecise. We point out that it is more fruitful to research for each suffix in each variety which exact meaning (or sets of meanings) can be realized by it. Secondly, we discuss the question of the relation between these adverbs and the present participle. Even though some of

them on the face of it appear to contain a participle morphologically, we will nevertheless show that this apparent morphological containment hides a more complex reality. We expand on both research questions in the remainder of this section.

First, consider the question whether other adverbial affixes can be considered equivalents of the suffix *-erwijs*. The question whether suffixes are morphosyntactically equivalent is an empirical problem that arises within languages, across dialects, across diachronic varieties and across languages. Within a single language the challenge lies in the fact that several morphemes seem to be synonymous. For example, for Dutch, Barbiers (2001) has noted that *-erwijs* can sometimes be paraphrased by means of the morpheme *genoeg* ‘enough’, as shown in (1). Diepeveen (2012) has noted that *-iter* can fulfil the same function as *-erwijs* in certain contexts, as illustrated in (2).

- (1) Ze was verrassend-erwijze / verrassend genoeg de enige kandidaat.  
 she was surprising-ERWIJZE / surprisingly enough the only candidate  
 ‘She was surprisingly enough the only candidate.’
- (2) Normal-erwijze / normal-iter zou dat geen probleem mogen geven.  
 normal-ERWIJZE / normal-ITER should that no problem may give  
 ‘Normally, that should not cause any problems.’

In the same vein, from a micro-comparative perspective, the question has been raised whether suffixes across dialects are functionally equivalent. For example, it has been discussed whether the Limburgian suffix *-enteere*, shown in (3), is an equivalent of Standard Dutch *-erwijs* or not (Grootaers 1948; Schelberg 1986; Goossens 1996).

- (3) Al zing-enteere kwamen ze binnen.  
 PRT sing-ENTEERE came they inside  
 ‘She came in singing’.

The fact that the Standard Dutch equivalent of this sentence can be expressed with a wise adverb (see (10) below) suggests a possible equivalency relation here, but in fact this equivalence only exists for one meaning of the wise adverb, the one where it expresses progressive aspect, which we discuss below.

The question is also relevant from a diachronic perspective. In order to understand whether language change has taken place in the domain of adverbs, one needs to know whether older versions of wise adverbs, such as the Middle Dutch example in (4) (from Diepeveen 2012, p. 166), are equivalent to their modern counterparts (Diepeveen 2012, p. 166).

- (4) Heb ic menschelijker wijs (...) tegen wilde dieren geuochten.  
 have I human ERWIJZE against wild animals fought  
 ‘I fought in a human manner against wild animals’ (Middle Dutch, year 1526)

Finally, the question has been raised whether the wise suffixes across Germanic languages should be seen as functionally and morphosyntactically equivalent. For example, the Dutch and German examples in (5) and (6) (the latter from Liu 2009:332) seem to suggest that the adverbs fulfil exactly the same role in both languages.

- (5) Verrassend-erwijze schijnt uit mijn verkoudheid geen griep voort te komen.  
 surprising-ERWIJZE appears from my cold no flu PRT<sup>1</sup> to come  
 ‘Astonishingly, it seems that my cold is not turning into the flu.’ (Standard Dutch)

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<sup>1</sup> PRT = particle

- (6) Erstaunlich-erweise scheint aus meiner Erkältung keine Grippe zu werden  
 surprising-ERWEISE appears from my cold no flu to become  
 ‘Astonishingly, it seems that my cold is not turning into the flu.’ (Standard German)

The English suffix *-wise*, on the other hand, seems to be the analogue of the Dutch suffix *-gewijs*, which selects nouns to form adverbs, e.g. *paarsgewijs* ‘pairwise’, *stuksgewijs* ‘piecemeal’.

We argue that the most fruitful way to address the issue of cross-varietal equivalence is by means of a fine-grained analysis of the morphosyntactic and semantic properties of each suffix. We argue that the Dutch suffix *-erwijs* can realize a large subset of the Cinquean adverbial projections. Comparable adverbial suffixes in Standard Dutch or in another Germanic variety may realize another subset of these projections, which partially overlap with Standard Dutch *-erwijs*. We therefore argue that the question whether adverbial wise suffixes are equivalents of one another is imprecise. A more fruitful question, we believe, is to ask which adverbial projections can be realized by means of which suffix. To illustrate this approach, Section 2 presents a case study of the semantic properties of the Dutch suffix *-erwijs*.

Secondly, consider the question whether wise adverbs contain a present participle. The Dutch suffix *-erwijs* can not only attach to unsuspected adjectives, but also to a form which at least formally resembles a present participle, i.e. a verb followed by the suffix *-end* (De Haas & Trommelen 1993, p. 320-324). An example of a wise adverb that contains such an *-end* form is given in (7)a. Example (7)b shows the corresponding present participle. The adverb morphologically contains the present participle.

- |        |                      |    |            |
|--------|----------------------|----|------------|
| (7) a. | spot-end-erwijs      | b. | spot-end   |
|        | mocking-PTCPL-ERWIJS |    | mock-PTCPL |
|        | ‘mockingly’          |    | ‘mocking’  |

More examples of WISE adverbs that morphologically contain an *-end* form of the verb are given in the lefthand column in (8), with the corresponding present participle in the righthand column.

- |     |                  |                 |              |              |
|-----|------------------|-----------------|--------------|--------------|
| (8) | opvallenderwijs  | ‘strikingly’    | opvallend    | ‘striking’   |
|     | verrassenderwijs | ‘surprisingly’  | verrassend   | ‘surprising’ |
|     | lachenderwijs    | ‘laughingly’    | lachend      | ‘laughing’   |
|     | vergelijkerwijs  | ‘comparatively’ | vergelijkend | ‘comparing’  |
|     | spelenderwijs    | ‘playingly’     | spelend      | ‘playing’    |
|     | vragenderwijs    | ‘askingly’      | vragend      | ‘asking’     |
|     | schertsenderwijs | ‘jokingly’      | schertsend   | ‘joking’     |
|     | zingenderwijs    | ‘singingly’     | zingend      | ‘singing’    |

In Haeseryn et al. (1997, p. 67), the present participle is taken to be derived from the infinitive of the verb by attaching the suffix *-d(e)*. This would make a present participle like *lachend* consist of three morphemes: the root, followed by the infinitival suffix *-en*, followed by the participial suffix *-d* (e.g. *lach-en-d* ‘laughing’). In contrast, De Haas & Trommelen (1993) take the position that there is a suffix *-end* that attaches to verbal roots, so that there are only two morphemes in *lach-end*. We remain neutral on this question, and shall henceforth refer to the relevant form as the *-end* form, for reasons that will become clear as we proceed.

The resemblance between wise adverbs and present participles is not limited to a formal resemblance. It has also been noted that wise adverbs can be synonymous with present participles.

Example (9) contains the present participle *zingend* ‘singing’, that appears to be synonymous with the wise adverb *zingerderwijs* ‘singly’ in (10).

- (9) Zingend kwam Mathilde de trap af.  
singing came Mathilde the stairs down  
‘Mathilde walked down the stairs singing.’
- (10) Zingend-erwijs kwam Mathilde de trap af.  
singing-ERWIJZE came Mathilde the stairs down  
‘Mathilde walked down the stairs singing.’

From these two observations, viz. the formal and semantic resemblance, one might deduce that wise adverbs contain a present participle. And while this is indeed the case as far as the morphology is concerned, the evidence we shall discuss shows that there is no verbal structure inside the adverb at all.

An important observation we need to make in this respect is that not all wise adverbs contain the *-end* form of a verb. The examples in the lefthand column in (11) show wise adverbs that contain adjectives, with the righthand column showing the adjectives contained within the adverbs. Note that the adjectives themselves contain *bona fide* adjectival suffixes, such as *-ig*, *-isch* and *-lijk*, i.e. they are not simply roots or stems within the adverbs, but true, morphologically complex, adjectives.

(11) merkwaardigerwijs	‘remarkably’	merkwaardig	‘remarkable, curious’
gelukkigerwijs	‘fortunately’	gelukkig	‘fortunate, happy’
normalerwijs	‘normally’	normaal	‘normal’
menselijkerwijs	‘humanly’	menselijk	‘humane’
begrijpelijkerwijs	‘understandably’	begrijpelijk	‘understandable’
logischerwijs	‘logically’	logisch	‘logical’
natuurlijkerwijs	‘naturally’	natuurlijk	‘natural’
billijkerwijs	‘fairly’	billijk	‘fair’
toevalligerwijs	‘coincidentally’	toevallig	‘coincidental’

Wise adverbs thus certainly do not *always* contain a present participle, but do they *ever* contain one? In other words, are the forms that are contained in the wise adverbs in the lefthand column in (8) indeed true present participles, or are they rather forms that happen to resemble the present participles in the righthand column? In Section 4 we argue that the latter option is correct, i.e. contrary to appearances, wise adverbs do not contain a true present participle at all. We argue that the examples in the lefthand columns of (8) and (11) contain the exact same morphosyntactic structure: wise adverbs are invariably built on top of an adjectival structure, and the *-end* suffix that is contained within the examples in (8) should not be considered a suffix that realizes a present participle, but rather an adjectival head. This raises the further question as to the location in the functional hierarchy of the verbal projections that are present in present participles, a question that we shall also address in Section 4.

The structure of the paper is as follows. In Section 2 we discuss the semantic properties of wise adverbs, arguing that these correlate with a certain morphosyntactic fingerprint. In Section 3 we present a proposal about the internal structure of wise adverbs. Section 4 argues that wise adverbs do not contain verbal projections, even when they embed a present participle. Section 5 discusses a paradox that our analysis raises, and Section 6 concludes.

## 2 Semantic properties of wise adverbs

Cinque (1999) has classified adverbs both on the basis of their position in the syntax, and their semantics. His classification is given in Figure 1.

*The universal hierarchy of clausal functional projections (a second approximation)*  
 [ *frankly* Mood<sub>speech act</sub> [ *fortunately* Mood<sub>evaluative</sub> [ *allegedly* Mood<sub>evidential</sub>  
 [ *probably* Mod<sub>epistemic</sub> [ *once* T(Past) [ *then* T(Future) [ *perhaps* Mood<sub>irrealis</sub>  
 [ *necessarily* Mod<sub>necessity</sub> [ *possibly* Mod<sub>possibility</sub> [ *usually* Asp<sub>habitual</sub>  
 [ *again* Asp<sub>repetitive(I)</sub> [ *often* Asp<sub>frequentative(I)</sub> [ *intentionally* Mod<sub>volitional</sub>  
 [ *quickly* Asp<sub>celerative(I)</sub> [ *already* T(Anterior) [ *no longer* Asp<sub>terminative</sub> [ *still* Asp<sub>continuative</sub>  
 [ *always* Asp<sub>perfect(?)</sub> [ *just* Asp<sub>retrospective</sub> [ *soon* Asp<sub>proximative</sub>  
 [ *briefly* Asp<sub>durative</sub> [ *characteristically(?)* Asp<sub>generic/progressive</sub> [ *almost* Asp<sub>prospective</sub>  
 [ *completely* Asp<sub>SgCompletive(I)</sub> [ *tutto* Asp<sub>PlCompletive</sub> [ *well* Voice [ *fast/early*  
 Asp<sub>celerative(II)</sub> [ *again* Asp<sub>repetitive(II)</sub> [ *often*  
 Asp<sub>frequentative(II)</sub> [ *completely* Asp<sub>SgCompletive(II)</sub>

Figure 1 The Cinque hierarchy of adverbs

We show that adverbs with *-erwijs* do not instantiate just a single one of these meanings, but can realise up to five different ones, listed in (12):

- (12) a. Evaluative mood  
 b. Alethic modality  
 c. Habitual aspect  
 d. Progressive aspect  
 e. Voice (manner)

We now proceed to illustrate each of these meanings. In doing so, we shall be relying not just on our semantic intuitions, but also on certain morphosyntactic diagnostics, which will be shown to make a distinction between the various readings. We illustrate these diagnostics using the first meaning, evaluative mood, as an example. The first diagnostic is the ability of the *-erwijs* adverb to be alternatively realized without the suffix but with the so-called auxiliary *genoeg* ‘enough’ (Barbiers 2001). This is shown below, with (13)a showing the *-erwijze* evaluative adverb, and (13)b the alternative without the suffix, but with *genoeg* ‘enough’.

- (13) a. Ongelukkig-erwijze werd hij ziek vlak voor het congres.  
 unlucky-ERWIJZE became he ill just before the conference  
 b. Ongelukkig genoeg werd hij ziek vlak voor het congres.  
 unlucky enough became he ill just before the conference  
 ‘Unfortunately I got ill just before the conference’

There is a complementary distribution between the suffix and *genoeg* ‘enough’, i.e. their stacking is impossible (\**ongelukkigigerwijze genoeg* ‘unfortunately enough’).

As Barbiers points out, the auxiliary or dummy *genoeg* ‘enough’ differs from the homonymous adjectival modifier *genoeg* ‘enough’ in that the latter projects argument structure, i.e. it is compatible with an Experiencer argument in a PP and a clause realizing a standard associated with the gradable adjective, as show in (14).

- (14) Ze was (voor de arts) ongelukkig genoeg (om opgenomen te worden).  
 she was for the doctor unhappy enough COMP admitted to be  
 'For the doctor, she was unhappy enough to be admitted.'

A second diagnostic is zero-marking. Dutch adverbs are as a rule not marked by any overt adverbial morphology, most adverbs being syncretic with adjectives. However, in the evaluative reading, no such zero-marking is possible:<sup>2</sup>

- (15) \*Ongelukkig kwam hij te laat.  
 unlucky came he too late  
 'Unfortunately, he arrived late.'

The third diagnostic involves co-occurrence with *al* 'while'. This is not possible in the evaluative mood meaning, but it is possible in the manner adverb meaning, as shown in (16):

- (16) (Al) zingend-erwijs kwam Mathilde de trap af.  
 while singing-ERWIJS came Mathilde the stairs down  
 'Mathilde walked down the stairs singing.'

Let us now go through the five meanings of *-erwijs* adverbs and show their properties with respect to these diagnostics. An overview is presented in Table 2.

Table 2 Overview of properties of *-erwijs* adverbs

	<i>genoeg</i>	zero	<i>al</i>
Mood <sub>eval</sub>	✓	X	X
Mod <sub>alethic</sub>	X	✓	X
Asp <sub>habitual</sub>	X	✓	X
Asp <sub>progressive</sub>	X	✓	✓
Voice <sub>manner</sub>	X	✓	X

We begin our discussion with the evaluative mood meaning, already illustrated in (13)a above. This meaning can be paraphrased with reference to the speaker, e.g. 'I, the speaker, find it A that S', where A is the adjective inside the evaluative adverb, and S is the sentence without the evaluative adverb. For example, (13)a can be paraphrased as 'I, the speaker, find it unfortunate that he became ill just before the conference.' Table 3 shows some additional examples of evaluative adverbs, and their behaviour with respect to zero marking and the possibility of auxiliary *genoeg* 'enough'.

<sup>2</sup> To our knowledge, there is only one evaluative adverb in Dutch that allows zero marking, which is *gelukkig* 'fortunately', e.g. *Gelukkig kwam hij op tijd* 'Fortunately, he arrived on time'. As a rule, however, evaluative adverbs disallow this. See De Clercq & Vanden Wyngaerd (2018) for discussion.

Table 3 Diagnostics applied to the evaluative mood adverbs

-erwijs	zero-marking	auxiliary <i>genoeg</i>	
merkwaardigerwijze	*merkwaardig	merkwaardig genoeg	'strangely'
verrassenderwijze	*verrassend	verrassend genoeg	'surprisingly'
interessanterwijze	*interessant	interessant genoeg	'interestingly'
begrijpelijkerwijze	*begrijpelijk	begrijpelijk genoeg	'understandably'
paradoxaalerwijze	*paradoxaal	paradoxaal genoeg	'paradoxically'
opvallenderwijze	*opvallend	opvallend genoeg	'strikingly'

Not shown in Table 3 is the impossibility of *al* 'while', which is impossible in general with the evaluative mood adverbs (see Table 2). An example is given in (17):

- (17) (\*Al) verrassend-erwijs kwam Dennis goed voorbereid naar de les.  
 PRT surprising-ERWIJS came Dennis well prepared to the class  
 'Surprisingly, Dennis came to class well-prepared.'

The second meaning is that of alethic modality. Alethic (or logical) modality is close to, but differs from, epistemic modality, in that it represents a state of affairs as necessary, possible, logical, etc., independently of the judgment of the speaker. Some examples are given below:

- (18) Een driehoek heeft noodzakelijk-erwijs drie hoeken.  
 a triangle has necessary-ERWIJS three corners  
 'A triangle necessarily has three angles.'
- (19) Een driehoek is mogelijk-erwijs gelijkzijdig.  
 a triangle is possible-ERWIJS equilateral  
 'A triangle is possibly equilateral.'
- (20) Dat kan je redelijk-erwijs afleiden uit de voorbeelden.  
 that can you reasonable-ERWIJS deduce from the examples  
 'You can reasonably deduce that from the examples.'

Interestingly, these adverbs show a rather different footprint than the previous category when it comes to the three diagnostics: they do allow zero marking, they are incompatible with auxiliary *genoeg* 'enough', and they disallow *al* 'while'.

- (21) Een driehoek heeft **noodzakelijk** (\*genoeg) drie hoeken.  
 a triangle has necessary enough three corners  
 'A triangle necessarily has three angles.'
- (22) Dat kan je **redelijk** (\*genoeg) afleiden uit de voorbeelden.  
 that can you reasonable enough deduce from the examples  
 'You can reasonably deduce that from the examples.'
- (23) Een driehoek heeft (\*al) **noodzakelijk-(erwijs)** drie hoeken.  
 a triangle has PRT necessary-ERWIJS three corners  
 'A triangle necessarily has three angles.'

In line with the predictions made by Cinque's hierarchy, evaluative mood adverbs must precede alethic modality ones:

- (24) a. Een driehoek is **interessant-erwijs mogelijk-erwijs** gelijkzijdig.  
 a triangle is interesting-ERWIJS possible-ERWIJS equilateral  
 'Interestingly, a triangle is possibly equilateral.'
- b. \*Een driehoek is **mogelijk-erwijs interessant-erwijs** gelijkzijdig.  
 a triangle is possible-ERWIJS interesting-ERWIJS equilateral

The third meaning is that of habitual aspect. Not many adverbs with *-erwijs* instantiate this meaning, but there are one or two. They typically appear with zero-marking, never allow auxiliary *genoeg* ‘enough’, not do they combine with *al* ‘while’.

- (25) Etenstijd is het moment waarop er **typisch-(erwijs)**gegeten wordt.  
 eating.time is the moment which.at there typical-ERWIJS eaten is  
 ‘Eating time is the time at which people typically eat.’
- (26) \*Etenstijd is het moment waarop er **typisch genoeg** gegeten wordt.  
 eating.time is the moment which.at there typical enough eaten is
- (27) \*Etenstijd is het moment waarop er **al typisch-(erwijs)**gegeten wordt.  
 eating.time is the moment which.at there PRT typical-ERWIJS eaten is

Most of the adverbs in this meaning class are zero-marked, and have no counterpart with *-erwijze*. This is shown in Table 4.

Table 4 Diagnostics applied to the adverbs of habitual aspect

<i>-erwijs</i>	zero-marking	auxiliary <i>genoeg</i>	
typischerwijze	typisch	*typisch genoeg	‘typically’
gebruikelijkerwijze	?gebruikelijk	*gebruikelijk genoeg	‘usually’
*gewoonlijkerwijze	gewoonlijk	*gewoonlijk genoeg	‘usually’
*meestalerwijze	meestal	*meestal genoeg	‘mostly’
*regelmatigerwijze	regelmatig	*regelmatig genoeg	‘regularly’

The fourth meaning category is that of progressive aspect. These adverbs only occur with a verbal base, i.e. they formally contain a verb followed by the *-end* suffix. They are the only category that can combine with *al* ‘while’, zero marking is generally possible, while auxiliary *genoeg* ‘enough’ is never possible.

- (28) (AI) zingend-erwijs kwam Mathilde de trap af.  
 PRT singing-ERWIJZE came Mathilde the stairs down  
 ‘Mathilde came down the stairs singing.’
- (29) (AI) zingend (\*genoeg) kwam Mathilde de trap af.  
 PRT singing enough came Mathilde the stairs down  
 ‘Mathilde came down the stairs singing.’
- (30) (\*?AI) terwijl ze zong kwam Mathilde de trap af.  
 PRT while she sang came Mathilde the stairs down  
 ‘While she sang, Mathilde came down the stairs.’

The meaning of progressive aspect can generally be paraphrased as in (30), with a subclause introduced by the temporal conjunction *terwijl* ‘while’.

The fifth and final meaning category is that of a manner adverb. These never take *al* ‘while’, always allow zero marking, while not tolerating auxiliary *genoeg* ‘enough’.

- (31) (\*AI) subtiel-**erwijze** liet hij merken dat die uitkomst hem niet beviel.  
 PRT subtly-ERWIJS let he know that that outcome him not pleased  
 ‘He subtly made it known that he was not pleased with the outcome.’
- (32) **Subtiel (\*genoeg)** liet hij merken dat die uitkomst hem niet beviel.  
 subtly enough let he know that that outcome him not pleased  
 ‘He subtly made it known that he was not pleased with the outcome.’

Several of the above adverb meanings can be stacked onto one another, as in the following example:



- (33) Interessant-erwijs<sub>Seval</sub> kan je redelijk-erwijs<sub>aleth</sub> rekenend-erwijs<sub>prog</sub>  
 interesting- ERWIJS can you reasonable- ERWIJS calculating-ERWIJS  
 uit de premissen nauwkeurig-erwijs<sub>manner</sub> de conclusie afleiden.  
 out the premises accurate-ERWIJS the conclusion deduce  
 ‘Interestingly, you can reasonably deduce the conclusion accurately from the premises by calculating.’

In sum, we have distinguished five different meanings that *-erwijze* adverbs can express, corresponding to five different categories of the Cinque hierarchy, which occur in the following order:

- (34) Mood<sub>evaluative</sub> > Mod<sub>alethic</sub> > Asp<sub>habitual</sub> > Asp<sub>progressive</sub> > Voice<sub>manner</sub>

In Table 5 we show the position of these meanings in the larger Cinque hierarchy. As the table shows, the five meanings are not all contiguous. The evaluative mood meaning is a high one, then the next three meanings form a contiguous cluster in the middle, while the manner adverb meaning is the lowest one in the hierarchy.

Table 5 The position of the *-erwijze* adverbs in the Cinque hierarchy

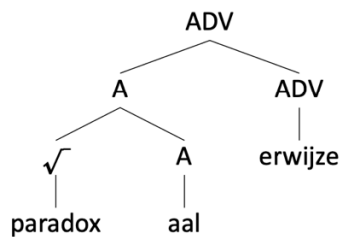
Cinque Type	English	<i>-erwijs</i>
Mood.speechAct	frankly	X
Mood.evaluative	fortunately	✓
Mood.evidential	allegedly	X
Mood.epistemic	probably	X
T.past	once	X
T.future	then	X
Mood.irrealis	perhaps	X
Mod.necessity	necessarily	✓
Mod.possibility	possibly	✓
Asp.habitual	usually	✓
Asp.repetitive.I	again	X
Asp.frequentative.I	often	X
Mod.volitional	intentionally	X
Asp.celerative.I	quickly	X
T.anterior	already	X
Asp.terminative	no longer	X
Asp.continulative	still	X
Asp.perfect	always	X

<b>Asp.retrospective</b>	just	X
<b>Asp.proximative</b>	soon	X
<b>Asp.durative</b>	briefly	X
<b>Asp.generic/progressive</b>	characteristically	✓
<b>Asp.prospective</b>	almost	X
<b>Asp.sg.completive.I</b>	completely	X
<b>Asp.pl.completive</b>	tutto	X
<b>Voice</b>	well	✓

### 3 The structure of wise adverbs

In this section we claim that all Dutch wise adverbs have exactly the same structure, which is presented in (35):

- (35) a. [[root + adjectival suffix] erwijze]  
b.



In this structure, a root is merged with an adjectival suffix and subsequently, the adverbial suffix *-erwijze* is merged. The suffix *-erwijze* thus selects an adjectival suffix and creates an adverb. We start the discussion with the adverbs that do not seem to contain a present participle, and we then extend the logic to those that do.

The suffix *-erwijze* selects a structure that contains a root and an adjectival suffix (De Haas & Trommelen 1993:354). All the examples of Dutch wise adverbs discussed so far show the suffix embedding a morphologically complex adjective. Underived adjectives are incompatible with *-erwijze*, as shown in Table 6.

Table 6 No wise adverbs from simplex adjectives

ADJECTIVE	ADJ+ERWIJZE	gloss
dom	*dommerwijs	'stupid'
ruw	*ruwerwijze	'rough'
lang	*langerwijze	'long'
gul	*gullerwijze	'generous'
fraai	*fraaierwijze	'pretty'

The large majority of the cases of the *-erwijze* adverbs therefore straightforwardly supports the structure in (35).

We next turn to those cases that contain an *-end* form. The structure in (35) would imply that the *-end* suffix in Dutch *-erwijze* adverbs is an adjectival rather than a verbal suffix. Although we think this is indeed the case, we need to discuss in some detail the properties of the *-end* form in order to make this argument. English *-ing* forms have been argued to show mixed properties, depending on the type of verb, with some showing the syntactic and morphological distribution of adjectives, whereas others have a verb-like distribution (Fabb 1984; Brekke 1988; see also Meltzer-Asscher 2010 for an overview). The adjectival properties include gradability, the possibility to apply derivational morphology (like suffixation with *-ly* and *un-*prefixation), and the potential to occur as a secondary predicate in a small clause. When an *-ing* form is derived from a psych-verb like *surprise*, it behaves like an adjective (36), but not when it is derived from an unergative verb like *cry* (37).

- (36) *gradability*: very surprising, more surprising  
*derivation*: surprisingly, unsurprising,  
*small clause*: I consider the question surprising.
- (37) *gradability*: \*very crying, \*more crying  
*derivation*: \*cryingly, \*uncrying  
*small clause*: \*I consider the boy crying.

A similar distinction has been observed for the Dutch *-end* forms. For example, Bennis & Wehrmann (1990) observe that, while all *-end* forms can occur attributively, only those derived from experiencer verbs may occur in predicative position (like adjectives), not those derived from nonergative verbs:

- (38) a. De vraag is verrassend  
the question is surprising  
'The question is surprising.'
- b. \*De jongen is huilend.  
the boy is crying

Adopting Belletti & Rizzi's (1988) claim that Experiencer verbs are underlyingly ergative, it is tempting to attribute the distinction in (38) to a syntactic contrast between ergative and nonergative verbs. However, we doubt that this terminology makes the correct distinction. For example, verbs which are ergative but do not involve an Experiencer appear to us not always felicitous in predicative position following a copula (pace De Haas & Trommelen 1993, p. 321), e.g. \*?Het kind is ontwakend 'The child is waking up'. Furthermore, as Bennis & Wehrmann (1990) observe, they are uniformly ruled out in predicative small clauses (e.g. \*Ik vind het kind ontwakend 'I find the child waking up'). There are also *-end* forms based on transitive verbs that can occur predicatively, particularly when they incorporate the object, as in *adembenemend* 'breath-taking', *oogverblindend* 'eye-blinding', *oorverdovend* 'ear-deafening'. But even without such an incorporated object, *-end* forms of transitive verbs can sometimes be used predicatively, particularly when they have a psychological interpretation.

- (39) a. De pijn/Haar schoonheid/Hun succes/Het licht was verblindend.  
the pain/her beauty/their success/the light was blinding  
'The pain/her beauty/their success/the light was blinding.'
- b. Haar schoonheid/Liefde/Hun muziek/??Chloroform is bedwelmend.  
her beauty/love/their music/ chloroform is stunning/intoxicating

- ‘Her beauty/Love/Their music/Chloroform is stunning/intoxicating.’
- c. De concurrentie/\*Die bende is moordend.  
 The competition/those gangs is murdering  
 ‘The competition is cutthroat.’  
 Int.: ‘That gang is murderous.’

The possibility for an *-end* form to occurring as a predicate seems therefore to depend more on its potential for a psychological, metaphorical, or merely high-degree reading, rather than on some syntactic property. We return to these observations in Section 5 below.

More directly relevant to our current purposes is the fact that, in attributive position, *-end* forms of experiencer verbs can display either verbal or adjectival properties. Bennis & Wehrmann (1990, p. 4) show this on the basis of the way the form’s argument structure is realized.

- (40) a. Haar gedrag ontroert mij/\*voor mij  
 her behaviour touches me/for me  
 ‘Her behaviour touches me.’  
 b. Haar gedrag is \*mij/voor mij pijnlijk.  
 her behaviour is me/for me painful  
 ‘Her behaviour is painful for me.’

Both the verb *ontroeren* ‘touch’ and the adjective *pijnlijk* ‘painful’ have an Experiencer argument, but with the verb this has to be realized as an NP, and with the adjective as a PP. Now if we derive an *-end* form from the verb *ontroeren* ‘touch’, both possibilities exist for the realization of the Experiencer (Bennis & Wehrmann 1990, p. 4):

- (41) de mij/voor mij ontroerende opmerking  
 the me/for me touching remark  
 ‘the remark that touched me’

This shows that the *-end* form can be either verbal or adjectival. This conclusion is further corroborated by stress patterns with separable particle verbs and adjectives derived from them (Bennis & Wehrmann 1990, p. 5-6). Separable particle verbs carry main stress on the particle, but adjectivizing derivational suffixes cause the stress to shift to the right (e.g. *úit-voeren* ‘implement’, *uit-vóer-baar* ‘implementable’; *áán-nemen* ‘accept’, *aan-ném-elijk* ‘acceptable’; *óp-merken* ‘notice’, *op-mérk-zaam* ‘attentive’). Now consider the verb *óp-vallen* (lit. *up-fall*), which means ‘strike’ in a psychological sense, i.e. to stand out. When followed by the suffix *-end*, stress can either remain on the particle, or shift to the right. The stress pattern correlates with the manner in which the Experiencer argument is realized.

- (42) a. de mij óp-vallende jongen  
 the me up-falling boy  
 b. de voor mij op-vállende jongen  
 the for me up-falling boy  
 ‘the boy that stood out to me’

In (42)a we are dealing with the verbal *-end* form, as witnessed by the stress on the particle, and the fact that the Experiencer appears as an NP. In (42)b, the stress shift and the realization of the Experiencer as a PP testifies to the adjectival status of the *-end* form.

The fact that *-end* forms are potentially ambiguous between a verb and an adjective raises the question which of its guises appears in the wise adverb. What we will claim is that the adverb has to contain the adjectival *-end*, in accordance with (35) above. This goes against a claim made in De Haas

& Trommelen (1993, p. 355) to the effect that the Dutch *-erwijze* adverbs contain the verbal *-end*. Their argument is based on the fact that unergative verbs, whose *-end* form cannot be an adjective on the basis of the diagnostic in (38), can give rise to *-erwijze* adverbs. This is shown in the first column of Table 7. However, what they fail to note is that the *-end* forms based on Experiencer verbs also give rise to *-erwijze* adverbs, as shown in the second column of the table.

Table 7 Wise adverbs from all types of verbs

Nonergative V		Experiencer V	
spelenderwijs	'effortlessly'	verrassenderwijs	'surprisingly'
vertellenderwijs	'narratively'	opvallenderwijs	'strikingly'
schertsenderwijs	'jokingly'	intrigerenderwijs	'intriguingly'
vragenderwijs	'questioningly'	beangstigerwijs	'frighteningly'
vergelijkerwijs	'comparatively'	opwindenderwijs	'excitingly'

Especially for the latter class, it is unproblematic to assume that they involve the adjectival *-end* form, since this can be shown to exist independently. Their structure does not differ from, for example *vermak-elijk-erwijze* 'amusingly', with a bona fide adjectival suffix *-elijk* embedded under the adverbial *-erwijze* (cf. (35)). But also for the forms in the first column of Table 7, we shall argue that they involve adjectival *-end*. Our main argument for this is the fact that inside the wise adverb, there is no trace of any verbal argument structure. We discuss the evidence showing this in the next section.

Before we proceed, we end this section by noting that wise adverbs of the type *spelenderwijze* 'playingly' (based on a nonergative verb) and of the type *verrassenderwijze* 'surprisingly' (based on an experiencer verb) occupy different spaces in the semantic grid that we proposed above. Note that some of the adverbs based on nonergative verbs can have either an aspectual ('while V-ing') or a manner interpretation ('in a V-ing manner'). For example, *spelenderwijze* can mean 'while playing', or 'in a playful manner, effortlessly'.

Table 7 Semantic distribution of morphological subtypes

	Type spelenderwijze	Type verrassenderwijze
Mood <sub>eval</sub>	X	✓
Mod <sub>alethic</sub>	X	X
Asp <sub>habitual</sub>	X	X
Asp <sub>progressive</sub>	✓	X
Voice <sub>manner</sub>	✓	X

## 4 Wise adverbs do not contain verbal projections

In Section 1 we already pointed out that there seems to be a relation between present participles and wise adverbs, both formally and semantically. Formally, the wise adverb can contain a present participle, while semantically they at first blush appear to be synonymous. We repeat the relevant examples in (43) and (44).

- (43) Zingend kwam Mathilde de trap af.  
singing came Mathilde the stairs down  
'Mathilde walked down the stairs singing.'
- (44) Zingend-erwijs kwam Mathilde de trap af.  
singing-ERWIJS came Mathilde the stairs down  
'Mathilde walked down the stairs singing.'

In this section we present evidence showing that the wise adverbs do not contain a true present participle with verbal structure. Making extensive use of the tests for verbal structure presented in Alexiadou, Anagnostopoulou and Schäfer (2004, p. 20, henceforth AAS 2004), we show that there is no evidence for any event structure or verbal structure in the wise adverb. In this respect, it contrasts with the present participle, which does show evidence for such projections. This supports our claim that the wise adverb contains an adjective rather than a verb.

We start out by applying three tests that probe for agentivity and thus for the presence of an external argument (AAS 2004, p. 20). Firstly, example (43) shows that the present participle has the ability to control the null subject of an infinitival clause, i.e. PRO. Example (44) shows that, in contrast, a wise adverb does not have this ability.

- (45) Schreeuwend om PRO hulp te krijgen rende ze door de stad.  
screaming to PRO help to receive ran she through the city  
'Screaming to receive help she ran through the city.'
- (46) \*Schreeuw-enderwijs om PRO hulp te krijgen rende ze door de stad.  
shouting-ERWIJS to PRO help to receive ran she through the city

The ability to control PRO indicates that the present participle has an external argument. The present participle thus has a Voice projection, hosting this argument. The inability to control for the adverb shows that it does not have an external argument and there is thus no evidence for a Voice projection either.

Secondly, the presence of an underlying subject for the present participle is supported by the fact that it can be modified by an agentive adverb (see AAS 2004, p. 20), as shown in (47) for the agentive adverb *vrijwillig* 'deliberately' and the present participle *zingend* 'singing'. In this respect as well, the present participle differs from the wise adverb *zingenderwijs* in (48), which cannot be modified by the agentive adverb *vrijwillig* 'deliberately'.

- (47) Vrijwillig zingend liep ze door de stad.  
voluntarily singing walked she through the city  
'Voluntarily singing she walked through the city.'
- (48) \*Vrijwillig zingend-erwijs liep ze door de stad.  
voluntarily singing-ERWIJS walked she through the city

Thirdly, the present participle can license instrumental adjuncts, whereas the adverb cannot. This is illustrated in (49) which contains the present participle *schreeuwend* 'shouting' and the instrumental adjunct *met een megafoon* 'with a megaphone' and in (50) which contains the same adjunct and the adverb *schreeuwend*.

- (49) Schreeuwend met een megafoon liep ze door de stad.  
shouting with a megaphone walked she through the city  
'Shouting with a megaphone she walked through the city.'

- (50) \*Schreeuwend-erwijs met een megafoon liep ze door de stad.  
 shouting-ERWIJS with a megaphone walked she through the city

The possibility to add an instrumental adjunct is again a test for agentivity, testing whether the structure contains an external argument (AAS 2004, p. 20). It is again confirmed that the present participle contains a Voice projection, licensing the external argument. There is no evidence for such a projection for the adverb.

Fourthly, consider the *by itself* test (Levin and Rappaport Hovav 1995; Chierchia 1989, 2004; Reinhart 2002; AAS 2004, p. 21; Koontz-Garboden 2009, section 3.4). *By itself* is an anaphoric modifier which must be licensed by an argument that has the thematic role agent or causer (Koontz-Garboden 2009). Hence, a sentence such as (51) is ungrammatical: the single argument of the passive sentence cannot be interpreted as the agent or causer (Chierchia 2004, p. 43 cites example (51), as does Koontz-Garboden 2009, p. 97). The *by itself* test is usually used to test for these fine-grained distinctions in argument structure and thematic roles. We use it in a cruder way: as it signals the presence of specific argument structure, it may also just signal the presence of argument structure. This allows us to compare the minimal pair in (52)-(53).

- (51) \*The boat was sunk by itself.  
 (52) Vanzelf brekend zakte het ijs weg.  
 of.self breaking dropped the ice away  
 'Breaking by itself the ice fell through.'  
 (53) \*Vanzelf brekend-erwijs zakte het ijs weg.  
 of.self breaking-ERWIJS dropped the ice away

Finally, the present participle can select objects, whereas the adverb cannot. This is shown in (54) in which the participle *brullend* 'screaming' selects the prepositional object *tegen haar vader* 'at her father'. The example in (55) shows that adverb *brullenderwijs* 'screaming' cannot select such an object.

- (54) Brullend tegen haar vader rende zij het huis uit.  
 screaming at her father ran she the house out  
 'Screaming at her father she ran out of the house.'  
 (55) \*Brullend-erwijs tegen haar vader rende zij het huis uit.  
 screaming-ERWIJS at her father ran she the house out

We can conclude that there is no evidence that wise adverbs would contain any verbal projections that allow the structure to select objects, in contrast with present participles.

So far we have established that WISE adverbs cannot host external or internal arguments. Now consider a test that shows they do not contain an event either. This appears from the fact that the event cannot be modified: the adjunct *urenlang* 'for hours' is illicit in example (56), whereas it successfully modifies the event of playing contained by the present participle in (57).

- (56) Urenlang spelend brachten de kinderen de zomer door op het strand.  
 for.hours playing brought the children the summer PRT at the beach  
 'Playing for hours the children spent their summer on the beach.'  
 (57) \*Urenlang spelend-erwijs brachten de kinderen de zomer door op het strand.  
 for.hours playing-ERWIJS brought the children the summer PRT at the beach

Finally, consider the fact that Dutch has noun-verb incorporation: the language allows certain nouns to head move and incorporate in verbs (see Baker 1988 on such incorporations). Being a verbal

structure, the present participle indeed allows such incorporation. This is illustrated in (58), in which the noun *piano* ‘piano’ has incorporated into the participle *spelend* ‘playing’. The wise adverb in (59) does not allow such incorporation, which is again an indication it does not contain any verbal structure.

- (58) Pianospelend verleidde hij de Amerikaanse gast.  
 piano.playing seduced he the American guest  
 ‘Playing the piano he seduced the American guest.’
- (59) \*Piano-spelend-erwijsverleidde hij de Amerikaanse gast.  
 piano-playing-ERWIJS seduced he the American guest

A final test (not mentioned by AAS 2004), is the possibility of participles to be built on the basis of inherently reflexive verbs, like *zich schamen* ‘to be ashamed’. Such verbs cannot appear inside a wise adverb.

- (60) Zich schamend over zijn belabberde prestatie verliet de speler het veld.  
 REFL shaming about his dismal performance left the player the court  
 ‘Ashamed about his dismal performance, the player left the court.’
- (61) \*Zich schamend-erwijs (over zijn belabberde prestatie) verliet de speler het veld.  
 REFL shaming-ERWIJS about his dismal performance left the player the court

We have seen that the tests show that, unsurprisingly, present participles show verbal structure. This served as a benchmark against which we have tested Dutch wise adverbs. Unlike the participles, they do not show any evidence for the presence of verbal structure: we were not able to establish the presence of an external or internal argument, of event structure, or mere verb-hood. The unequivocal results of the tests are summarized in Table 8.

Table 8 Summary of the AAS 2004 diagnostics for verbal projections

	Present participle	-erwijze adverb
External argument	✓	*
Internal argument	✓	*
Modification of the event	✓	*
Noun incorporation into the verb	✓	*
Inherently reflexive verbs	✓	*

We conclude that Dutch wise adverbs simply do not contain any verbal structure. This is true even for the ones that embed an *-end* form derived from a nonergative verb, which, as we have seen above, show verbal characteristics, such as the impossibility to occur in predicative position (see (38)b above). In the final section, we discuss a paradox that this state of affairs gives rise to.

## 5 A paradox

The paradox that we are about to discuss concerns the analysis of the *-end* form, which appears to have both verbal and adjectival properties. As such, this paradox is not central to the topic of this paper, which is that of the wise adverbs. Giving an account of the paradox is beyond the scope of the present discussion, but we nevertheless wish to sketch some of its contours here.



In the previous section, we have reached the conclusion that that *-erwijs* adverbs uniformly embed an adjective, also in those cases where the adjective is marked by the *-end* suffix. The paradox now is that *-end* forms that are by an independent measure clearly adjectival do project verbal structure. A case in point are the present participles discussed in the previous section. Functioning as subject complements, these have an external distribution that is closer to that of an adjective (or adverb) than that of a verb. Another apparently adjectival guise of the *-end* form is when it occurs in attributive position, where it shows typical adjectival inflection:

- (62) De spelend-e kinderen maakten een pokkeherrie.  
 the playing-AGR children made a racket  
 'The playing children made a racket.'

The paradox now is that both in the subject complement position and the attributive position, the *-end* form passes all the tests of AAS 2004 for the presence of verbal argument structure. For the subject complement position, this was extensively illustrated in the previous section. For the attributive position, we will not go through the entire inventory of tests, but just illustrate two of them. In (63)a we see an instrumental adjunct, and in (63)b an incorporated noun.

- (63) a. De met de trommel spelend-e kinderen maakten een pokkeherrie.  
 the with the drum playing-AGR children made a racket  
 'The children playing with the drum made a racket.'  
 b. De piano-spelend-e kinderen maakten een pokkeherrie.  
 the piano-playing-AGR children made a racket  
 'The children playing the piano made a racket.'

To these, we can add Bennis and Wehrmann's example in (42)a above, repeated here:

- (64) de mij óp-vallend-e jongen  
 the me up-falling-É boy  
 'the boy that stood out to me'

This example shows an *-end* form based on an experiencer verb in attributive position, with verbal realisation of its Experiencer argument (i.e. as an NP), and the stress pattern characteristic of verbs (i.e. no rightward stress shift). Note, however, that such verbal properties are not possible in predicative position, either following a copula, or in a predicative small clause (Bennis & Wehrmann 1990, p. 6).

- (65) a. De jongen is op-vállend voor mij.  
 the boy is up-falling for me  
 b. \*De jongen is (mij) óp-vallend.  
 the boy is me up-falling  
 'The boy stands out to me.'  
 c. Ik vind de jongen op-vállend/\*óp-vallend.  
 I find the boy up-falling/up-falling  
 'I find the boy striking.'

So there is some property X, which the attributive position has, and the predicative one lacks, and which licenses verbal projections. What could this X be? Another property the attributive position has and the predicative one lacks is the É-morpheme (see (64)), traditionally described as an adjectival agreement morpheme. The idea we would like to explore here is that this morpheme is more than just an agreement marker, and does some actual morphosyntactic work. The reason for

taking it to be an agreement morpheme is that is sensitive to the gender, number, and definiteness of the noun. Specifically, it remains absent when the noun is neuter singular and indefinite, e.g. *een<sub>INDEF</sub> leuk-Ø boek<sub>N.SG</sub>* ‘a nice book’. However, this makes it a somewhat uncharacteristic agreement morpheme, to say the least.

Before we go on exploring the idea the E-morpheme is more than an agreement marker, we need to dispose of a nonsolution first. One might be tempted to assume that the attributive forms are derived from a verbal base by some form of zero morphology. Suppose we start with a root at the bottom, then the root would first be verbalised (by *-end*), and can subsequently become an adjective (through the addition of a zero morpheme). This suggests an underlying functional sequence as in (66)a. The participle *spelend* ‘playing’ would correspond to the verbal subconstituent in (66)b, whereas the adjective would correspond to the entire structure:

- (66) a.  $\text{root} < V < A$   
 b.  $[_A [_V [\text{speel}] \text{end}_V] \emptyset_A]$

The structure of the adverb under this approach would be one with the adverbial head on top of the entire hierarchy:

- (67) a.  $\text{root} < V < A < \text{ADV}$   
 b.  $[_{\text{ADV}} [_A [_V [\text{speel}] \text{end}_V] \emptyset_A] \text{erwijs}_{\text{ADV}}]$

But this leads to the prediction that the wise adverb should contain verbal argument-licensing structure, contrary to fact. What we want instead is something like (68) for the wise adverb:

- (68) a.  $\text{root} < A < \text{ADV}$   
 b.  $[_{\text{ADV}} [_A [\text{speel}] \text{end}_A] \text{erwijs}_{\text{ADV}}]$

However, to the extent that we allow (66)a, i.e. the structure where the adjectival participle embeds a verb, there seems to be no way we can avoid the undesirable (67)b, since the *-erwijs* suffix embeds a derived adjective (satisfying our structure for wise adverbs (35) above), which in turn embeds a verb, following (66)a).

We believe that at least some of the undesirable consequences just sketched can be avoided by making a minimal change to our assumptions. This change involves the reversal of the order of the verbal and adjectival heads in our initial structure (66), as shown in (69):

- (69) a.  $\text{root} < A < V$   
 b.  $[_A [_V [\text{speel}] \text{end}_A] \emptyset_V]$

This means that in a verbal participle, we derive the verb from the adjective, rather than the other way round. The advantage this has is that we can explain why the wise adverb does not contain any verbal argument-projecting structure. This is because the ADV head comes directly on top of the adjective contained in (69), as shown in (68) above.

Now there remains the question of the attributive, argument-structure projecting, forms in (62) and (63). While we shall not claim to have a complete account of those, we want to capitalise on the presence of the purported agreement morpheme in the attributive forms. As already indicated, we take this to be something more than just an agreement morpheme; for want of a better name, we call it an E head, which we put on top of (69):

- (70) a.  $\text{root} < A < V < E$   
 b.  $[_A [_V [\text{speel}] \text{end}_A] \emptyset_V] e]$

This structure necessarily has the verbal projection, accounting for the presence of verbal argument structure. At the same time, there is the E-morpheme. What we want to claim is that this morpheme licenses both the verbal projection, and the attributive use. An interesting observation in this respect is that present participles used as subject complements can also appear with this E-morpheme:

- (71) Komend-e vanuit het noorden vind je makkelijk de weg.  
 coming-E from the north find you easy the road  
 'Coming from the north, you will find the way easily.'

And its presence on the participle also improves its status in predicative position:

- (72) Hij is (de weg) zoekend-e.  
 he is the road searching-E  
 'He is looking for the road.'

Note that even verbal argument structure may also be projected in this case, as (72) shows. So it seems that it is the E-morpheme that is (a) responsible for licensing verbal structure, and (b) for allowing the verb to occur in typical adjectival positions. Admittedly, this analysis raises many questions, the most prominent of which is why the E-morpheme has the properties that it has. Since, as we noted at the outset of this section, the issues of the structure of the participle and the adjectival agreement are somewhat orthogonal to the central concerns of this paper, we shall let them rest at this point.

## 6 Conclusion

We have presented a case study on Dutch adverbs formed with the suffix *-erwijs*. We have shown that the question whether other Germanic adverbial suffixes are equivalents of this suffix is unprecise and misguided. The reason for this is that that *-erwijs* can realise up to five different meanings, each with a different position in the Cinquean hierarchy of adverbial projections. We presented diagnostics separating these five different meanings from each other. Next, we have proposed a structure for the wise adverbs, where they embed an adjectival suffix and a root. This raised certain problems for the wise adverbs formed on the basis of *-end* forms, which we showed to be ambiguous between verbs and adjectives. We argued that inside wise adverbs, they are always adjectives, since they fail to license any verbal argument structure. We finally examined a paradox this gave rise to, namely that attributive participles do license verbal argument structure. We have proposed to solve this paradox by putting verbal argument structure projecting heads higher in the structure than adjectival heads, and by assuming an AGR head on top of that. This head also appears in present participles elsewhere, and licenses the verb to occur in adjectival positions.

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