

Infinitivus pro participio, active versus passive

Marcel den Dikken

*Department of English Linguistics • SEAS • Eötvös Loránd University
Research Institute for Linguistics • Hungarian Academy of Sciences*

1 The problem

1.1 The IPP effect in active contexts

The Continental West-Germanic languages (Dutch, Afrikaans, German and many of their dialects, but not Frisian; see section 4, below, on this variation) are famous for a peculiar morphosyntactic phenomenon manifesting itself in triverbal periphrastic perfects in which the complement of the auxiliary selects an infinitive: in such contexts, the complement of the auxiliary may (in the case of ‘to’-infinitives) or even must (in the case of ‘bare’ infinitives) be shorn of the past-participial morphology that one would have expected to see under the auxiliary. We see this in (1) and (2). (Here and throughout, ‘unexpected’ infinitives will be printed in boldface, for easy spotting; their corresponding participles will be printed in italics.)

- (1) a. *hij had het boek *gewild* lezen
he had the book want.PTC repair
b. hij had het boek **willen** lezen
he had want.IPP/wanted.PTC repair
- (2) a. hij had het boek *geprobeerd* te lezen
he had the book try.PTC to repair
b. hij had het boek **proberen** te lezen
he had the book try.IPP to repair

This is known in the literature as the *infinitivus-pro-participio* effect — ‘IPP’ for short (whence the glosses of *willen* and *proberen* in (1b) and (2b)). English does not show this effect in its counterparts to examples in (1) and (2): the b-examples in (3) and (4) are crashingly bad.

- (3) a. he had *wanted* to read the book
b. *he had **want** to read the book
- (4) a. he had *tried* to read the book
b. *he had **try** to read the book

To say that English does not feature an IPP effect at all would be too categorical a claim, however. Consider the English example in (5) up close. The orthography of *read* in (5) hides an interesting twist in this example. As Emonds (1976:115) has noted, there is a difference between the first and second conjuncts in the form of the main verb: in the first conjunct, it is the past-participial form, pronounced /rɛd/; but in the second, *read* can be pronounced /ri:d/, like the infinitive.¹

¹ Breul (2014) notes that the IPP version of VP topicalisation examples is in fact more widely attested in corpora than the participial one. Nonetheless, there clearly is variation, both among speakers and between individual cases. A reviewer finds many of the VP topicalisation examples with IPP questionable, and points out that with certain verbs the result is particularly woeful:

- (5) he says that he has read the book, and read the book, he has

The examples in (6) and (7), featuring verbs whose infinitives and past participles are spelt differently, bring this out directly in the orthography.

- (6) he says that he has taken these pictures, and *taken*/**take** these pictures, he has
 (7) he says that he has fixed the car, and *fixed*/**fix** the car, he has

This is an *infinitivus-pro-participio* (IPP) effect of sorts (see also Kayne 2005:99 for an assimilation of the infinitival cases in (5)–(7) to Continental West-Germanic IPP), apparently brought about by topicalisation of the complement of the auxiliary of the perfect, *has*.

While English does not give rise to an IPP effect in its equivalents to the Dutch examples in (1b) and (2b), Dutch in its turn shows no IPP effect in its counterparts to the English examples in (5), (6), and (7) — regardless of whether the entire VP (8b) or just the verb (8c) is fronted, there must be a participle in the examples in (8):

- (8) a. hij heeft het boek niet *gelezen*/***lezen**
 he has the book not read.PTC/read.IPP
 b. het boek *gelezen*/***lezen** heeft hij niet
 the book read.PTC/read.IPP has he not
 c. *gelezen*/***lezen** heeft hij het boek niet
 read.PTC/read.IPP has he the book not

Not only does the fronted verb show no IPP, the VP-fronting process even bleeds IPP on the middle verb in triverbal constructions of the type in (1) and (2) when only the projection of the most deeply embedded verb is fronted, as we see in (9):²

- (i) he said that he had been there, and {*been*/***be**} there, he had
 (ii) he said that he had done the work, and {*done*/***do**} the work, he had

(i) relates to the discussion of IPP with *zijn* ‘be’ in Dutch later in the paper, where it is noted that with this verb it is never the citation infinitive that replaces the participle: instead of *zijn*, the ‘IPP form’ is *wezen*, which is based on the participial stem. This suggests that ‘*infinitivus pro participio*’ is strictly speaking a misnomer: we are not literally dealing with an infinitive substituting for a participle, but rather with a truncation of the participial form (*ge-wees-t* > *wees*), accompanied (in Dutch but not in English) by insertion of the infinitival suffix. For English *been*, truncation of the participle /bɪn/ by chopping off the participial suffix /n/ would result in an illegitimate form (*/bɪ/). Similarly, truncation of the participle /dʌn/ *done* in (ii) via removal of /n/ would produce an ill-formed surface form (*/dʌ/). This is probably what causes (i) and (ii) to be impossible with IPP. For the examples given in the main text, truncation of the participle by dropping participial morphology does not deliver illicit surface forms; so these cases are kosher.

The reviewer also notes that in the presence of certain material preceding the verb of the topicalised VP, IPP becomes impossible as well: (iii) is the reviewer’s example. I have not had a chance to examine this effect in any detail, so I cannot say anything about the range of preverbal elements that have this effect. But for the particular case of *only* in (iii), I suspect that the ban on IPP can be understood from the perspective of Thoms & Walkden’s (2018) proposal, discussed in section 2, below: the focus particle *only* needs to be construed with the Foc head (in clause-internal position here: there is no subject–aux inversion in (iii)), which precludes an ellipsis derivation (which would have procured IPP), leaving only a derivation involving movement (which delivers a participle).

- (iii) he said that he had only taken these pictures, and only {*taken*/***take**} these pictures, he had

2 In Dutch cases of topicalisation of the complement of verbs like *proberen* ‘try’, which normally select only *te*-infinitives, the infinitival marker *te* can be dropped, as shown in (9b) (Zwart 1993:263; for some speakers, the present author included, dropping *te* is the preferred option).

- (9) a. het boek lezen heeft hij altijd *gewild*/***willen**
 the book read.INF has he always want.PTC/want.IPP
 b. het boek (te) lezen heeft hij nog nooit *geprobeerd*/***proberen**
 the book to read has he yet never try.PTC/try.IPP

However, when the projection of the middle verb (the equivalent of English *want* or *try*) is fronted, stranding just the auxiliary of the perfect, IPP does manifest itself — as before, optionally in the case of *te*-infinitives and obligatory with ‘bare’ infinitives:

- (10) a. het boek **willen**/ **gewild* lezen heeft hij altijd
 the book want.IPP/want.PTC read.INF has he always
 b. het boek **proberen**/*geprobeerd* te lezen heeft hij nog nooit
 the book try.IPP/try.PTC to read.INF has he yet never

1.2 The IPP effect in passive contexts

The IPP effect is usually studied only in active contexts. For a comprehensive picture, it is important to include the passive voice as well, because differences present themselves in the realm of IPP between active and passive constructions, in both Dutch and English.

Let me begin again with Dutch. For the modal examples in (1), there are no grammatical passive counterparts, probably for the same reason that English *he wanted to read the book* does not passivise (**the book was wanted to be read (by him)*). But we can check the effect of passivisation on triverbal constructions with a bare infinitive in the most deeply embedded position by looking at *laten* ‘let’ causatives. The passive examples in (12) (corresponding to the active *laten*-causatives in (11)) are rarely discussed in the literature, probably because (12) is not generally accepted in Dutch. Coopmans (1985) reports examples of the type in (12a) as acceptable in his Dutch, but other speakers (the present author included) find (12a) rather marginal. There is no blanket ban on passives of *laten*-causatives, however: the idiomatic example in (12b), the impersonal-passive counterpart to (11b), sounds perfectly fine; plenty of tokens of this type are attested on the internet (as a simple search for the string *zijn laten vallen* will show; the subject of such examples is almost invariably *steken* or its diminutive *steekjes*).³

3 Some attested examples featuring the idiom *steken/steekjes laten vallen* (as well as one involving a different *laten vallen* idiom, corresponding to English *drop* or *dump* in their figurative sense) are included in (i). In (ii), I list some non-idiomatic tokens of the *zijn laten vallen* string (which to my ear generally sound somewhat less good than those in (i), but are still squarely within the realm of the acceptable).

- (i) a. een klein minpunt is de productie, waar toch een paar steekjes bij zijn laten vallen
 a small minus-point is the production where yet a few stitches-DIM with are let drop
 b. het is een hele grote verantwoordelijkheid waarin wat steekjes zijn laten vallen
 it is a very big responsibility wherein some stitches-DIM are let drop
 c. als er in één zaak in de hele justitieketen zoveel steken zijn laten vallen
 if there in one case in the whole justice-chain so-many stitches are let drop
 d. dat er ook bij de onzichtbare afwerking steken zijn laten vallen
 that there also with the invisible finishing stitches are let drop
 e. een prachtig boek dat je laat inzien dat er heel wat steken zijn laten vallen bij onderzoeken
 a beautiful book that you let realise that there quite some stitches are let fall in researches
 f. ik weet dat sommigen van jullie verschrikkelijk zijn laten vallen door jullie ouders
 I know that some of you terribly are let drop by your parents

- (11) a. ze hebben het boek **laten**/**gelaten* lezen
they have the book let.IPP/let.PTC read.INF
‘they have had the book read’
b. ze hebben steken **laten**/**gelaten* vallen
they have stitches let.IPP/let.PTC drop.INF
‘they have made mistakes’
(12) a. %het boek is **laten**/**gelaten* lezen
the book is let.IPP/let.PTC read.INF
‘people were given the chance to read the book’
b. er zijn steken **laten**/**gelaten* vallen
there are stitches let.IPP/let.PTC drop.INF
‘mistakes have been made’

In passive (12) the *infinitivus-pro-participio* effect is just as much in evidence as it is in the active sentences in (11): the form of the causative verb is the bare infinitive *laten*; using not past-participial *gelaten* is ungrammatical in both (11) and (12). Fronting the projection of the causative verb preserves the IPP effect (see (13b)), similarly to what we see in active (13a) (cf. (10)).⁴

- (13) a. **laten**/**gelaten* lezen hebben ze het boek nog nooit
let.IPP/let.PTC read.INF have they the book yet never
b. %**laten**/**gelaten* lezen is het boek nog nooit
let.IPP/let.PTC read.INF is the book yet never

Let us turn next to the *te*-infinitives in (2). Rather marginally (and subject to speaker variation), a ‘long passive’ based on (2) is possible (see Wurmbrand 2001 and others for discussion of such constructions in German). But interestingly, while active (2) offers the speaker of Dutch a choice between a participle and an IPP-infinitive, to the extent that it works (14) is possible only without IPP.

- (ii) a. dit zijn voorwerpen die door de persoon die is weggelopen zijn laten vallen
this are objects that by the person that is away-run are let drop
b. het diertje moet door een kraai of reiger in onze tuin zijn laten vallen
the animal-DIM must by a crow or heron in our garden be let drop
c. verdenkingen tegen haar zijn laten vallen
suspicions against her are let drop
d. de proefpersoon wordt beoordeeld op tijd, bloedverlies en nietjes die zijn laten vallen
the test-person becomes judged on time blood-loss and staples that are let drop

⁴ Peculiarly, topicalisation of the projection of the most deeply embedded verb fails regardless of the form of the causative verb — both in the active and in the passive (see (i)). This is not due to a general ban on topicalisation of the complement of causative *laten* ‘let’: when *laten* is finite, the result is grammatical (see (ii)). This restriction on VP-fronting in causative constructions is not something that I will try to provide an account for here.

- (i) a. *lezen hebben ze het boek nog nooit **laten**/*gelaten*
read.INF have they the book yet never let.IPP/let.PTC
b. *lezen is het boek nog nooit **laten**/*gelaten*
read.INF is the book yet never let.IPP/let.PTC
(ii) lezen laten ze het boek niet
read.INF let they the book not

- (14) %het boek is *geprobeerd*/***proberen** te lezen
 the book is try.PTC/try.IPP to read.INF
 ‘people tried to read the book’

The contrast between (12) (where IPP remains obligatory under passivisation) and (14) (where IPP becomes impossible where it used to be optional in the active) is remarkable. The ill-formedness of (14) with infinitival *proberen* suggests that passivisation can influence the distribution of IPP.

In English we see an effect of voice on IPP as well — in fact, more directly, thanks to the fact that the English examples to follow are not from the rather marginal and speaker-variable underworld. In the English passives in (15)–(17), we find no IPP effect induced by VP-topicalisation, in contrast to what we saw in the active examples in (6)–(8): *read* in (15b) is pronounced /rɛd/, not /ri:d/; and leaving out the participial morphology in (16b) and (17b) is impossible.

- (15) a. this book has certainly been read by many
 b. read by many, this book certainly has been
- (16) a. these pictures have certainly been taken by him
 b. *taken*/***take** by him, these pictures certainly have been
- (17) a. the car probably has been fixed by now
 b. *fixed*/***fix** by now, the car probably has been

1.3 The explananda

The distribution of past participles and infinitives in periphrastic perfect and passive contexts in Dutch and English presents us with the following explananda:

- ① Dutch triverbal constructions of the type in (18), with a bare infinitive in the most deeply embedded position:
- a. obligatory IPP in the ACTIVE voice without VP-fronting — (1), (11)
 b. obligatory IPP in the ACTIVE voice with fronting of the projection of V2 — (10a)
 c. illicit IPP in the ACTIVE voice with fronting of the projection of V3 — (9a)
 d. obligatory IPP in the PASSIVE voice — (12)
- (18) [V1=AUX [V2 [V3]]]
- ② Dutch triverbal constructions of the type in (19), with a *te*-infinitive in the most deeply embedded position:
- a. optional IPP in the ACTIVE voice without VP-fronting — (2)
 b. optional IPP in the ACTIVE voice with fronting of the projection of V2 — (10b)
 c. illicit IPP in the ACTIVE voice with fronting of the projection of V3 — (9b)
 d. illicit IPP in the PASSIVE voice — (14)
- (19) [V1=AUX [V2 [*te* V3]]]
- ③ VP-fronting constructions involving the complement of auxiliary *have/be*:
- a. optional IPP in the ACTIVE voice in English but illicit IPP in Dutch — (5)–(7) vs (8)
 b. illicit IPP in the English PASSIVE voice — (15)–(17)

The remainder of this paper is about trying to shed explanatory light on these explananda. I will begin by tackling the third problem set.

2 English IPP: Thoms & Walkden (2018)

In a thought-provoking and empirically rich paper, Thoms & Walkden (2018) argue that VP-fronting can in principle come about in two different ways in syntax: (a) via a garden-variety instance of movement, or (b) via base-generation *cum* ellipsis. The derivation in (a) is of course entirely straightforward, and requires no particular defence in the context of mainstream generative linguistics. Suffice it to make just one essential remark about it: derivations employing (a) MUST feature a total identity relation between the moved constituent and the copy left behind in the position of the PF-gap. For the derivation in (b), this identity condition is looser — and it is here that Thoms & Walkden find their explanation for the difference between our (5)–(7), on the one hand, and (15)–(17), on the other.

The examples in (5)–(7) with an infinitive instead of the expected past participle can be derived along the lines of the derivation in (b) (which I am simplifying in this paper for expository purposes; the interested reader is referred to Thoms & Walkden’s work for details glossed over here), with either a bare-infinitival or a participial VP base-generated in topic position, linked to an elliptical participial VP in the complement of the auxiliary of the perfect:

(20) [VP *fixed/fix* the car] he has [VP <~~*fixed the car*~~>]

Thoms & Walkden support their hypothesis that (5)–(7) with an initial infinitive can be derived with an appeal to ellipsis on the basis of the observation that a bare-infinitival VP can independently be shown to be able to license ellipsis of a past-participial VP in active periphrastic perfects, as in:

(21) A: she didn’t lose her temper
 B: she has TOO <lost her temper>

And interestingly, Thoms & Walkden point out such a mismatch is illegitimate passive contexts:⁵

(22) A: John didn’t penalise Molly unfairly
 B: *she was TOO <penalised unfairly>

5 I modified Thoms & Walkden’s example (54) (reproduced below as (i)) to eliminate a confound noted by a reviewer of my paper: in (i) the modal introduces a complication that also renders active (ii) ungrammatical. (iB) and (iiB) are ungrammatical for independent reasons (perhaps prosodic in nature) having to do with the distribution of *TOO*: in the absence of *TOO*, with *verum focus* on the modal, both examples are fine; and in VP-fronting constructions, the presence of a modal makes no difference either: see (iii). Dropping the modal from (i) delivers (22) in the main text, which makes Thoms & Walkden’s point without confounds.

- (i) A: John won’t penalise Molly unfairly
 B: *she will TOO be <penalised unfairly>
 (ii) A: she won’t have lost her temper
 B: *she will TOO have <lost her temper>
 (iii) he thinks he must have taken these pictures, and {*taken/take*} these pictures, he must have indeed

This, in turn, explains why the variants of (15)–(17) with an infinitive in lieu of a past participle are ungrammatical: such sentences can be derived neither via (a) (because of the absence of total identity between the topicalised VP and the copy in the gap position) nor via (b) (in view of (22)); so there is no path towards deriving the infinitival versions of passive (15)–(17), whereas the infinitival versions of active (5)–(7) can be derived along the lines of (b), given the grammaticality of (21).

3 No VP ellipsis of the complement of aspectual auxiliaries in Dutch

Thoms & Walkden (2018) do not say much about Continental West-Germanic, and what little they say about German (in terms of scrambling) may not generalise to Dutch because Dutch, although it certainly has scrambling, is much less prolific in its range of scrambling options than is German. But Thoms & Walkden’s approach to the English facts actually gives them an excellent handle on the Dutch (and German) data (entirely independently of scrambling), once we remind ourselves of a major difference between Dutch/German and English in the realm of ellipsis phenomena.

While the English auxiliaries *have* and *be* liberally allow ellipsis of their complements, such VP ellipsis is generally impossible in Dutch (and German; illustration will only be provided for Dutch, as before, for space reasons):

- (23) a. Bob has read this book, and Peter (has) __, too
 b. this book was read by Bob, and that book (was) __, too
- (24) a. Bob heeft dit boek gelezen, en Peter (*heeft) ook __
 Bob has this book read and Peter has too
 b. dit boek is door Bob gelezen, en dat boek (*is) ook __
 this book is by Bob read and that book is too

Stripping the second conjunct down to just its subject and *too/ook* is grammatical in both languages. English also allows VP ellipsis in the complement of the auxiliaries *have* and *be*, but Dutch does not.

The answer to the question of why Dutch cannot mimic English in fronting a bare-infinitival VP in constructions featuring an auxiliary selecting a participle (recall (8)) is now obvious. Since Dutch does not allow VP ellipsis in the complement of the auxiliary for independent reasons, it cannot avail itself in VP-fronting constructions of an ellipsis-based derivation along the lines of (20). If the palette of options is restricted to (a) movement and (b) base-generation *cum* ellipsis (as Thoms & Walkden assume), then the unavailability of (b) in Dutch confines the language to a movement-based derivation.⁶ Movement forces complete identity between the fronted VP and the silent copy in the position of the gap. Since the latter is necessarily participial (because it is the complement of a participle-selecting auxiliary), this delivers the desired result that only the participial variants of (8) are grammatical.

6 Left-dislocation with a *d*-word resumptive, as in (i), can be recast as an instantiation of the (b) scenario: Thoms & Walkden’s (2018) analysis postulates a null operator in the left periphery of the clause alongside the VP base-generated there; the *d*-word can be thought of as the lexicalisation of this operator.

- (i) a. het boek gelezen/*lezen dat heeft hij niet
 the book read.PTC/read.IPP that has he not
 b. gelezen/*lezen dat heeft hij het boek niet
 read.PTC/read.IPP that has he the book not

This now completes the discussion of the third cluster of explananda listed in section 1.3:

- ③ VP-fronting constructions involving the complement of auxiliary *have/be*:
- a. optional IPP in the ACTIVE voice in English but not in Dutch — (5)–(7) vs (8)
 - b. illicit IPP in the English PASSIVE voice — (15)–(17)

4 Dutch IPP: The morphosyntax of the past participle

Two sets of explananda remain on the agenda, both addressing Dutch: ① and ②. In this section, I will start by presenting an outlook on the roots of the IPP effect in Dutch in which the prefix *ge-* of past participles plays a central role. I will subsequently account for the explananda in ①, involving triverbal constructions with a ‘bare’ infinitive as the most deeply embedded verb, as in (18) (repeated below). The problems in ② will be left for section 5.

(18) [V1=AUX [V2 [V3]]]

4.1 The morphosyntax of the past participle and the IPP form in Dutch

A key empirical observation about the distribution of the IPP effect in Continental West-Germanic is that it strongly tends to occur only in those dialects whose past participles are generally formed with the help of the prefix *ge-* (see Vanden Wyngaerd 1994, Zwart 2011:310, and references to the earlier literature cited there).⁷ Frisian and the Stellingwerf dialect are two examples of varieties that systematically lack *ge-* and also lack IPP; standard Dutch, on the other hand, as a rule features *ge-* on its past participles and exhibits the IPP effect.

There is some noise in this generalisation (apart from what was mentioned in fn. 6): for a sizable set of verbs, the past participle in standard Dutch does not host *ge-*. The prefix *ge-* is consistently incompatible with stressless inseparable particles and the prefix *her-* ‘re-’, so verbs hosting one of these elements to the left of the stem cannot form their past participle with *ge-*. In (25b–d) we see a triple of cases involving the verb *leven* ‘live’ which illustrates the general pattern:

(25)	INFINITIVE	PAST PARTICIPLE
a.	<i>leven</i> ‘live’	*(<i>ge-</i>) <i>leef-d</i>
b.	<i>her-leven</i> ‘relive’	*(<i>ge-</i>) <i>her-leef-d</i>
c.	<i>be-leven</i> ‘experience’	*(<i>ge-</i>) <i>be-leef-d</i>
d.	<i>over-leven</i> ‘survive’	*(<i>ge-</i>) <i>over-leef-d</i>

But these exceptions to the general rule that the past participle of standard Dutch is formed with the help of the prefix *ge-* are immaterial for the discussion of the IPP effect: no verb prefixed with *her-* or a stressless particle can serve as V2 in the structure in (18) (for reasons that will actually follow from the discussion of (29), below); since V2 is the undergoer of IPP, we can safely set verbs of the type in (25b–d) aside for now (although I will return to them a bit later in this subsection).

⁷ Hoekstra & Taanman (1995) point out that in the Westfries dialect *ge-* does not occur on past participles yet IPP is found nonetheless. They attribute this to influence from the standard language.

Verbs that can serve as V2 in the schema in (18) are the modals (which in Dutch have full inflectional paradigms, unlike their English counterparts), the causative/permissive verb *laten* ‘let’, the perception verbs *horen* ‘hear’, *voelen* ‘feel’ and *zien* ‘see’, and the aspectual auxiliary *zijn* ‘be’ — this last one occurs as V2 only in the perfect of constructions of the type illustrated by *ik ben vissen* ‘I am away fishing’: *ik ben wezen vissen* ‘I have been away fishing’. In (26) I present the morphological forms relevant for our discussion of IPP.⁸

(26)	CITATION INFINITIVE	PAST PARTICIPLE	IPP FORM
a.	<i>durven</i> ‘dare’	*(ge-) <i>durf-d</i>	<i>durven</i>
	<i>hoeven</i> ‘need’	*(ge-) <i>hoev-en</i>	<i>hoeven</i>
	<i>kunnen</i> ‘can’	*(ge-) <i>kun-d</i>	<i>kunnen</i>
	<i>moeten</i> ‘must’	*(ge-) <i>moet-en</i>	<i>moeten</i>
	<i>mogen</i> ‘may’	*(ge-) <i>mog-en</i>	<i>mogen</i>
	<i>willen</i> ‘want’	*(ge-) <i>wil-d</i>	<i>willen</i>
	<i>zullen</i> ‘will (future)’	—	<i>zullen</i>
b.	<i>laten</i> ‘let/make’	*(ge-) <i>lat-en</i>	<i>laten</i>
c.	<i>horen</i> ‘hear’	*(ge-) <i>hoor-d</i>	<i>horen</i>
	<i>voelen</i> ‘feel’	*(ge-) <i>voel-d</i>	<i>voelen</i>
	<i>zien</i> ‘see’	*(ge-) <i>zie-n</i>	<i>zien</i>
d.	<i>zijn</i> ‘be’	*(ge-) <i>wees-t</i>	<i>wezen</i> /* <i>zijn</i>

I included a separate column for the IPP form because one of the verbs in the set of IPP undergoers has a form in IPP contexts that is different from its citation infinitive: the auxiliary *zijn* ‘be’ shows up as *wezen* (cf. Old English *wesan* ‘be’) when it is V2 in the schema in (18). As an infinitive, the form *wezen* occurs in present-day Dutch only as a substandard variant of *zijn*, in the informal vernacular (see (27)); *wezen* is obsolete as a normal infinitive of ‘be’ in the standard language.

- (27) dat wil je niet zijn/wezen
 that want you not be
 ‘you don’t want to be like that’

The fact that *wezen* does occur in the standard language as an IPP form thus suggests that the IPP form is not ‘just’ an infinitive. Even though for all other verbs in the set in (26) the IPP form is identical with the citation infinitive, the case of *zijn/wezen* suggests that the term *infinitivus pro participio* is actually a misnomer: the substitute for the participle is not in fact the infinitive but a form based on the participial stem (*wees* in the case of (26d); see also fn. 1, above).

⁸ For the modal *zullen* ‘will (future)’, I did not enter a form for the past participle because to my knowledge there is no context in which *zullen* fails to take a bare-VP complement, and (partial) topicalisation of the bare VP in the complement of *zullen* is also quite impossible in the perfect (see (i)). Hence in the periphrastic perfect *zullen* always occurs in the IPP form. The past participle for *zullen* can readily be formed based on the general morphological rule (*ge-zul-d*; see (i)); but since it does not occur, I have left it out.

- (i) a. hij had het boek **zullen**/**gezuld* lezen
 hij had the book will.IPP/will.PTC read.INF
 b. *het boek lezen had hij **zullen**/*gezuld*
 c. *lezen had hij het boek **zullen**/*gezuld*

Throughout, the IPP form, which like the past participles in the middle column occurs in the complement of an auxiliary that ordinarily selects a participial element, lacks the *ge-* prefix that is obligatory on the past participle. For a subset of the verbs in (36), leaving off *ge-* immediately delivers the IPP form — this is true for the five verbs (*hoeven, moeten, mogen, laten, zien*) whose past participles have the suffix *-en*, identical with the infinitival suffix. For all other verbs, the alveolar suffix (*-d, -t*) of their past participles disappears in the IPP form along with *ge-*, and is replaced with *-en*. It is primarily for this reason that the regular past participial inflection of Dutch is usually characterised as a circumfix, *ge-+d/t*. I will represent the component parts of this circumfix separately in the syntax, by treating the suffixal portion as the exponent of an aspectual head (Asp) outside the projection of the verb, and the prefixal portion (*ge-*) as a particle originating in the complement of the verb. The structure in (28) sums this up:

$$(28) \quad [V1=AUX [_{\text{Asp}} \text{Asp}=PTC.SUFFIX [V2 [_{\text{PrIP}} \text{Prt}=ge-]]]]$$

In the following paragraphs, I will elucidate this approach, and mobilise it to explain the IPP effect.

Inspired by Vanden Wyngaerd (1994), I would like to argue that the key to the IPP effect is the prefix *ge-* — more precisely, the fact that this prefix is systematically omitted on V2 in the schema in (18). This not only helps us understand the fact that IPP occurs only in varieties of Continental West-Germanic that feature *ge-* but also gives us a handle on the IPP form of *zijn* in (26d), whose stem is the same as that of the past participle. IPP syntactically involves the omission of *ge-*. In the PF component (at spell-out), *ge-* takes the alveolar suffix of regular past participles down with it in its fall — more precisely, the exponent of ‘PTC.SUFFIX’ in (28) can only be the alveolar *-d/-t* if the prefixal particle *ge-* is also present (this is part of the suffix’s vocabulary insertion rule); since in IPP contexts, *ge-* cannot appear, this immediately blocks *-d/-t* from occurring as the exponent of Asp. Asp must get expounded, however: a bare stem is unacceptable in the context in which V2 finds itself in (18). With *-d/-t* out of the competition in IPP contexts, Asp will then be spelled out by the other allomorph of the participial suffix, *-en*, whose distribution (probably because of syncretism with the infinitival suffix) is not sensitive to the presence of *ge-*. This is how we get from *ge-wees-t* /xəʋeːst/ to *wez-en* /ʋeːzə/ in (26d).

If the key to the syntax of the IPP effect in Continental West-Germanic is *ge-*, then how does *ge-* work and why is it forced to be absent on V2 in (18)? Here it is important to return for a moment to (25), where we saw that *ge-* is in complementary distribution with unstressed particles and the prefix *her-* ‘re-’. For the latter, Keyser & Roeper (1992) argue that it is a verbal particle that occupies a position in the syntax that is autonomous *vis-à-vis* the verb, with the verb and the prefix coming together as a result of an incorporation process. For unstressed particles like *be-* in (25c) and *over-* in (25d), such a treatment is also plausible (see Hoekstra *et al.* 1987 for *be-*), especially so in light of the fact that *over* doubles as a free-standing particle (see Den Dikken 2003 for discussion). Den Dikken (1995) argues at length that particles of the Germanic type (as in *put the book down, throw the rubbish out, look the number up*) are the syntactic heads of a phrase that finds itself in the immediate complement of the verbs that combine with them. The particle can, in its turn, take a complement as well. This is what happens in sentences of the type in (29a), analysed in Den Dikken (1995) along the lines of (29b), with *the book* (the subject of the small clause whose predicate is *on the shelf*) moving optionally into the specifier position of the particle’s projection.

- (29) a. put <the book> down <the book> on the shelf
 b. $[_{VP} V=put [_{PrtP} <the\ book> Prt=down [_{SC} <the\ book> [_{PP} on\ the\ shelf]]]]]$

The point that is important for our discussion of the IPP effect is that particles (according to Den Dikken 1995) are heads of phrases that serve as the immediate complement of the verbs that select them, and that they can themselves take a complement as well.

When we now return to (25) and recall that *ge-*, the participial prefix, is in complementary distribution with incorporated particles, we are led to the hypothesis that *ge-* occupies the head of a particle phrase in the immediate complement of the verb:

- (30) $[_{VP} V=leven [_{PrtP} Prt=\{ge-, her-, over-\}]]]$

Now, when a verb that combines with *ge-* in turn combines with a projection of a lower verb, this projection needs to be accommodated as the complement of *ge-*, as in (31) (where the numbers match those in the schema in (18)):

- (31) $*[_{VP2} V2_{PTC} [_{PrtP} Prt=ge- [_{VP3} V3]]]$

The problem posed by (31) is that *ge-* interrupts the link between V3 and V2. V3 needs to be incorporated into the verbal cluster.⁹ The presence of the particle frustrates this: the non-verbal Prt in (31) structurally intervenes between V2 and V3, rendering direct incorporation of V3 into V2 impossible on pain of a locality violation (minimality); incorporating V3 into *ge-* on the way up to V2 is also out of the question because Prt is not a legitimate host for verb incorporation (verbs can incorporate only into verbs, not into particles). This failure to include V3 in the verbal cluster rules (31) ungrammatical.

The ungrammaticality of (31) is what is at the heart of the IPP effect in Continental West-Germanic. In the schema in (18), the bare infinitive in the position of V3 must be incorporated into the verbal cluster; inserting the particle *ge-* in between V2 and V3 makes this impossible, and hence any V2 selected by an auxiliary expecting a participial complement must forgo *ge-* whenever it takes a bare infinitive as its complement.

4.2 VP-fronting and IPP in triverbal constructions with a bare-infinitival V3

When the projection of V2 is fronted, as in (10a), nothing changes in the picture sketched in the previous subsection. Once again, if *ge-* is present between V2_{PTC} and V3, this blocks cluster formation. So when VP2 is fronted, IPP continues to be obligatory.

But when what is fronted is VP3 rather than VP2, as in (9a), we do not get IPP. This is now easy to understand as well. When VP3 in (31) is spelt out in the left periphery, the exponent of V3 is not incorporated into the verbal cluster. The downstairs VP3 remains silent, and as a result the presence of *ge-* does not wreak havoc for verb-cluster formation.

- (32) $[_{VP3} V3] \dots [_{VP2} V2_{PTC} [_{PrtP} Prt=ge- [_{VP3} V3]]]$

⁹ In this short paper, I cannot discuss why verb cluster formation happens, nor can I go into detail regarding the syntax of verb cluster formation. This is a complex matter that has given rise to myriad different accounts over the decades. See Zwart (2011) and Broekhuis & Corver (2015) and references cited there.

The syntax of past participles in Continental West-Germanic languages that have *ge-* in their lexica features a PrtP headed by *ge-* in the participle's complement whenever possible. Since nothing obstructs the presence of *ge-* in the complement of participial V2 in (32), the output of (32) will be picked over and above a structure in which V2_{PTC} takes VP3 directly as its complement (i.e., an IPP structure). The result, as desired, is that IPP is illicit in (9a).

4.3 IPP in the passive voice

In passive (12), IPP is just as obligatory as it is in its active counterpart in (11). This is exactly what the analysis of the morphosyntax of the IPP effect presented here predicts.

In the passive, we once again have an auxiliary selecting a participial complement as V1, and V2_{PTC} again has a projection of a bare infinitive in its complement. For exactly the same reason as in the case of active (11), the particle *ge-* must remain absent in the periphrastic passive in (12). With *ge-* and its concomitant PrtP left out from the syntactic structure, the syntax lands on its feet, delivering the IPP version of (12). This now gives us a complete account for the explananda in ①.¹⁰

4.4 A postlude on 'infinitival passives'

At the end of this section, let me highlight an ingredient of examples of the type in (11a) (repeated below as (33a), along with a second instance of the same type) that I have not had occasion to talk about so far. A closer look at the Dutch sentences in (33) reveals that there are in fact *two* unusual infinitives here: not only is *laten* 'let' showing up unexpectedly as an infinitive, the most deeply embedded verb (*lezen* 'read' and *repareren* 'fix') is also an infinitive (sometimes called an 'infinitival passive'), whereas in English it can only be a past participle (see (34)).

- (33) a. ze hebben het boek **laten**/**gelaten lezen* (= (11a))
they have the book let.IPP/let.PTC read.INF
- b. ze hebben de auto **laten**/**gelaten repareren*
they have the car let.IPP/let.PTC fix.INF
- (34) a. they have *had* the car *fixed*
- b. *they have **have** the car *fixed*
- c. *they have *had* the car **fix**
- d. *they have **have** the car **fix**

These facts raise two questions: (i) is the most deeply embedded infinitive in the Dutch examples in (33) a case of IPP, and (ii) why does English resist an infinitive under causative *have* in (34)?

¹⁰ Note that the proposal regarding IPP presented in section 4 is compatible with Baker, Johnson & Roberts' (1989) analysis of the passive, according to which the external θ -role in the passive is assigned to the participial morpheme ('PM'). In my analysis of the morphosyntax of IPP, V2 in (18) is a participle. The composition of participial morphology in Dutch is bipartite, consisting of a prefixal particle syntactically occupying the complement-of-V position (*ge-*) and an inflectional suffix that originates in a functional head above the participial verb (which in (28) I labelled 'Asp'), whose allomorphs are the regular alveolar suffix *-d/-t* and a suffix syncretic with the infinitival suffix, *-en*. In IPP contexts, the particle portion of the participial composite is forced to be absent (*ge-* cannot be included because its presence would preclude verb-cluster formation between V2 and V3); but the suffixal portion is present, and spelt out by the allomorph *-en*. It is this latter portion of the IPP form that could continue to be held responsible for absorbing the external θ -role in the passive.

The answer to the first question is straightforwardly negative. In the analysis of the Continental West-Germanic IPP effect given earlier in this section, the role of verb cluster formation is crucial. The forced absence of *ge-* is a consequence of forced incorporation of V3 into the verbal cluster in the schema in (18): *ge-* blocks incorporation of V3 into V2. But nothing syntactically prevents V3 from taking the particle *ge-* as its complement. So it should be perfectly legitimate in syntax for V3 to be a particle. The fact that V3 in (33) is an infinitive is thus not a case of IPP.

From an Anglocentric perspective it is nonetheless surprising to see an infinitive here — an infinitive with a passive interpretation, or ‘infinitival passive’. English, as we saw in (34), does not allow this at all. It is tempting to attribute this contrast between Dutch and English to the fact that the former has an infinitival suffix (*-en*) whereas the latter conspicuously lacks one. If we follow Baker, Johnson & Roberts (1989) and assume that in the passive the external is being assigned to an inflectional morpheme (see fn. 10 for some elaboration), we could capitalise on the presence of explicit infinitival morphology in Dutch (33) by saying that it is this morpheme that ‘absorbs’ the external θ -role here. And such a treatment of (33) could then shed light on the ungrammaticality of English **they had the car fix* as well, in light of the fact that English lacks an infinitival suffix.

Such an approach would amount to a literal interpretation of the term ‘infinitival passive’. But the idea that the Dutch infinitival suffix *-en* can ‘stand in for’ the participial morpheme as a recipient of the external θ -role in the passive is not tenable. An insuperable problem for such an approach is the grammaticality of (35b), which cannot involve infinitival passivisation because *weten* ‘know’ does not support passivisation or, for that matter, any kind of valency reduction: see (36).¹¹

- (35) a. ik heb ze de uitslag laten weten
I have them the result let.INF know.INF
‘I have let them know the result’
b. ik heb de uitslag laten weten
I have the result let.INF know.INF
‘I made the result known’

11 Arguably, the syntax of the infinitives in (35b) and (33) is active, featuring an implicit subject. The fact that Dutch allows an implicit subject in constructions of the type in (35b) (and, by the same token, in (33)) whereas English does not can plausibly be related to another known difference between Dutch and English in the realm of implicit subjects — the one seen in (i) (where *toestaan* ‘PRT.stand’ is one of the Dutch translation equivalents for English *permit*. Some attested examples of the type in (ib) are given in (ii).

- (i) a. this allows/permits/invites *(us) to conclude that S
b. dit rechtvaardigt (ons) te concluderen dat S
this justifies us to conclude that S
dit staat (ons) toe te concluderen dat S
this stands us PRT to conclude that S
dit nodigt (ons) uit te concluderen dat S
this invites us to conclude that S
- (ii) a. er is geen enkele aanwijzing die het rechtvaardigt te concluderen dat S
there is no single indication that it justifies to conclude that S
b. de grote respons (90%) staat toe te concluderen dat S
the big response 90% stands PRT to conclude that S
c. dit staat toe te ontspannen
this stands PRT to relax
d. het staat toe te communiceren met een bezoeker
it stands PRT to communicate with a visitor
e. het staat toe te controleren voor welke objecten de manager is gecreëerd
it stands PRT to check for which objects the manager is created

- (36) a. *dit wordt (door iedereen/niemand) geweten
 this is by everyone/nobody known
 ‘this is known by everyone/nobody’
- b. *dit weet gemakkelijk
 this knows easily
- c. *dit laat zich weten
 this lets REFL know
- cf. *dit ziet gemakkelijk
 this sees easily
 dit laat zich zien
 this lets REFL see

So the most deeply embedded verb in (33) is neither an IPP form nor an ‘infinitival passive’.¹²

5 The *te*-infinitival cases

What is left to account for is the cluster of explananda in ②, involving *te*-infinitival tokens of V3 in the schema in (19), repeated below.

- (19) [V1=AUX [V2 [*te* V3]]]

In the active, the schema in (19) factors out into three separate syntactic structures, one involving verb clustering, a second featuring extraposition of [*te* V3] (a full CP in this case), and the third, the so-called ‘third construction’ (Den Besten *et al.* 1988), being a combination of extraposition and scrambling of non-verbal material contained in the projection of V3. As (37) shows, only the first of these patterns gives rise to IPP.

- (37) a. ik heb het boek **proberen** te lezen [verb clustering]
 I have the book try.IPP to read.INF
- b. ik heb *geprobeerd* het boek te lezen [CP extraposition]
 I have try.PTC the book to read.INF
- c. ik heb het boek *geprobeerd* te lezen [‘third construction’]
 I have the book try.PTC to read.INF
 all: ‘I have tried to read the book’

Note that (37a) and (37c) have the same word order, differing only with respect to the form of V2. The fact that (37a) (involving verb clustering) and (37b) (the ‘third construction’) co-exist leads to the impression that IPP is optional in (19). But when we tease (37a) and (37c) apart in syntax, the conclusion that emerges is that IPP is in fact categorical, and occurs only in verb clustering contexts.

For the verb clustering case in (37a), nothing needs to be said in addition to what I already said about the schema in (18) in section 4. The IPP form is obligatory here because of the fact that the presence of *ge-* precludes verb clustering. The reason why in the CP extraposition case in (37b) no IPP effect emerges is plain as well: with the constituent [*te* V3] in extraposition, no verb clustering obtains, so *ge-* is legitimate, and we had already seen in section 4 that *ge-* is obligatory whenever it is allowed to occur in the complement of a participial verb. The ‘third construction’ is syntactically very much like (38b), so it, too, features the participial form of V2 rather than the IPP form.

¹² There are other reasons as well that lead me to reject Baker, Johnson & Roberts’ (1989) analysis of the passive in terms of a θ -role absorbing inflectional affix. I refer readers interested in these reasons to Den Dikken (to appear) and Collins (2005).

The fact that in the passive of the schema in (19) *er* takes as its associate the entire infinitival clause, in an impersonal passive, entails that the infinitival clause is necessarily in extraposition in such passives. This in turn means that no verb-cluster formation takes place. And this directly explains the fact that no IPP occurs: IPP is exclusively the province of verb clustering constructions, as explained by the analysis of Continental West-Germanic IPP presented in section 4.

For purposes in this paper, this is sufficient when it comes to accounting for the cluster of explananda in ②. The active/passive dichotomy in the distribution of IPP in constructions of the type in (19) is a reflex of the fact that personal passivisation of such constructions is impossible in Dutch. The question of why personal passivisation of (19) fails is a topic for another paper.

References

- Baker, Mark, Kyle Johnson & Ian Roberts. 1989. Passive arguments raised. *Linguistic Inquiry* 20. 219–51.
- Besten, Hans den, Jean Rutten, Tonjes Veenstra & Joop Veld. 1988. Verb raising, extrapositie en de derde constructie. Ms., University of Amsterdam, Dept. of General Linguistics.
- Breul, Carsten. 2014. The perfect participle paradox: Some implications for the architecture of grammar. *English Language & Linguistics* 18. 449–70.
- Broekhuis, Hans & Norvert Corver. 2015. *Syntax of Dutch: Verbs and verb phrases* (Vol. 2). Amsterdam: Amsterdam University Press.
- Collins, Chris. 2005a. A smuggling approach to the passive in English. *Syntax* 8. 81–120.
- Coopmans, Peter. 1985. Languages types: Continua or parameters? PhD dissertation, Utrecht University.
- Dikken, Marcel den. 1995. *Particles: On the syntax of verb-particle, ditransitive and causative constructions*. Oxford/New York: Oxford University Press.
- Dikken, Marcel den. 2003. When particles won't part. Ms., CUNY Graduate Center.
- Dikken, Marcel den. to appear. Canonical and reverse predication in the syntax of the active/passive diathesis alternation. Ms., RIL/HAS & ELTE/SEAS.
- Emonds, Joseph. 1976. *A transformational approach to English syntax*. New York: Academic Press.
- Hoekstra, Eric & W. Taanman. 1995. Een Westfriesse gradatie van het Infinitivus-pro-Participio effect. Ms., Meertens Instituut, Amsterdam.
- Hoekstra, Teun, Monic Lansu & Marion Westerduin. 1987. Complexe verba. *Glott* 10. 61–77.
- Kayne, Richard. 2005. *Movement and silence*. Oxford/New York: Oxford University Press.
- Keyser, S. Jay & Thomas Roeper. 1992. Re: The abstract clitic hypothesis. *Linguistic Inquiry* 23. 89–125.
- Thoms, Gary & George Walkden 2018. vP-fronting with and without remnant movement. *Journal of Linguistics* (to appear). <http://dx.doi.org/10.1017/S002222671800004X>
- Vanden Wyngaerd, Guido. 1994. IPP and the structure of participles. *Groninger Arbeiten zur germanistischen Linguistik* 37. 265–76.
- Wurmbrand, Susi. 2001. *Infinitives: Restructuring and clause structure*. Berlin: Mouton de Gruyter.
- Zwart, C. Jan-Wouter. 1993. *Dutch syntax: A minimalist approach*. Ph.D. dissertation, University of Groningen.
- Zwart, C. Jan-Wouter. 2011. *The syntax of Dutch*. Cambridge: Cambridge University Press.
- Zwart, C. Jan-Wouter. 2015. Restructuring restructuring: Explaining long passive phenomena in Dutch. Paper presented at the Amsterdam/Leuven verb clusters workshop, Amsterdam, 29 May 2015.