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An experimental-syntactic take on long passive in Dutch: unraveling the patterns underlying its (un)acceptability

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This article provides experimental evidence for the existence of long passive in Dutch and proposes a syntactic analysis of the findings. Long passive, a control-like complementation configuration with matrix passive and promotion of the embedded object to matrix subject, has long been considered ungrammatical in Dutch, but naturally occurring examples call for reconsideration. We report on a judgment experiment, which yielded two main findings: (a) long passive in Dutch is subject to considerable speaker variation and fully acceptable to a number of participants, and (b) its acceptability depends on the class of the matrix verb. We propose that long passive (*qua* implicit control and long object promotion) is in itself unproblematic and that the observed interspeaker variation is due to the incompatibility of passive participles with the so-called *infinitivus pro participio* effect (the occurrence of an infinitive-like form in place of a participle in the perfect) and the (un)availability of a strategy to obviate this clash. This provides a new perspective on the syntax underlying the *infinitivus pro participio* effect. We link the differences between matrix verb classes to structural properties of the infinitival clauses that the verbs belonging to these classes embed, offering novel insights into the syntax of the infinitival dependents of Dutch aspectual verbs, which, we argue, include a (covert) PP layer, similarly to obligatory control adjuncts.

Keywords: acceptability judgment; experimental syntax; individual variation; restructuring; *infinitivus pro participio*; implicit control

1 Introduction

There are various phenomena that can be used to diagnose restructuring configurations, among them clitic climbing, scrambling, NPI licensing, and long passive. Long passive, illustrated in (1) for various languages, is a control-like complementation configuration with matrix passive and promotion of the embedded object to matrix subject.[1] That the embedded (thematic) object acts as the matrix (structural) subject is evident from agreement with a matrix verbal element (1a–c) and/or nominative case (1b–d).

(1) a. ***Las casas*** ***fueron*** *acabadas de pintar ayer.*
the houses AUX.**PL** finished to paint yesterday
Literally: 'The houses were finished to paint yesterday.'
'They finished painting the houses yesterday.'
(Spanish; Aissen & Perlmutter 1983: 391)

b. *dass* [***der Traktor und der Lastwagen***] *zu reparieren versucht wurd-**en***
that [**the tractor and the truck**].**NOM** to repair tried AUX-**PL**
Literally: 'that the tractor and the truck were tried to repair'
'that they tried to repair the tractor and the truck'
(German; Wurmbrand 2001: 19)

c. ***hosa mane(y)u-***∅ *(jaanan-inda) kaTT-al(u) shurumaaD-alpaTT-**itu.***
new house-NOM John-by build-INF start-PASS-**3SG.N**
Literally: 'A new house was started to be built (by John).'
(Kannada; Agbayani & Shekar 2007: 10)

d. *Zyagaimo-no* ***kawa-ga*** *muki-wasure-rare-tei-ta.*
potato-GEN **skin-NOM** peel-forget-PASS-PROG-PST
'They forgot to peel the potatoes.'
(Japanese; Wurmbrand & Shimamura 2017: 184)

This property, also called **long object promotion,** indicates a very tight connection between the matrix and embedded domains, which makes long passive an important phenomenon in theories of restructuring.

[1] The glosses follow the conventions in the Leipzig Glossing Rules, with the addition of PRT for particle and IPP for the *infinitivus pro participio* form.

The aim of this article is to investigate the status of long passive in Dutch—an example of which is given in (2)—and to describe its syntactic underpinnings. While long passive can be found in a range of typologically diverse languages (e.g., Croatian, Czech (Slavic); European Portuguese, Italian (Romance); Japanese (Japonic); Acehnese, Takibakha Bunun (Austronesian); Kannada (Dravidian); see Wurmbrand 2014), the linguistic literature mostly maintains that long passive is absent from Dutch. Previous work discards the configuration as "the result of misinterpretation" (Rutten 1991: 205) or submits that substantial speaker variation prevents one from "draw[ing] any firm conclusions" (Broekhuis 1992: 39). Indeed, not every native speaker rejects the construction, including the native-speaking co-author of this article (Schoenmakers), and instances can be found on the internet.

(2) *De computers werd-**en** geprobeerd te repareren.*
the computers AUX-**PL** tried to repair
Literally: 'The computers were tried to repair.'

We thus conducted an acceptability judgment experiment to examine the current status of long passive in Dutch and to chart the putative variation among speakers. Our results demonstrate that the construction is subject to strong speaker variation (as also indicated in Ter Beek 2005, 2008) but also that the variation in the distribution of acceptability judgments is systematic and follows discernible patterns. In particular, the acceptability of long passive depends on the class of the matrix verb: long passive with aspectual matrix verbs (e.g., *beginnen* 'begin,' *ophouden* 'cease') received the lowest acceptability scores in our experiment, to the extent that such verbs appear to be incompatible with long passive, whereas non-aspectual **Event** verbs (e.g., *proberen* 'try,' *wagen* 'dare') and **Situation** verbs (e.g., *besluiten* 'decide,' *weigeren* 'refuse') yielded much higher acceptability scores. We interpret these patterns as a reflection of specific constraints imposed by the grammatical system, which might vary from one participant to the next. Schütze 1996/2016: chap. 4 stresses that humans exhibit considerable individual variation in all behavioral processes, including linguistic judgment processes. Schütze argues that the study of (in)consistencies in judgment data can be informative about deeper properties of the human mind and in particular about the individual grammars of participants, motivating a search for systematic factors that underlie data patterns.

We propose that the difference in the acceptability of long passive with different matrix verb classes is linked to the syntactic structure of the infinitival clause that the verbs belonging to these classes embed. The observed pattern provides novel insights into the syntactic composition of infinitival dependents of Dutch aspectual verbs: based on the interchangeability of these infinitives with PPs and their opacity for extraction, we argue that these infinitives involve a (covert) PP layer, which blocks long passive. Regarding the individual variation, we argue that, contrary to appearances, long passive (defined as a combination of matrix passive, implicit control, and promotion of the embedded object to matrix subject) is in and of itself unproblematic in Dutch, at least for a subset of the verbs we tested. We link the variation in its acceptability to the so-called ***infinitivus pro participio* (IPP) effect** (the occurrence of an infinitive-like form instead of a past participle in the perfect; found in some West Germanic languages), the incompatibility of this effect with passive participles, and the (un)availability of a strategy to avoid the clash between the two phenomena, offering a new perspective on the syntax underlying the IPP effect.

The article continues as follows. After a more detailed introduction to long passive in section 2, we present the judgment experiment in section 3 and discuss our findings in section 4. Section 5 and section 6 comprise the theoretical component of the article: section 5 provides a syntactic analysis of long passive in general, and section 6 presents a theoretical account of our findings, with section 6.1 dealing with interspeaker variation, section 6.2 discussing some consequences of the proposed analysis, section 6.3 turning to non-aspectual Event and Situation verbs, and section 6.4 discussing Dutch aspectual verbs. Section 7 concludes.

2 Theoretical background

Long passive is a complementation configuration characterized by three core properties: (i) a passive matrix clause, (ii) a control-like relation between the matrix implicit agent and the embedded understood subject, and (iii) promotion of the embedded object to matrix subject, also known as long object promotion (Wurmbrand 2001, 2014). Matrix passive (i) and control (ii) are perhaps best illustrated by an **implicit control** construction such as (3), which does not involve promotion of the embedded object (i.e., no long passive) and is considered grammatical in

Dutch. The matrix verb *proberen* 'try' is passivized, and the embedded understood subject (the resuscitator) is interpreted as corresponding to the matrix implicit agent (the trier).[2]

(3) *Er werd geprobeerd* [*de beide personen die op de scooter zaten te*
there AUX tried the both persons that on the moped sat to
reanimeren].
resuscitate
Literally: 'It was tried to resuscitate both people who were on the moped.'

Taking (3) as a baseline, we need one more step to derive long passive: long object promotion (property (iii)), yielding (4) (taken from a local newspaper; detailed sourcing for this and other naturally occurring examples is given at the end of the article). That we are in fact looking at long passive is visible from plural agreement on the matrix auxiliary, which indicates the subjecthood of the moved constituent. The embedded (thematic) object thus acts as the matrix (structural) subject, showing that there is a tight connection between the matrix and embedded domains.

(4) [*De beide personen die op de scooter zaten*]$_i$ *werd-**en** geprobeerd* [t_i *te*
the both persons that on the moped sat AUX-**PL** tried to
reanimeren].
resuscitate
Literally: 'Both people who were on the moped were tried to resuscitate.'
(*De Gelderlander*, 11 August 2019)

Another diagnostic for the subjecthood of the moved object and consequently for long passive is the presence of nominative case. Since Dutch only has overt case on pronouns, this is not evident from (4), but it is illustrated in (5)—a naturally occurring example reported by Coppen 1994—where the promoted pronominal object surfaces as nominative *hij* 'he' rather than accusative *hem* 'him.'

[2] The infinitival complement is usually assumed to involve PRO in such examples. We confine ourselves for the time being to only indicating the boundaries of the embedded clause; we return to this construction in section 6. Still, it should be noted that Broekhuis & Corver 2015 argues that such examples do not involve obligatory control (see also Koster 1984, Den Besten et al. 1988, Rutten 1991, Broekhuis et al. 1995). However, since the embedded understood subject cannot receive an interpretation that is distinct from the matrix implicit agent, we maintain that such examples are instances of obligatory control (following, e.g., Wurmbrand 2002, Van Urk 2013, Landau 2015).

(5) *En* ***hij*** *werd ook nog gepoogd te vergiftigen.*
and **he.NOM** AUX also still tried to poison
Literally: 'And he was even tried to poison.'
(Coppen 1994; glossing and translation ours)

We have not encountered many such examples, however; this may be due to the **anti-animacy effect** (Bader & Schmid 2009: 1475), that is, the fact that animate objects are less acceptable in long passive than inanimate ones.

Turning to the status of long passive in Dutch, recall from the introduction that its existence has been disputed. Yet instances of long passive are attested, as demonstrated by the examples in (4) and (5). Furthermore, in complementation configurations involving matrix passive, even speakers who reject long passive report the contrast illustrated in (6): whereas long distance scrambling of the embedded object into the matrix clause (diagnosed by lack of agreement) is unacceptable, agreement with the embedded object (i.e., long passive) has an ameliorating effect.

(6) *dat (er) boeken$_i$ geprobeerd* {**werd/?werd-**en***} [t_i *te lezen*]
that there books tried AUX.SG/AUX-**PL** to read
Literally: 'that books were tried to read'
(Broekhuis 1992: 39)

In other words, scrambling an embedded object into a matrix passive clause seems to be ruled out by the grammar, whereas long passive appears to have a different status. (We return to this contrast in section 6.2.)

The presence of such a contrast and the discrepancy between the prevailing view in the literature and the considerable number of naturally occurring examples, combined with claims about speaker variation (e.g., Ter Beek 2005, 2008), suggest that an experimental evaluation of the data would be an important step towards reaching a clearer conclusion about the status of long passive in Dutch. To that end, we conducted an acceptability judgment experiment to further investigate the configuration, having isolated two parameters from the literature that may impact its acceptability, both of which concern the class of the matrix verb.

First, Wurmbrand & Lohninger 2023 investigates complementation configurations in a range of typologically diverse languages. Wurmbrand & Lohninger distinguish

between complements to verbs such as 'try' or 'dare,' which form the Event class, and complements to verbs such as 'decide' or 'promise,' the Situation class. Note that the terms *Event* and *Situation* are used to refer to both the type of complement and the class of matrix verbs embedding this type of complement. These classes are defined semantically: Event complements denote abstract eventualities, whose temporal reference is entirely dependent on the matrix clause, while Situation complements include time and world parameters and are therefore capable of having temporal reference that is different from (but still dependent on) matrix time. This is illustrated in (7): the complement of *besluiten* 'decide' in (7a) refers to a time that is in the future with respect to matrix time (i.e., the attacking happens after the deciding), whereas no such interpretation is possible with *wagen* 'dare' in (7b), which forces a simultaneous interpretation (see also IJbema 2001, Ter Beek 2008).

(7) a. *Suzanne besloot (gisteren) de agent (morgen) aan te vallen.*
Suzanne decided yesterday the officer tomorrow PRT to attack
'Suzanne decided (yesterday) to attack the police officer (tomorrow).'
(Situation)

b. *Patrick waagde (gisteren) de agent (*morgen) aan te vallen.*
Patrick dared yesterday the officer tomorrow PRT to attack
'Patrick dared (yesterday) to attack the police officer (*tomorrow).'
(Event)

Wurmbrand & Lohninger demonstrate that Event complements are cross-linguistically more transparent for restructuring phenomena such as clitic climbing, long distance scrambling, and long passive (see also Wurmbrand 2014). In line with the cross-linguistic empirical landscape, then, we expect configurations with a matrix Event verb to be more amenable to long passive in Dutch than those with a Situation verb.

The second parameter that we investigate is connected to an observation about Dutch specifically. Pitteroff & Schäfer 2019 reports that implicit control with *beginnen* 'begin,' as in (8a), is less acceptable than with *proberen* 'try,' as in (8b) (the numbers below each example represent judgments reported by Pitteroff & Schäfer, on a seven-point scale).

(8) a. *Er werd begonnen de woonkamer op te ruimen.*
there AUX begun the living.room PRT to clean
Literally: 'It was begun to clean the living room.'
3, 4, 3, 4

b. *Er werd geprobeerd de analyse te begrijpen.*
there AUX tried the analysis to understand
Literally: 'It was tried to understand the analysis.'
7, 6, 6, 6
(Pitteroff & Schäfer 2019: 151)

Although both verbs in (8) belong to Wurmbrand & Lohninger's Event class, *beginnen* 'begin' is an aspectual verb and *proberen* 'try' a non-aspectual verb. Pitteroff & Schäfer suggest that the lower acceptability of examples involving aspectual verbs might be due to "their additional use as raising predicates" (151, fn. 8). If this is on the right track and aspectuals are indeed preferably used as raising verbs in Dutch, then the lower acceptability of implicit control configurations with aspectual verbs follows immediately. First, raising verbs cannot passivize (see Perlmutter & Postal 1984), which blocks matrix passive, and second, raising verbs lack a thematic (individual) argument, which makes a control relation impossible. Since both matrix passive and control are defining properties of long passive, aspectual verbs are expected to be less acceptable in this configuration as well. (However, in section 6.4 we show that such an account cannot be applied to all aspectual verbs in Dutch, and we propose an alternative analysis.)

3 An acceptability judgment experiment

This section reports on a judgment experiment investigating the acceptability of long passive in Dutch. The questions we seek to answer are the following.

(i) What is the status of long passive (with respect to implicit control)?

(ii) What is the influence of the matrix verb class on the acceptability of long passive?

(iii) Do aspectual matrix verbs differ from non-aspectual ones with respect to their acceptability in long passive and implicit control configurations—and if so, how?

Based on the existing literature, we expect that (i) items without long passive will be rated higher than items with long passive (Rutten 1991, Broekhuis 1992; cf. Schmid et al. 2005 for German), (ii) items with long passive and an Event matrix verb will be rated higher than items with long passive and a Situation matrix verb (Wurmbrand 2014, Wurmbrand & Lohninger 2023), and (iii) items with a non-aspectual Event matrix verb will be rated higher than items with an aspectual Event matrix verb in implicit control and long passive alike (cf. Pitteroff & Schäfer 2019).

3.1 Participants

Eighty native speakers of Dutch were recruited from Radboud University's participant pool. Data from seven participants were discarded prior to statistical analysis because they gave unexpected answers to at least six filler items (unexpected answers were defined prior to statistical analysis as <40% for grammatical fillers and >60% for ungrammatical fillers). Data from 73 participants (mean age 18.9, SD 1.2, age range 18–23) were entered into statistical analysis.

3.2 Materials

We constructed 24 experimental items in a 2 × 2 × 2 design. The factors were **construction type** (implicit control, long passive), **verb class** (Event, Situation), and **aspect** (aspectual, non-aspectual). Regarding the aspect factor, it is important to note that only the Event verbs had proper aspectual and non-aspectual variants; the sentences with a Situation verb were merely the minimal pair counterparts that served as a control group. We will therefore not interpret the effect of aspect unless it is in interaction with the effect of verb class.

The items were constructed as follows. Each target sentence was preceded by a single context sentence that licensed the use of a passive construction. The target sentence used the passive auxiliary *worden*, which was always in the simple past. Since long passive requires a clear A-dependency and since Dutch does not have case except on pronouns, we could only use agreement to ensure that we were in fact dealing with long passive; therefore, all direct objects were in the plural form. Two sample items can be found in (9) and (10), the former with a non-aspectual Event verb (9a, b) and a Situation verb (9c, d) and the latter with an aspectual Event verb (10a, b) and a Situation verb (10c, d).[3]

[3] 'By' phrases are acceptable both in canonical passives (*De computers werden door het IT-team gerepareerd* 'The computers were repaired by the IT team') and in impersonal passives (*Er werd door de kinderen gedanst*, literally 'It was danced by the

(9) *Vrijwel alle elektronische apparaten op de universiteit zijn gisteren kapot*
almost all electronic devices at the university are yesterday broken
gegaan.
gone
'Almost all electronic devices at the university broke down yesterday.'

a. *De computers werden vandaag door het IT-team geprobeerd te*
the computers were today by the IT.team tried to
repareren.
repair
'The IT team tried/decided to repair the computers today.'

b. *Er werd vandaag door het IT-team geprobeerd de computers te*
there was today by the IT.team tried the computers to
repareren.
repair
'The IT team tried/decided to repair the computers today.'

c. *De computers werden vandaag door het IT-team besloten te repareren.*
the computers were today by the IT.team decided to repair
'The IT team tried/decided to repair the computers today.'

d. *Er werd vandaag door het IT-team besloten de computers te*
there was today by the IT.team decided the computers to
repareren.
repair
'The IT team tried/decided to repair the computers today.'

(10) *Lucas vroeg via een inzamelactie hulp bij het betalen van zijn dure*
Lucas asked via a fundraiser help with the paying of his expensive
ziekenhuisbehandelingen.
hospital.treatments
'Lucas asked for help paying his expensive hospital treatments through a fundraiser.'

children'). We therefore do not expect that including 'by' phrases should have influenced the contrast between long passive and implicit control.

a. *De medische kosten werden daarna gelijk begonnen te*
the medical costs were afterwards immediately started to
vergoeden.
reimburse
'After that, they immediately started/promised to reimburse the medical costs.'

b. *Er werd daarna gelijk begonnen de medische kosten te*
there was afterwards immediately started the medical costs to
vergoeden.
reimburse
'After that, they immediately started/promised to reimburse the medical costs.'

c. *De medische kosten werden daarna gelijk beloofd te*
the medical costs were afterwards immediately promised to
vergoeden.
reimburse
'After that, they immediately started/promised to reimburse the medical costs.'

d. *Er werd daarna gelijk beloofd de medische kosten te*
there was afterwards immediately promised the medical costs to
vergoeden.
reimburse
'After that, they immediately started/promised to reimburse the medical costs.'

The experimental items were distributed over four experimental lists, each of which was presented in one of two distinct orders. Forty-eight unrelated filler items, in part taken and adjusted from Schoenmakers 2023, were added to the experimental lists, intended to distract participants from the constructions under investigation and to stimulate them to make use of the full scale. Of the fillers, 16 were unmarked grammatical sentences; 16 were ungrammatical sentences containing a violation of V2 (e.g., **De schaatser een medaille* ***heeft*** *ontvangen* 'The ice skater received a medal') or of verb-final order in main clauses with periphrastic tense (e.g., **De journalist heeft* ***beledigd*** *de acteur* 'The journalist insulted the actor') or containing an error in gender

agreement (e.g., **het dierenarts* 'the veterinarian'); and 16 were "marked" in that they contained an error that is not generally considered a serious (grammatical) error. This category included anglicisms, violations of the **Animate First** principle, and past participles in clause-initial position. Care was taken to ensure that the filler items did not contain control constructions. The fillers were identical across the experimental lists, each of which contained 72 items in total. The experimental lists were pseudo-randomized so that they did not contain consecutive target items. Each list started with at least three filler items, one from each category.

3.3 Procedure

The experiment was an online questionnaire conducted in Qualtrics. After providing their age, sex, education level, and the provinces in which they grew up and currently lived, participants were presented with the context and target sentences. They were asked how natural the target sentence would sound when produced by a native speaker of Dutch, reporting their judgments using a slider bar on a scale from 0% to 100%. The slider bar was initially set to 50% for each trial and participants were forced to move it to continue to the next trial, which was presented on a new page. The formulation of the question was chosen deliberately to highlight native speaker ability and to take the focus off of such matters as frequency and plausibility (following Schütze & Sprouse 2014). Further, participants were explicitly instructed not to consider the meaning of the sentence, in an attempt to minimize interference from extra-syntactic sources.

3.4 Analysis and results

The results are presented in table 1, with the mean judgment scores and standard deviations for the experimental and filler items (for the purpose of comparison). Here, we have collapsed the two sets of items with a Situation verb (items that were minimal pair counterparts to items with aspectual verbs and items that were minimal pair counterparts to items with non-aspectual Event verbs) into a single "Situation verb" category;[4] note that they were treated as separate item groups in the statistical analysis.

[4] The values in table 1 represent the average values for the two item sets; in implicit control constructions, the mean judgment score and standard deviation for the items that were minimal pair counterparts to the aspectual verb items were 74.16 (24.16), and those for the items that were minimal pair counterparts to the non-aspectual verb items were 68.35 (27.18); in long passive constructions, the figures were 34.49 (26.87) and 36.63 (26.36), respectively.

	Experimental items	
	Implicit control	**Long passive**
Event (aspectual)	43.35 (26.63)	16.91 (14.60)
Event (non-aspectual)	64.67 (26.13)	42.03 (27.53)
Situation	71.39 (25.78)	35.56 (26.61)

	Fillers
Grammatical	81.69 (18.71)
Marked	52.43 (33.15)
Ungrammatical	18.28 (25.03)

Table 1: Mean judgment scores for the experimental items in each condition and for the different categories of filler items (with standard deviations in parentheses).

One item in the implicit control (non-aspectual) Situation verb condition had to be excluded from further analysis because it contained an error.

We transformed the raw judgment scores into *z* scores, that is, standardized units that represent, for a given participant, the number of standard deviations away from that participant's mean rating a judgment score is. In this way, we "capture all of the available information about the relative acceptability of the tested sentence types, while abstracting away from the specifics of the scale used to collect the data" (Cowart 1997: 14). Note, however, that *z* scores by themselves are not indicative of the acceptability of a sentence, since the mean score is based entirely on the data set in question. Figure 1 visually displays the mean judgment scores as well as the mean *z* scores per condition (once again, we have conflated the two aspect categories of the items with a Situation verb).

We then entered the *z* scores into statistical analysis. A linear mixed effects model was performed using the Lme4 package (Bates et al. 2015) in the software environment R (version 4.4.0; R Core Team 2024). The variables construction type (implicit control, long passive), verb class (Event, Situation), and aspect (aspectual, non-aspectual) were entered as fixed effects. All variables were coded using deviation contrasts (contrasts of –.5, .5). We started off with a base model that included the fixed effects and their interactions, as well as by-participant and by-item random intercepts. We included

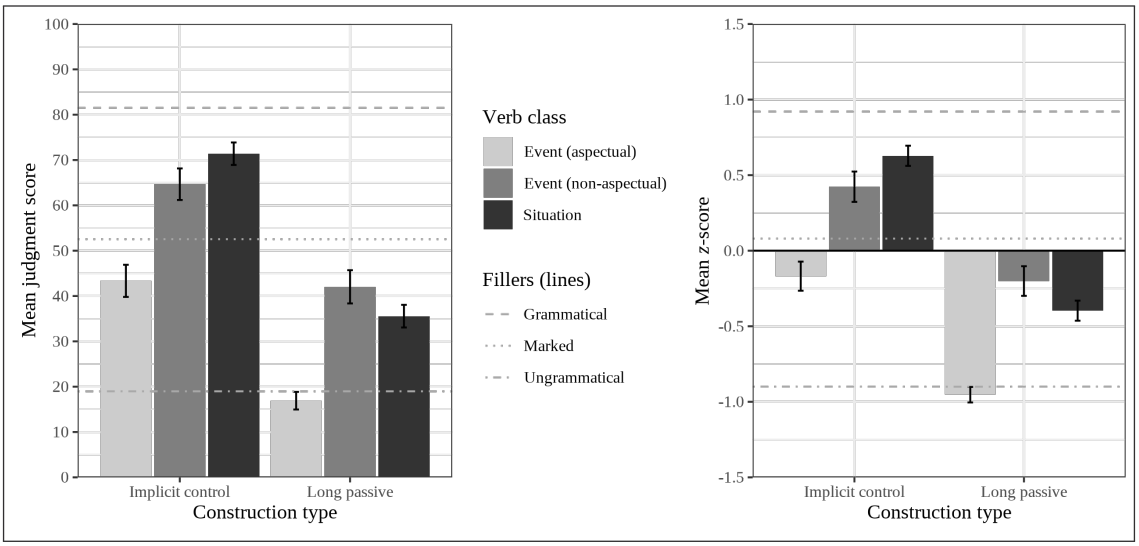


Figure 1: Mean judgment scores (left) and *z* scores (right) per condition (error bars indicate 95% confidence intervals).

random slopes and their interactions in the model only if their inclusion improved the model fit (assessed by likelihood ratio tests). The final model included by-item slopes for construction type and verb class and the interaction between the two. Notice that the random structure of our model is rather complex, which is indicative of high degrees of variation among participants and items. We discuss these variation types in section 4.

We found a significant main effect for construction type and verb class: items with long passive received significantly lower judgment scores than items with implicit control ($\beta = -0.85$, $SE = 0.08$, $t = -10.45$, $p < .001$), and items with a Situation verb received significantly higher judgment scores than items with an Event verb ($\beta = 0.34$, $SE = 0.06$, $t = 5.28$, $p < .001$). Further, we found a significant interaction effect between construction type and verb class ($\beta = -0.31$, $SE = 0.09$, $t = -3.57$, $p = .002$), which indicates that Event and Situation verbs were responded to differently in the two construction types—more specifically, the effect was larger in implicit control constructions. We also found a significant interaction effect between verb class and aspect ($\beta = -0.76$, $SE = 0.13$, $t = -5.93$, $p < .001$): items with an aspectual verb received lower judgment scores than items with a non-aspectual Event verb, and this difference was significantly larger than the difference between the two sets of items with a Situation verb (i.e., the counterparts of items with an aspectual

verb and the counterparts of items with a non-aspectual Event verb; cf. footnote 4). The interaction effect indicates that the observed difference must be due to our experimental manipulation (aspectual vs. non-aspectual) and not to idiosyncratic properties of the stimulus sentences, which is important to emphasize since we are testing two different sets of items. If the difference was due to properties of the experimental items, we would expect to find the same difference in the Situation verb item set. Finally, the three-way interaction was not significant ($\beta = 0.00$, $SE = 0.17$, $t = 0.02$, $p = .986$). This indicates that the aspect penalty was not significantly different between long passive and implicit control constructions.

Since the difference between Event verbs and Situation verbs that we are interested in concerns long passive only, we calculated post-hoc pairwise comparisons (minimal pair item sets only) using the Emmeans package in R (Lenth 2021); p values were adjusted for multiple comparisons with the Bonferroni method. This yielded a significant difference between Event and Situation verbs in long passive constructions only when the Event verb was aspectual ($t = -5.50$, $p < .001$). Although there was a numerical difference between non-aspectual Event verbs and Situation verbs in long passive constructions (mean judgment scores of 42.0 vs. 36.6, respectively), this difference was not statistically significant ($t = 1.89$, $p = 1$).

4 Discussion

Our results show that long passive is considered less acceptable than implicit control, confirming our hypothesis (i). Further, the judgment scores for long passive are distinctly low overall (in line with Rutten 1991, Broekhuis 1992),[5] yet they are considerably higher than the ratings for the ungrammatical fillers—at least when combined with a non-aspectual Event verb or Situation verb. Items with an aspectual verb received the lowest judgment scores across the board, supporting our hypothesis (iii) (in line with Pitteroff & Schäfer 2019). Regarding hypothesis (ii), we found numerical but not statistical evidence that items with (non-aspectual) Event verbs were rated higher than items with Situation verbs in long passive (Wurmbrand 2001, 2014, Wurmbrand & Lohninger 2023).

[5] Notice that implicit control items were also rated considerably lower than the grammatical filler items. One possible reason for this is that the context sentences did not properly license the use of passive in the target sentences, thereby incurring an overall penalty on the judgment scores (which is consistent across conditions). The relatively low ratings may thus be a general artifact of the artificial nature of stimulus creation.

An important question is how we can interpret acceptability judgments between 30% and 70%—the marginal phenomena—in terms of a grammatical system. The judged sentences are not unequivocally "good" or "bad," so it is difficult to map them onto the traditional categorical model of grammar that distinguishes between grammatical and ungrammatical sentences. Sprouse 2020 defines linguistic judgments as automatic responses to error signals that stem from constraints imposed by, for example, the grammar, the parser, real world knowledge, and the experimental task. While syntactic well-formedness is an important contributor to these responses, it is not the only one, which should be kept in mind when interpreting judgment data. That is, it is possible in principle that the sentences in question can be derived in the grammatical system but are, for instance, more costly to process than sentences with a lesser degree of morphosyntactic complexity (cf. Bader & Schmid 2009, which connects the degradedness of long passive in German with matters of processing load).

Furthermore, Schütze 1996/2016 suggests, in discussing judgment of marginal sentences, that "one might first extract the intended meaning, then generate a grammatical sentence that is the expression of that meaning, then compare the two to decide how far off the original sentence was" (174). This procedure entails a comparison between the perceived stimulus and a well-formed representation of it construed by one's personal grammar. Recall, however, that the linguistic literature suggests that long passive in Dutch is subject to speaker variation (e.g., Ter Beek 2005, 2008). The procedure Schütze describes may therefore yield different responses from different participants, warranting an investigation of the individual patterns in our data. The patterns we find corroborate the suggestion regarding speaker variation. Figure 2 displays the participants' mean z score for each verb class in long passive. Recall that z scores cannot be interpreted as an absolute measure of acceptability, as they are calculated on the basis of a participant's average judgment score for all stimulus sentences (and therefore they depend on the quality of the sentences in the input). They can, however, provide insight with regard to patterns in the data (i.e., relative comparisons).

Figure 2 shows that long passive with aspectual Event verbs is invariably rated far below the personal average (left panel). Long passive with Situation verbs (right panel) is rated below zero as well, although to a lesser extent and for some participants

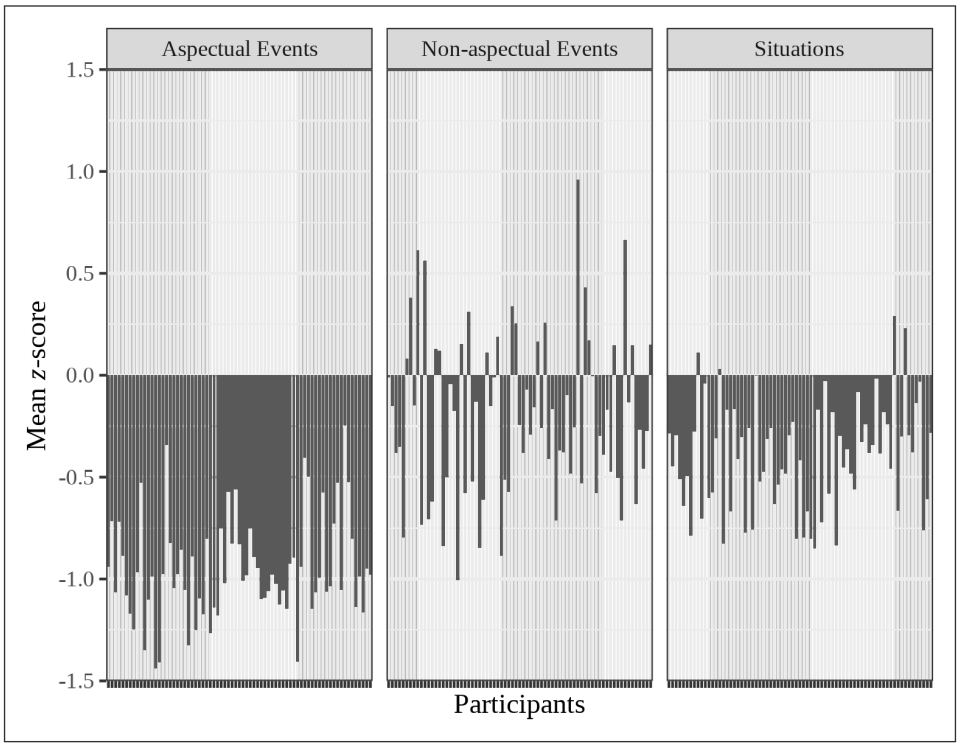


Figure 2: Mean *z* score for three different verb classes in long passive, per participant.

even above average. The mean *z* score for long passive with non-aspectual Event verbs (middle panel) is positive for a considerable number of participants, indicating that this configuration may in fact be available to them. What figure 2 shows particularly clearly is that the acceptability of long passive in Dutch depends on the matrix verb class and that there is variation among native speakers.[6] Both of these findings provide new insight into our main question: the status and syntactic underpinnings of long passive in Dutch.

First, the verb class manipulation may very well be where the grammatical core of the acceptability judgment shines through. Although we did not find statistical evidence for a contrast between Situation and (non-aspectual) Event verbs in long

[6] We leave open to what extent extra-linguistic factors are responsible for this variation, noting that the participants in our experiment were relatively young (23 years old and below, with one exception) and predominantly female (84.4%). Moreover, 61% of the participants grew up in the provinces of Gelderland, Limburg, and Overijssel, which all border Germany, and long passive is generally considered to be possible in German (see Bader & Schmid 2009 for experimental evidence). Note, however, that the number of participants from these provinces is much bigger than the number of participants who seem to accept long passive. The patterns we find in our data thus cannot readily be attributed to such sociolinguistic factors without further investigation.

passive, which we expected to find based on the different behavior of these verb classes from a cross-linguistic perspective (Wurmbrand & Lohninger 2023; see section 2), we did find a strong contrast between aspectual and non-aspectual Event verbs (see Pitteroff & Schäfer 2019 for implicit control). This finding shows that the matrix verb class plays a role with regard to the availability of long passive. Recall that the by-item random structure of our statistical model was rather complex; the model controlled for rather high degrees of variation between individual items. One reason for these high levels of variation in the judgment scores may have been the exact verbs we used in our items. More specifically, we find considerable differences among the average judgment scores for individual verbs within a single class. In long passive, the verb *vermijden* 'avoid' ($M = 33.3$) was rated considerably lower than the other three non-aspectual Event verbs ($M = 45.7$), and similarly for the verb *beginnen* 'begin' ($M = 12.4$) versus the other three aspectual Event verbs ($M = 19.4$) and the Situation verbs *besluiten* 'decide' ($M = 25.8$), *bedenken* 'think of' ($M = 27.4$), and *beloven* 'promise' ($M = 23.8$) versus the other Situation verbs *adviseren* 'advise' ($M = 37.9$), *afraden* 'advise against' ($M = 47.9$), *weigeren* 'refuse' ($M = 40.0$), and *voorstellen* 'propose' ($M = 34.0$). While these differences were controlled for in the random structure of our statistical model, they make it clear that a more detailed investigation of random effects can uncover important details contained in the data that would otherwise have gone unnoticed (see Schoenmakers & Van Hout 2024). In our case, the differences among individual verbs suggest that additional factors may have played a role in the acceptability of long passive structures; we return to this in section 6.

Second, we find substantial variation among individuals, to the extent that a considerable number of participants do not reject long passive constructions, in particular with non-aspectual Event verbs and to a degree also with Situation verbs (see figure 2). Note that marginal phenomena are especially prone to intra- and interspeaker variation. Our results are an example of the latter and imply that our participants have distinct grammars. The status of long passive in Dutch therefore deserves follow-up research, especially in light of recent findings that an investigation of individual grammars might in some cases be required to arrive at generalizations (for some recent examples, see, e.g., Lyskawa & Ranero 2022, Schoenmakers & Van Hout 2024). Schütze 1996/2016 makes the case as follows. "It has come to be generally

acknowledged that not all speakers of 'the same language' might have the same competence, but that does not justify basing the theory only on sentences for which there is universal agreement, and extrapolating by some means to dictate the status of the remainder. In cases where people disagree, that fact cannot be ignored; the theory must be able to describe *every* speaker's competence, and thus must allow for variation wherever it occurs" (37).

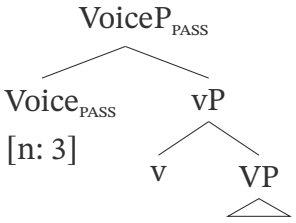
5 The syntax of long passive

In this and the next section, we present the syntactic account of the patterns observed in the experiment. We start, in this section, with the syntax of long passive in general, and we turn to our hypotheses in section 6.

In section 2, we isolated three main properties of long passive: (i) matrix passive, (ii) a control-like relation between the matrix and embedded understood arguments, and (iii) promotion of the embedded object to matrix subject. We address these three properties in this order.

The syntax of passive is illustrated in (11). We assume that the external argument is introduced by a Voice head (Kratzer 1996) and encoded as an individual variable (Embick 2004, Legate 2014, Alexiadou et al. 2015), represented in the syntax as a numerical index feature [n] (Kratzer 2009). A passive Voice head differs from an active one only in that no DP is merged in its specifier; the (implicit) agent is encoded by the variable, which may either be associated with a 'by' phrase or be existentially closed (Bruening 2013).

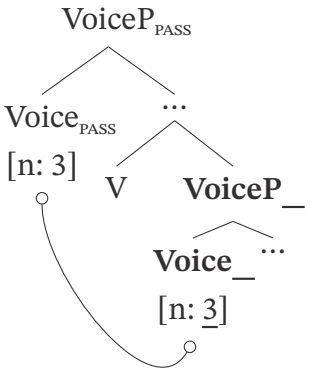
(11)



Turning to long passive, we follow Wurmbrand 2001 and 2014 in analyzing it as involving a restructuring configuration, in which the complement clause does not project the whole array of functional projections up to CP but is reduced in size. In particular, we adopt the analysis of long passive as **Voice restructuring** proposed in Wurmbrand & Shimamura 2017 and Bryant et al. 2023, schematized in (12). The

infinitival complement contains an underspecified Voice head, with an unvalued index feature, which triggers a syntactic feature sharing dependency with the matrix (passive) Voice (since the underspecified Voice head does not project a specifier, it is essentially passive-like; see Bryant et al. 2023). This dependency then serves as the basis for semantic argument sharing, yielding a control-like interpretation (see also Pietraszko 2021).

(12)



A complete derivation of long passive is given in (13); the Voice–Voice dependency is labeled ①. Similarly to simple passive, where T agrees with the clausemate underlying object, the matrix T head probes downwards here as well and targets the embedded object ②. This yields the final property of long passive, long object promotion, and results in agreement with the matrix auxiliary and nominative case.[7]

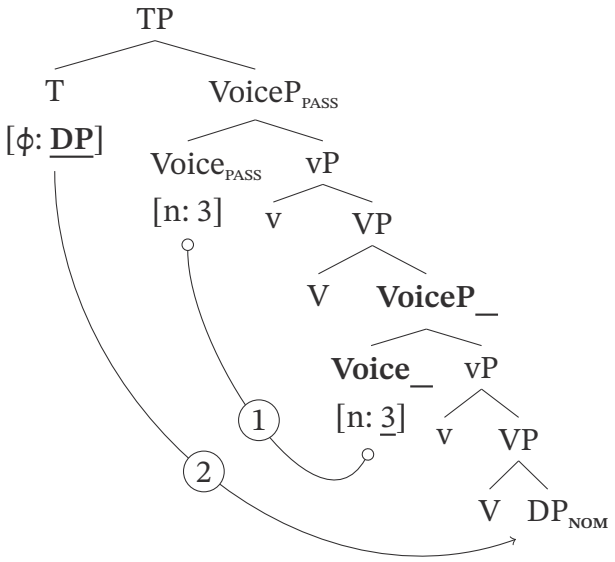
[7] At least in some languages, the dependency between T and the embedded object (②) requires the object to vacate the embedded infinitive (see, e.g., Bobaljik & Wurmbrand 2005 for Japanese and German). As shown in (i) (inspired by a comment from Marcel den Dikken in a personal communication), this is the case in Dutch as well: the embedded object cannot stay within the embedded clause as in (ia) but must move to the matrix domain as in (ib).

(i) a. **dat werden geprobeerd* [***verschillende tractoren*** *te repareren*]
that AUX.PL tried various tractors to repair

b. *%dat* ***verschillende tractoren***$_i$ *werden geprobeerd* [t_i *te repareren*]
that various tractors AUX.PL tried to repair
Literally: 'that various tractors were tried to repair'

This might be a consequence of the Agree relation (e.g., due to an EPP feature on or an equivalent property of T); alternatively, as argued by Bobaljik & Wurmbrand 2005 for Japanese and German, the infinitive may constitute a locality domain for Agree, and the object might need to vacate the infinitive in order to become accessible to matrix T. Since disentangling these two options is not crucial for our purposes and would lead us very much astray and in order to enhance the readability of the tree diagrams, we continue to represent the agreement dependency between matrix T and the embedded object as a direct one, crossing potential locality domains.

(13)



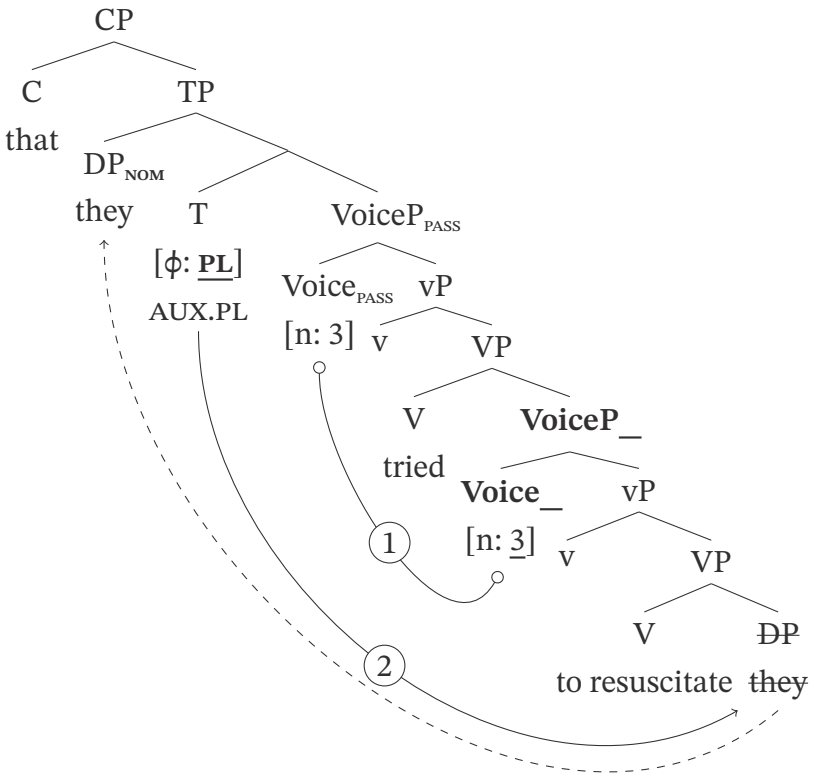
Note that the underspecified Voice head need not be the highest projection in the embedded clause: higher projections such as AspP or TP do not in and of themselves block the Voice–Voice dependency, as long as they do not contain a valued index feature and the first such feature that the embedded Voice head finds is situated on the matrix Voice head (see Bryant et al. 2023 for details). What is crucial is that there is no PRO in the embedded clause, since PRO would block long object promotion, regardless of its (final) position (in the specifier of VoiceP or higher). This would result in an implicit control configuration (see, e.g., (3) in section 2), with matrix passive but no long object promotion (see also Wurmbrand 2002). There are at least two ways in which the blocking effect of PRO on long passive can be captured: either PRO enables embedded Voice to assign accusative to the embedded object (Burzio's Generalization), which prevents the latter from being a suitable target for T, or PRO intervenes by virtue of being closer than the embedded object to the probe on matrix T (along the lines of Relativized Minimality; Rizzi 1990). Note that PRO would also block the Voice–Voice dependency: it would saturate the embedded Voice head and be controlled by the matrix implicit agent directly.

The derivation of a concrete example such as (14) (constructed on the basis of the naturally occurring (4)) is illustrated in (15). The matrix passive is due to the passive Voice head, and the control relation (ensuring that the "trier" corresponds to the "resuscitator") is established as a result of the Voice–Voice dependency ①. Agree

between matrix T and the embedded pronominal object ② leads to nominative case on the latter and plural agreement on the former.[8]

(14) *%dat zij werd-**en** geprobeerd te reanimeren*
that they.**NOM** AUX-**PL** tried to resuscitate
Literally: 'that they were tried to resuscitate'

(15)



6 Deriving the pattern

With the analysis of long passive in place, we now turn to an account of its distribution in Dutch. We address our hypotheses one by one, starting with hypothesis (i) (the degradedness of long passive) and interspeaker variation in section 6.1. Section 6.2 provides support for the proposed analysis and discusses its implications. Section 6.3

[8] The structures for Dutch are given as head-initial for the sake of simplicity. We remain agnostic as to the directionality debate and merely note that the end result is equally attainable with a head-final structure, which, at least in this case, would need to involve additional movements to derive the right word order. Regarding *te* 'to' being in a position lower than T, see, for instance, Wurmbrand 2001: 109–115.

turns to hypothesis (ii) (the behavior of Event and Situation verbs) and section 6.4 addresses hypothesis (iii) (the aspectual versus non-aspectual verb contrast).

6.1 Long passive and implicit control: hypothesis (i)

Our findings that long passive is on average less acceptable than implicit control in Dutch and that its acceptability is subject to substantial speaker variation are in line with the controversial status of the configuration in the language. The central question we seek to answer in this section is what the difference is in the grammars of the Dutch speakers who accept long passive and those who do not.

In a nutshell, we propose that the unacceptability of long passive is, in a sense, an illusion: long passive itself (as a combination of matrix passive, implicit control, and long object promotion) is unproblematic in Dutch, at least for a subset of the verbs that we tested. The unacceptability arises from two conflicting requirements. On the one hand, (i) the underlying configuration obligatorily triggers the IPP effect, but on the other hand, (ii) passive is incompatible with the IPP. We suggest that speakers who accept long passive are able to obviate this conflict by means of extraposition and that this strategy is unavailable to speakers who reject the configuration.

6.1.1 Verb raising as the active counterpart of long passive

In order to see why the three core components of long passive (matrix passive, implicit control, and long object promotion) should in principle be possible in Dutch, we first need to inspect two active control(-like) configurations: the so-called **third construction,** illustrated in (16a), and **verb raising,** illustrated in (16b). Superficially, the two constructions differ only in the form of the matrix verb: a participle in (16a) versus what appears to be an infinitive (but see, e.g., Zwart 2007, Den Dikken 2018) in (16b). This latter phenomenon is the hallmark of the verb raising construction and is called the IPP effect: the verb selected by the perfect auxiliary surfaces as an infinitive(-like form) and not, as the selectional relations would lead us to expect, a participle.

(16) a. *dat Angela koekjes$_i$ heeft **gewaagd** [t_i te eten]*
that Angela cookies has dared to eat
b. *dat Angela koekjes heeft [**wagen** te eten]*
that Angela cookies has dare.IPP to eat
'that Angela dared to eat cookies'

Recall from section 4 that we found variation in the acceptability of long passive not only among speakers but also among individual verbs. Conspicuously, the set of verbs that received higher ratings in long passive overlaps with the set of verbs that allow the IPP effect (and thus appear in the verb raising construction). In the non-aspectual Event class, the verb with the lowest rating in long passive is *vermijden* 'avoid,' the one verb in this class that clearly does not allow the IPP effect. The other three verbs, *proberen* 'try,' *wagen* 'dare,' and *vergeten* 'forget,' are all compatible with the IPP effect (although the participle and the infinitive of *vergeten* are homophonous, which obscures the difference between the third construction and verb raising). In the Situation class, one of the verbs that received higher ratings in long passive is *weigeren*, the only verb among the Situation verbs we tested that is compatible with the IPP effect (though this is subject to speaker variation; see Broekhuis & Corver 2015: 868).[9]

In line with this observation, we propose that long passive is the passive version of the verb raising construction (16b): the two involve the same underlying structure and differ only in the voice properties of the matrix clause, passive and active, respectively. However, long passive has traditionally been discussed in the context of the third construction ((16a); see, e.g., Rutten 1991, Broekhuis 1992), and, as we will show in the next subsection, our account of interspeaker variation involves aspects of the third construction as well. We thus devote the remainder of this subsection to (the active cases of) verb raising and the third construction, motivating our analytical choice and situating it within the broader theoretical context.

That verb raising and the third construction are two separate configurations was first noted in Den Besten et al. 1988 and Den Besten & Rutten 1989; the distinction is not immediately evident because the IPP effect obtains only in the perfect, so the two constructions cannot be distinguished on the surface if the matrix verb is in the present (e.g., *waagt* 'dares') or past tense (*waagde* 'dared'). Assuming a verb-final base for Dutch, Den Besten et al. and Den Besten & Rutten (see also, e.g., Rutten 1991, Broekhuis et al. 1995) analyzed the third construction as long distance scrambling of the embedded object and (remnant) extraposition of the infinitive (as indicated by the bracketing in (16a)).[10] Following Evers 1975, the verb raising construction

[9] There are three other Situation verbs that received higher ratings but do not allow the IPP effect; we return to them in section 6.3 and show that their behavior falls out from the analysis we develop in this section.

[10] The term *third construction* was coined to indicate that, next to verb raising (16b) and a construction in which the entire embedded clause surfaces to the right of the matrix verb, shown in (i), there is a third option, (16a), which, despite sharing properties with both (16b) and (i), should be distinguished from them.

(16b) was derived by head movement of the embedded verb to the matrix verb and formation of a verb cluster/complex head, followed by pruning of the embedded clause. A commonality of these constructions is that the infinitive obligatorily follows the matrix verb, though this is achieved by means of different mechanisms: (remnant) extraposition in (16a) and head movement in (16b). Under a head-initial approach (e.g., Zwart 1993), the infinitive may stay in situ (but the object surfaces in the matrix clause).

These two constructions have hitherto received a variety of analyses, under both a verb-initial and a verb-final base. Nevertheless, much of the literature seems to be guided by the intuition that the embedded infinitive and the embedding verb form a closer bond in verb raising than in the third construction.[11] For instance, Broekhuis & Corver 2015 calls the third construction infinitives **semi-transparent** and the verb raising infinitives **transparent** and considers only the latter to involve a genuine verb cluster; Salzmann 2019 (focusing on Swiss German) uses the metaphor of tightness. A number of approaches implement this insight in terms of some notion of **containment:** Salzmann 2019 argues that the infinitive is obligatorily contained within the projection of the embedding verb in verb raising but may vacate it in the third construction; similarly, Zwart 2007: 84 proposes that "the IPP-effect occurs whenever a participle takes an infinitive in its complement domain" and distinguishes

(i) *dat Angela heeft gewaagd* [*koekjes te eten*]
that Angela has dared cookies to eat

The construction in (i) was analyzed by the aforementioned researchers as extraposition of the (entire) infinitive.

[11] By way of empirical evidence, the matrix verb and auxiliary may occur in either order in the third construction (thus in (16a), both *heeft gewaagd* and *gewaagd heeft* are fine; the same holds for the example in footnote 10) but not in verb raising (in (16b), only *heeft wagen* is possible). In other words, the perfect auxiliary may separate the matrix verb and the infinitive in the third construction but not in verb raising. This is also true of DP objects: an object may occur between the two verbs in the third construction, as in (ia), but not in verb raising, as (ib) illustrates; both constructions allow the object to surface to the left of the verb sequence, as (ic) shows.

(i) a. *dat ze hem*$_i$ *heeft geprobeerd* [t_i ***'n nieuwe taak*** *te geven*]
that she him has tried a new task to give

b. **dat ze hem heeft proberen **'n nieuwe taak** te geven*
that she him has try.IPP a new task to give

c. *dat ze hem **'n nieuwe taak** heeft* {*geprobeerd/proberen*} *te geven*
that she him a new task has tried/try.IPP to give
'that she tried to give him a new task'

(After Den Besten & Rutten 1989: 53–54)

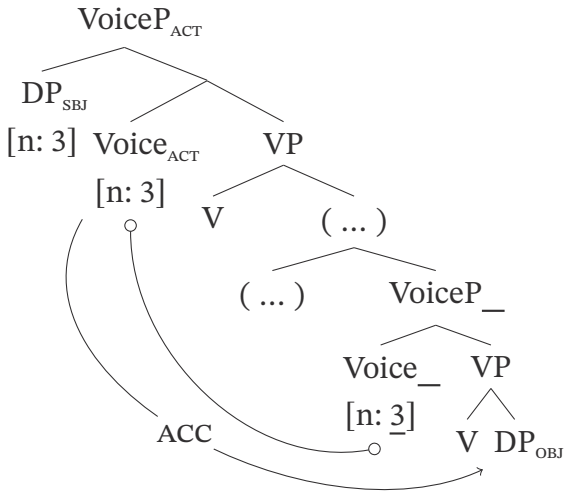
A number of other diagnostics, some contested, have been proposed to distinguish between the two constructions (see among many others Den Besten et al. 1988, Rutten 1991, Broekhuis et al. 1995, Ter Beek 2008; as well as Salzmann 2019, which provides a critical overview and proposes novel tests, though focusing on Swiss German).

between subordination and coordination. In fact, the traditional analysis outlined above (e.g., in Den Besten et al. 1988) can be seen from this perspective as well: in verb raising, the infinitive forms a complex head with the matrix verb and thus remains within the matrix VP, whereas in the third construction, extraposition places the infinitive outside of the matrix VP.

We adopt the distinction between verb raising and the third construction in terms of obligatory containment. More generally, we take this distinction to reflect different degrees of independence of the embedded infinitive (cf. Broekhuis & Corver's "transparency" and Salzmann's "tightness") and link it to the presence or absence of PRO (on which see Ter Beek 2008), echoing the long-standing intuition that subjects are instrumental in delimiting domains (e.g., the Specified Subject Condition of Chomsky 1973 or subsequent work on binding). An infinitive containing a PRO subject is then more independent and may undergo extraposition (as in the third construction), whereas an infinitive without PRO, being less independent, is forced to remain contained within the matrix VP (as in the verb raising construction), which (in Dutch) goes hand in hand with the IPP effect.

The core components of our analysis of verb raising are illustrated in (17). Like in long passive, there is no PRO; argument sharing is due to the Voice–Voice dependency, and the case of the embedded object depends on the matrix domain. (Note that, at least under a head-initial approach, the object has to vacate the infinitive to yield the correct word order.)

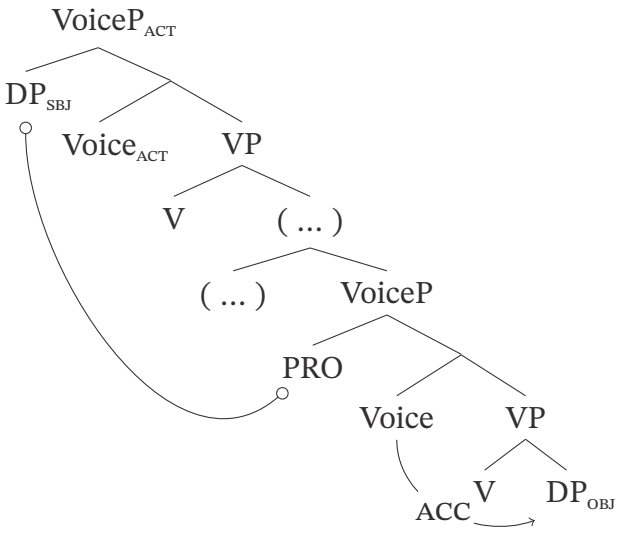
(17)



We further propose that the Voice–Voice dependency, in addition to its role in argument sharing, is instrumental—alongside the requirement that the infinitive remain in the complement domain of the matrix verb (see Zwart 2007)—in triggering the IPP effect.[12] We leave the exact mechanism open: this dependency could be followed by head movement (in line with the original analysis of Evers 1975), which would then result in dropping participial morphology (see, e.g., Den Dikken 2018), but other implementations are possible as well (e.g., in terms of post-syntactic cluster formation).

The syntax of the third construction is outlined in (18). As discussed above, the (remnant) infinitive may be extraposed, which we link to a higher degree of independence and the presence of PRO (in line with the traditional analysis; see Ter Beek 2008 for slightly newer work). Crucially, even if the infinitive remains in situ (which is a theoretical option under a head-initial approach), PRO precludes the formation of the Voice–Voice dependency (see section 5), and the IPP effect does not arise. Thus, under our analysis, the IPP effect (just like long passive; see section 5) is incompatible with PRO.

(18)



At the beginning of this section, we noted that the average ratings of individual verbs in long passive track their compatibility with the IPP effect, and we interpreted

[12] The IPP effect is also found (and is, in fact, obligatory) with functional/raising verbs in Dutch, most of which take bare infinitives. Since (at least some of) these verbs form part of monoclausal structures, the Voice–Voice dependency cannot be a necessary condition for the IPP effect in general but rather only with control verbs.

this observation as an initial indicator of long passive and verb raising having the same underlying structure (modulo matrix voice properties). Apart from this correlation, there are other reasons to connect long passive with verb raising and the IPP. Both configurations are subject to speaker variation (see, e.g., Rutten 1991: 161 for the IPP), and both are lexically idiosyncratic (in that their availability depends on the individual matrix verb; see, e.g., Rutten 1991 for the IPP and Wurmbrand 2014 for long passive). Connecting these idiosyncrasies may lead to a more explanatory account of both constructions. Further, both constructions involve a tight relation between the matrix and embedded domains. The matrix verb and the infinitive cannot be separated by the embedded object in either construction (see footnote 7 for long passive and footnote 11 for verb raising), and one of the core properties of long passive is that the case of the embedded object depends on the matrix domain, which has also been proposed for verb raising (e.g., Zwart 1993, Ter Beek 2008).[13]

To summarize, we treat the infinitive in the third construction as more independent than the one in verb raising, in line with the aforementioned insight underlying much of the literature that the infinitive and the embedding verb form a closer bond in verb raising than in the third construction. The crucial ingredient in our implementation is the presence versus absence of PRO (see also Ter Beek 2008), which we take to have repercussions for the difference in terms of containment (building on Zwart 2007, Salzmann 2019): the infinitive in verb raising is more integrated into the matrix clause and remains in situ, whereas the infinitive in the third construction is free (and, under a head-final approach to Dutch, forced) to undergo extraposition. These differences manifest themselves in the IPP effect, which, we proposed, arises if two prerequisites are met: containment (in accord with Zwart 2007) and the Voice–Voice dependency. In verb raising, both conditions are met, and the IPP effect is obligatory, but in the third construction, PRO blocks the Voice–Voice dependency, and the matrix verb surfaces as a participle.

A crucial novelty of our proposal is the role of the Voice–Voice dependency in the IPP effect, which enables us to connect the lexical idiosyncrasies of the IPP with those of long passive—a connection pointed towards by the behavior of individual verbs in

[13] Zwart 1993 and Ter Beek 2008 propose that the same is true for the third construction. However, this leaves unexplained why the embedded direct object may in principle remain in the embedded clause if a dative object has been moved to the matrix domain (see the examples in footnote 11 as well as Rutten 1991: 43). At least for Ter Beek, it also leads to a theoretical conundrum involving PRO, which she takes to be present in the third construction.

our experiment. Wurmbrand & Shimamura 2017 suggests that the availability of long passive is linked to selectional properties of matrix verbs: only verbs that allow an underspecified Voice head in their complement are compatible with long passive. By tying the IPP effect to the very same underspecified Voice head, we are able to reduce two idiosyncrasies to one, at least in Dutch.

6.1.2 Individual variation in long passive

We are now ready to return to the central question of section 6.1, namely the individual variation in the acceptability of long passive. As proposed in the previous subsection, we take long passive to be the passive version of verb raising. Indeed, Zwart 1993 and Ter Beek 2008 propose that the embedded object receives accusative from a matrix element in verb raising. In the context of matrix passive, then, we expect the embedded object to receive *nominative* case, yielding long passive. In other words, if the embedded object is case-dependent on matrix elements in verb raising, then promotion of the embedded object to matrix subject in the context of matrix passive should not pose any problems; on the contrary, it is predicted to happen.

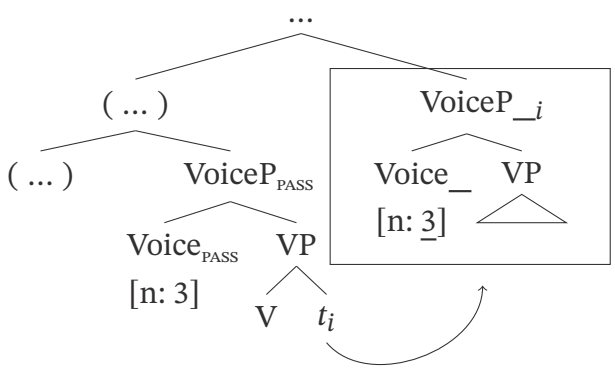
What, then, makes long passive problematic? Recall that we identified three components of long passive: matrix passive, control, and long object promotion. As far as the latter two properties are concerned, nothing stands in the way of long passive. We thus propose that the problem has to do with matrix passive and that the difference between the grammars of Dutch speakers who allow long passive and those who do not is linked to the IPP effect. We proposed in the previous subsection that a Voice–Voice dependency (alongside containment) obligatorily triggers the IPP effect in Dutch. However, the IPP is incompatible with passive: in passive participles, unlike in active ones, participial morphology cannot be dropped (see Den Besten et al. 1988: 10, Rutten 1991: 114, Haider 2003: 104, Den Dikken 2018). As a consequence, passivizing a verb raising configuration results in a clash between two requirements: the IPP effect is obligatory, but the matrix passive participle is incompatible with the IPP. IPP thus simultaneously has to and must not occur, which leads to a degraded outcome. While speakers who reject long passive have no means of salvaging the result, we propose that speakers who accept long passive may eschew the IPP effect, and we suggest that they do so by means of extraposition.

In this regard, note that long passive in Dutch, in addition to the three core properties (matrix passive, implicit control, long object promotion), requires the embedded verb to surface to the right of the matrix verb–auxiliary complex:

(19) *dat de computers {*te repareren} geprobeerd werden {%te repareren}*
that the computers to repair tried AUX.PL to repair
Literally: 'that the computers were tried to repair'

Given that infinitives obligatorily surface to the right of the matrix verb in Dutch in general (recall the discussion in section 6.1.1 of the verb raising and third construction examples in (16)), this is not surprising, but it is instructive to consider how the permitted order can come about. Under a head-final approach to Dutch, it can be achieved by (remnant) extraposition in the third construction and by cluster formation (via head movement or post-syntactically) in verb raising; a head-initial approach requires no special operation, but it is at least in principle compatible with both, extraposition and cluster formation. Returning to long passive, in order to eschew the IPP effect, the configuration that triggers it needs to be disrupted. We identified two prerequisites for the IPP effect: the Voice–Voice dependency and, building on Zwart 2007 and Salzmann 2019, containment. In other words, the Voice–Voice dependency triggers the IPP effect only if the embedded verb remains contained within the matrix VP. This means that moving the embedded verb outside of this domain would bleed the IPP effect. We suggest that this is the strategy used by speakers who allow long passive: after the Voice–Voice dependency has been established, they move the infinitive outside of the matrix VP, as sketched in (20). This enables them to avoid the IPP effect and thereby obviate the clash with the passive participle, which results in acceptability of long passive.

(20)



In essence, this proposal is similar to the intuition expressed in Rutten 1991 that long passive is a result of "a contamination of remnant extraposition and [verb

raising]" (205), though unlike Rutten we do not think that the construction should therefore be discarded. On the contrary, we see this "contamination" (i.e., applying extraposition—an operation that occurs in the third construction—to the structure underlying verb raising) as a strategy to make long passive acceptable. As pointed out by an anonymous reviewer, treating long passive as a combination of verb raising and extraposition leads us to expect that long passive will show properties of both. This is indeed the case. As noted in section 6.1.1, the embedded object cannot separate the matrix verb and the infinitive in either long passive (see footnote 7) or verb raising (see footnote 11), in contrast to configurations that involve extraposition. Conversely, long passive patterns with the third construction when it comes to the relative order of the matrix verb and auxiliary. In verb raising, as shown in (21a), the (perfect) auxiliary cannot separate the matrix verb and the infinitive and must precede the matrix verb, but in the third construction, as shown in (21b), it may either follow or precede the matrix verb (see also footnote 11). In long passive, too, the (passive) auxiliary may either precede or follow the matrix verb and thus occur between the matrix verb and the infinitive, as shown in (21c).[14]

(21) a. *dat Angela de computers* {*heeft*} *proberen* {**heeft*} *te repareren*
that Angela the computers has try.IPP has to repair
'that Angela tried to repair the computers'

b. *dat Angela de computers* {*heeft*} *geprobeerd* {*heeft*} *te repareren*
that Angela the computers has tried has to repair
'that Angela tried to repair the computers'

c. *%dat de computers* {*werden*} *geprobeerd* {*werden*} *te repareren*
that the computers AUX.PL tried AUX.PL to repair
Literally: 'that the computers were tried to repair'

As for speakers who do not accept long passive, we suggest that they are only able to extrapose complements that have a PRO subject (and are thus more independent). Indeed, extraposition of a complement that includes PRO (without long distance scrambling of the object; see section 6.2) in the context of matrix passive yields the implicit control configuration (e.g., (3) in the introduction), whose acceptability

[14] This implies that the order of the matrix verb and the (perfect or passive) auxiliary has to be determined after extraposition, since otherwise the order in long passive would be fixed, just like in verb raising.

is uncontested in the literature and which also received higher ratings in our experiment. This raises the question whether there are other contexts in which the grammars of the two groups of speakers differ due to the (in)ability to extrapose PRO-less complements. On a speculative note, we might expect speakers who allow long passive to be less prone to the IPP effect with control verbs and, in a way, blur the distinction between verb raising and the third construction: if the IPP effect depends both on the Voice–Voice dependency and on containment and if these speakers may extrapose the infinitive after the Voice–Voice dependency has been established, thus disrupting containment, they will have the option of using the participle in the third construction and verb raising alike, and they may more frequently make use of this option. We leave the investigation of this as well as other potential differences for future research.

6.2 An interlude: implications and further evidence

One benefit of our account is that it provides a window onto the difference between Dutch and German, a related language where long passive is more readily acceptable (see (1b) for an example). To that end, note that the IPP effect in German does not obtain with lexical verbs (nor with the counterpart to *te* infinitives), only with functional verbs (and bare infinitives). Further, long passive does not require extraposition in German (the starred word order in (19) is acceptable in German; see, e.g., the examples in Wurmbrand 2001). Cast in more theoretical terms, PRO-less complements in German may remain contained within the matrix VP without triggering the IPP effect, and hence the clash between the IPP and the passive participle simply does not arise. The fact that long passive is more common in German than in Dutch may then be explained by the fact that nothing special needs to be done in German, whereas Dutch speakers need to have the "special" ability to extrapose PRO-less complement clauses.

Within Dutch, the proposed account receives support from the behavior of causative configurations and the third construction in the context of matrix passive. Starting with the former, an active example with the causative verb *laten* 'let' is given in (22a). Importantly for our purposes, long passive–like configurations with *laten*, as in (22b), seem to be acceptable to a broader audience than long passive with control verbs is, even though they, too, are susceptible to speaker variation (Coopmans 1985).

(22) a. *Ze hebben de ramen* ***laten*** *schoonmaken.*
they have the windows **let.IPP** clean.INF
'They had the windows cleaned.'
b. *%De ramen zijn* ***laten*** *schoonmaken.*
the windows be.PL **let.IPP** clean.INF
Literally: 'The windows were had cleaned.'
(Adapted from Coopmans 1985: 68)

The wider acceptability of examples such as (22b) reinforces the conclusion that long object promotion is not the reason for the variation in the acceptability of long passive with control verbs. Moreover, a closer look into this configuration provides support for treating the incompatibility between passive participles and the IPP effect as a crucial factor for the (un)acceptability of long passive. To see why, notice that substituting the passive auxiliary *worden* for the auxiliary *zijn* 'be' in (22b) results in an unacceptable example—regardless of whether *laten* 'let' surfaces as a participle or the IPP form:

(23) **De ramen werden {laten/gelaten} schoonmaken.*
the windows AUX.PL let.IPP/let.PTCP clean.INF
Intended: 'The windows were had cleaned.'

This indicates that *laten* 'let' may not be able to passivize and, consequently, that sentences such as (22b) do not in fact involve passive.[15] If this is correct, then the clash between a passive participle and the IPP effect does not arise in the first place, and both the IPP effect and long object promotion can proceed freely. More generally, if there is no clash between the IPP effect and a passive participle—either because no passive participle is involved (as with *laten*) or because it can be avoided by eschewing the IPP by means of extraposition (a strategy only available to a subset of speakers for long passive with control verbs)—the result is an acceptable configuration.

Turning now to the third construction, a number of studies (e.g., Rutten 1991, Broekhuis 1992, Broekhuis et al. 1995) report a contrast between long passive and

[15] We do not attempt to provide an account for this contrast but use it primarily as an empirical tool. However, the contrast might be tied to the functional status of the causative *laten* 'let' and theoretically linked to the lack of a Voice projection above it (cf. Coopmans 1985, which argues that *laten* forms part of truly monoclausal configurations). A possibility that suggests itself is that examples like (22b) might involve an alternation at the vP level rather than the VoiceP level (cf. the causative–anti-causative alternation as analyzed in, e.g., Alexiadou et al. 2015).

the third construction in the context of matrix passive. The third construction is illustrated in (24a) (see also (16a)). While this active example is grammatical, the minimal pair counterpart with a passive matrix verb in (24b) is generally considered ungrammatical (Koster 1984, Rutten 1991, Broekhuis 1992, Broekhuis et al. 1995). Example (24c), an instance of implicit control, shows that if the embedded object remains within the infinitive, matrix passive is possible, which confirms that it is not matrix passive itself that is problematic in (24b), only its combination with long distance scrambling.

(24) a. *dat ze* [*boeken*]$_i$ *geprobeerd hebben* [t_i *te lezen*]
that they books tried have to read
'that they tried to read books'

b. **dat (er)* *boeken*$_i$ *geprobeerd werd* [t_i *te lezen*]
that there books tried AUX to read
Literally: 'that books were tried to read'
(Broekhuis 1992: 39)

c. *dat (er)* *geprobeerd werd* [*boeken te lezen*]
that there tried AUX books to read
Literally: 'that it was tried to read books'

What is interesting for our purposes is that, as noted in section 2 and illustrated in (25), agreement with the embedded object is reported to ameliorate the outcome of examples such as (24b) even for speakers who do not accept long passive (e.g., Rutten 1991, Broekhuis 1992).

(25) *dat (er)* *boeken*$_i$ *geprobeerd* {**werd*/?*werd-**en***} [t_i *te lezen*]
that there books tried AUX.SG/AUX-**PL** to read
Literally: 'that books were tried to read'
(Broekhuis 1992: 39)
= (6)

We suggest that the unacceptability of (24b) (i.e., the non-agreeing variant in (25)) is due to a failed control relation. Following Van Urk 2013 (see also Kovač 2024), passive implicit arguments are able to control PRO only if they agree with T (the so-called **Revised Visser's Generalization**). Crucially, this dependency is blocked, Van Urk

argues, if T agrees with a(nother) DP. While this is not the case in (24b), where the embedded object receives accusative in the embedded clause (and not nominative from matrix T), we suggest that the moved object nevertheless acts as an intervener for agreement between T and the implicit agent, only a defective one. In other words, even though T does not in the end agree with the DP object, it attempts to do so, and it is therefore unable to agree with the implicit agent. This leads to a failed control relation and an ungrammatical outcome.[16]

The ameliorating effect of agreement (i.e., long passive) is due, we propose, to a different underlying structure involving a Voice–Voice dependency, whose active counterpart is the verb raising construction (as argued in section 6.1). The contrast in (25) then indicates that the clash between the IPP and the passive participle (in long passive) induces a violation that is less severe than a failed control relation (in the third construction), suggesting that these two violations have a different status and are possibly operative in different components of grammar.

6.3 Event and Situation verbs: hypothesis (ii)

Based on the cross-linguistic distribution of long passive and other restructuring phenomena (Wurmbrand 2014, Wurmbrand & Lohninger 2023), we hypothesized that long passive would be more acceptable with Event verbs than with Situation verbs in Dutch. The contrast is indeed present between Situation verbs (*besluiten* 'decide,' *weigeren* 'refuse') and aspectual Event verbs (*beginnen* 'begin,' *ophouden* 'cease'), but we do not find statistical evidence for a difference between non-aspectual Event verbs (*proberen* 'try,' *wagen* 'dare') and Situation verbs—although we do observe a numerical difference in the expected direction (non-aspectual Events > Situations). We concentrate on Situation and non-aspectual Event verbs in this section and address the aspectual Event class in section 6.4, together with hypothesis (iii).

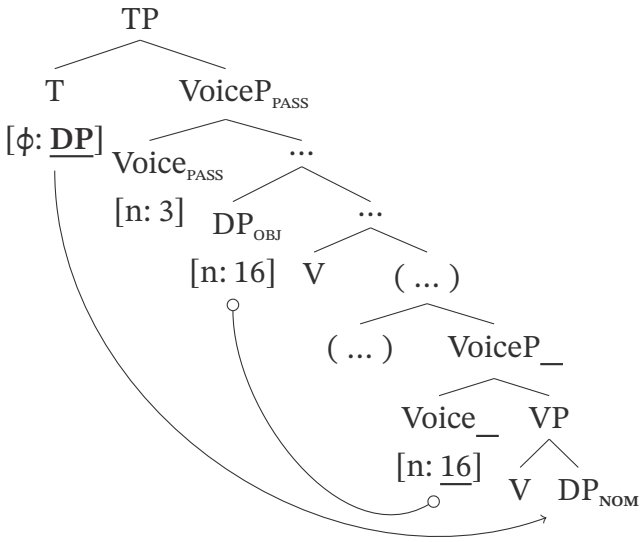
[16] In a sense, linking the incompatibility of the third construction with matrix passive to a failed control relation is similar to the account proposed by, for example, Koster 1984, Rutten 1991, and Broekhuis 1992. There is one crucial difference, however: these works assume that passive implicit agents cannot control PRO under any circumstances (an assumption that has been shown to be too strong on empirical grounds; see, e.g., Landau 2015, Pitteroff & Schäfer 2019), whereas we follow Van Urk 2013, which proposes that a passive implicit agent may in principle act as a controller but only if it agrees with T. Moreover, the traditional account captures the contrast between (24b) and (24c) by proposing that the latter example (but not the former) involves a CP, which (details aside) "shields" PRO from the requirement to be controlled/bound. However, contemporary theories of control commonly analyze control complement clauses as involving (at least some projections of) the CP domain (see among many others Landau 2015). The assumption that a CP layer lifts the requirement for PRO to be controlled is therefore questionable, which serves as another argument against the traditional analysis.

As outlined in section 2, Wurmbrand & Lohninger 2023 shows that Event complements are cross-linguistically more transparent (i.e., more permeable for dependencies such as movement or agreement) than Situation complements and proposes that Event complements may be as small as a vP or VoiceP (i.e., include the theta domain only), while Situation complements minimally comprise projections of the aspectual and/or temporal domain (e.g., AspP or TP). Note that these are the *minimal* requirements for these verb classes; the exact selectional requirements of the different classes (or even individual verbs) may vary across languages, and larger complements are allowed as long as the resulting configuration converges at the interfaces. Furthermore, the structural cutoff points for different dependencies are not absolute but are subject to cross-linguistic variation as well: a dependency $\mathfrak{D}$ may be able to cross, say, a TP in language $\mathfrak{L}_1$ but only be possible across complements that are no larger than a VoiceP in language $\mathfrak{L}_2$. It will then be possible across both Situation and Event complements in $\mathfrak{L}_1$ but only across Event complements in $\mathfrak{L}_2$. Therefore, the lack of statistical evidence in our data for the contrast between the two classes with respect to long passive does not speak against the implicational complementation hierarchy in Wurmbrand & Lohninger 2023 but rather implies that the cutoff point for long passive in Dutch is a projection that is at least as big as the minimal required complement size of Situation verbs (e.g., AspP). As discussed in section 5, this is certainly possible: the Voice–Voice dependency may be established across additional projections, as long as there is no PRO and none of the extra heads carries a valued index feature. At the same time, the numerical difference in the scores indicates that long passive is more difficult with Situation verbs, which may be due to (at least some) Situation verbs embedding larger complements.

Recall that, in addition to the verbs that allow the IPP effect in the active (including the Situation verb *weigeren* 'refuse'), three other Situation verbs that do not allow the IPP effect received higher ratings in long passive: *afraden* 'advise against,' *adviseren* 'advise,' and *voorstellen* 'propose.' What these three verbs have in common is object control: the first two are the only two object control verbs among the verbs that we tested, and the third (which received the lowest scores of the three) alternates between subject and object control (Broekhuis & Corver 2015: 792–793). This is exactly what our approach leads us to expect. In section 6.1, we argued that long passive is problematic for some Dutch speakers because of a clash between passive and the IPP effect, and we tied the IPP effect (with control verbs) to the Voice–Voice dependency.

In cases of object control, illustrated in (26), the first valued index feature that the embedded Voice head encounters is the one on the matrix object (or, alternatively, on a functional head introducing the object), before the matrix Voice head is even merged. The Voice–Voice dependency is therefore not established, the conditions for the IPP effect are not met, and there is no clash with the matrix passive: as long as there is no PRO in the complement (which, as discussed in section 5, would block long object promotion), there is no obstacle for long passive.[17]

(26)



This brings to light a further prediction of our proposal: if the IPP effect with control verbs requires the Voice–Voice dependency and if no Voice–Voice dependency is established in object control, then no object control verb should be compatible with the IPP effect. As far as we can tell, this prediction is borne out (see also Augustinus & Van Eynde 2012).

Finally, Den Besten et al. 1988 reports that long distance scrambling in the passivized third construction (which, recall, is impossible with subject control verbs; see (24b) in section 6.2) is possible with the object control verb *bevelen* 'order, command':

[17] As it stands, our analysis leads us to expect that, all else being equal, long passive with object control verbs should not be subject to speaker variation: we link variation to the clash between IPP and passive, which does not arise with object control verbs. The only mention in the literature of long passive with an object control verb that we are aware of is a side comment in Den Besten et al. 1988 that long passive with *bevelen* 'order, command' is not possible. However, the unacceptability of this construction can be debated. Since we have not included *bevelen* in our experiment, we are unable to provide an assessment of its compatibility with long passive in general, and we leave the investigation of long passive with object control verbs for another occasion.

(27) ?*dat hem* [*die boeken*]$_i$ *bevolen werd* [t_i *te lezen*]
that him the books ordered AUX to read
Literally: 'that it was ordered to him to read the books'
(Den Besten et al. 1988: 32)

This is again expected based on our treatment of parallel examples with subject control verbs in section 6.2. We argued there that the scrambled object serves as a defective intervener for an Agree dependency between matrix T and the matrix implicit agent, a dependency that, following Van Urk 2013, is necessary for the implicit agent to be able to control PRO. In (27), the controller is not the implicit agent but the matrix object *hem* 'him,' so the intervention caused by the scrambled object does not play a role: even if T is unable to agree with the implicit agent, this does not affect the matrix object's ability to control PRO, and the derivation converges.

Before closing this section, we remark that (some) Situation and Event verbs in Dutch optionally combine with complements introduced by the element *om* (e.g., *proberen/besluiten (om) te* 'try/decide (*om*) to'), which is traditionally analyzed as a C head (see IJbema 2001: 133 and references therein). Since A-dependencies in Dutch cannot cross CPs and since *om* is known to be incompatible with transparency phenomena such as verb raising and long distance scrambling (e.g., Den Besten et al. 1988, Rutten 1991), one would expect *om* to block long passive as well. On the other hand, Bouma 2017 suggests that *om* is an explicit marker of the infinitival clause and may therefore reduce processing costs. This raises the question whether the presence of *om* might render instances of long passive easier to process and thereby enhance their acceptability. We leave the investigation of this tension to future research.

6.4 Aspectual verbs: hypothesis (iii)

Aspectual Event verbs received much lower ratings than the other verb classes in both implicit control and long passive. This hypothesis was based on the findings in Pitteroff & Schäfer 2019, where it is suggested that the degradedness of implicit control with *beginnen* 'begin' might be a consequence of its aspectual status and of a preference for the use of aspectual verbs as raising predicates rather than control predicates in Dutch. We propose an implementation of this remark in section 6.4.1, treating aspectual verbs as functional heads, but show that such an analysis predicts that implicit control and long passive should be equally unacceptable, contrary to

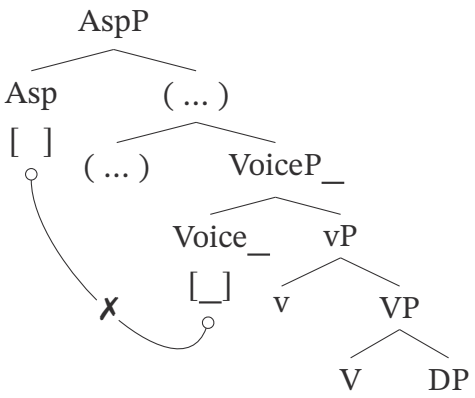
what we observe. Moreover, since not all Dutch aspectual verbs may be classified as raising verbs in the narrow sense, we take a different approach in section 6.4.2 and link the degradedness of implicit control and the unacceptability of long passive with these verbs to the nature of the infinitival clause they combine with. We show that these infinitives are interchangeable with PPs and behave similarly to obligatory control adjuncts when it comes to extraction; based on this, we propose that they are embedded in a (covert) PP layer.

6.4.1 Aspectuals as functional heads

Pitteroff & Schäfer 2019 suggests that the degradedness of implicit control with aspectual verbs can be explained if these verbs are preferably used as raising verbs. Aspectual verbs can then be analyzed as functional aspectual heads above the theta domain (Cinque 1997, 1999, Wurmbrand 2001), which form part of a monoclausal configuration and have no thematic arguments (Cinque 2004, Wurmbrand 2004). As such, they are incompatible with two defining properties of both implicit control and long passive: (matrix) passive and control.

An attempted derivation of long passive with an aspectual verb as a functional head is given in (28). Under the analysis adopted in this article, control in long passive is established by means of a dependency between an embedded underspecified Voice head and matrix Voice. However, if an underspecified Voice head is merged into a monoclausal structure as in (28), no other Voice head is present. Since an aspectual verb as a functional head above Voice introduces no individual arguments, there are no potential controllers in the configuration, and Voice remains unvalued.

(28)



Note that the configuration furthermore remains without a (thematic) subject, which serves as another cause for its ungrammaticality. Of course, with an unaccusative lexical verb, no thematic subject would be needed, but unaccusatives are excluded from configurations such as (28) for independent reasons: they are incompatible with long passive in general, presumably as a consequence of not projecting a Voice layer and hence inherently not being able to combine with Voice, whether underspecified or not (Wurmbrand et al. 2021).

However, the analysis in (28) has two drawbacks. First, if analyzing Dutch aspectual verbs as functional heads were the only option, implicit control with these verbs should be as unacceptable as long passive: apart from the fact that functional verbs cannot passivize, merging PRO into a monoclausal configuration should yield an ungrammatical outcome, since PRO would be left without a controller.[18] Our experimental results, however, show a difference in the acceptability of the two configurations: aspectual verbs in long passive were rated as low as the ungrammatical fillers, while the average ratings for implicit control were marginal (see section 3).

Second, the functional head analysis cannot be applied to all the aspectual verbs in Dutch. The sentences in (29), shared with us by Marcel den Dikken, show that only *beginnen* 'begin' is compatible with an expletive subject and a raised idiom chunk.

(29) a. *Er {begon / *hield op / *startte / *stopte} sneeuw te vallen.*
there began ceased PRT started stopped snow to fall
'It began/ceased/started/stopped to snow.'

b. *De aap {begon / *hield op / *startte / *stopte} uit de mouw te komen.*
the monkey began ceased PRT started stopped out the sleeve to come
'The truth began/ceased/started/stopped to be revealed.'

[18] This seems to be the case at least for some speakers (and/or verbs): for instance, Marcel den Dikken (2021) judges implicit control with *beginnen* 'begin' as unacceptable (and also makes a connection to its use as a raising verb). He gives implicit control with *vergeten* 'forget' a * as well, completing the already high degree of variation reported in Pitteroff & Schäfer 2019: 151 for this configuration (3, 4, 7, 7 on a seven-point scale). Since this verb belongs to the non-aspectual Event class, this is unexpected and opens up a range of interesting questions. Note that *vergeten* 'forget' is "notorious" for its idiosyncratic behavior (Broekhuis et al. 2015: 237).

This suggests that the other three verbs have a theta role to assign to a nominal argument in the matrix clause. Thus, while *beginnen* 'begin' acts like a raising verb in the narrow sense, this is not true for the other three verbs that we tested.

In the next section, we propose an alternative analysis that addresses both of the points raised: it provides a means for capturing the contrast that the experiment found between (degraded) implicit control and (unacceptable) long passive while treating the Dutch aspectual verbs as a uniform class. Note that the verb *beginnen* thus has a special status in that it is ambiguous between two analyses: the one outlined in this subsection, which treats it as a raising verb, and the one that we are about to propose, where it patterns with the other Dutch aspectual verbs.

6.4.2 Infinitives as PPs

Broekhuis 2004 discusses a set of Dutch verbs, including several aspectual verbs, that have a mixed status in that they resist classification as pure unaccusatives or unergatives (e.g., *doorgaan* 'continue,' *ophouden* 'cease,' *stoppen* 'stop,' *voorbijgaan* 'pass by,' *uitgaan van* 'assume'). Our aspectual verbs may be used as unaccusatives, as they reject *-er* nominalization (**een beginner met/aan een nieuw project* 'a beginner of a new project') and select the auxiliary *zijn* 'be' in the perfect, as shown in (30) (see also Hoekstra 1999).

(30) *Het feest* ***is*** {*begonnen/gestart/gestopt/opgehouden*} *om 22 uur.*
the party is begun/started/stopped/PRT.ceased at 22 hours
'The party began/started/stopped/ceased at 10 p.m.'

At the same time, they cannot readily be used attributively (??*een aan/met een nieuw project begonnen meisje*, literally 'an on-a-new-project-started girl'; intended meaning: 'a girl who started with a new project') and are compatible with impersonal passive, as shown in (31), which points towards unergativity.

(31) a. *Er werd gestopt met roken en dat zonder enig hulpmiddel.*
there AUX stopped with smoking and that without any aid
Literally: 'It was stopped smoking, and without any aid.'
(*Michèle Magazine*, 9 January 2015)

b. *Er werd gestart met het verstrekken van informatie …*
there AUX started with the providing of information
Literally: 'It was started to provide information …'
(*Stichting Welzijn Brummen*, 10 October 2018)

The compatibility of aspectual verbs with impersonal passive (31) is especially important for resolving the unaccusative–unergative ambiguity in the configurations under investigation (implicit control and long passive) because both involve passive in the matrix clause. It is well-known that (regular) unaccusative verbs cannot passivize (Perlmutter & Postal 1984; see, e.g., Legate et al. 2020 for more recent work), which has been attributed to their not projecting a VoiceP (e.g., Pylkkänen 2002, Alexiadou et al. 2015). Under the analysis adopted here, where (impersonal) passive is a result of a passive Voice head (see section 5), the examples in (31) show that our aspectual verbs, unlike regular unaccusatives, are able to combine with a VoiceP. We therefore conclude that they act as unergative verbs in (attempted) implicit control and long passive and involve a passive Voice layer.

The matrix Voice domain of aspectual verbs in these configurations is then no different from the one we find with Situation and non-aspectual Event verbs, and, as far as the matrix portion of the clause is concerned, the basic requirements are met for implicit control and long passive. Recall, however, that aspectual verbs received much lower ratings than the other two verb classes in both implicit control and long passive, even for speakers who allow long passive in principle. If the difference between the verb classes cannot be tied to the matrix clause, then the reason for their deviant behavior must lie in the infinitival clause, the only other possible source of the discrepancy. We propose that while the infinitive that combines with Situation and non-aspectual Event verbs is a regular clausal complement, the one we find with aspectual verbs is embedded under a (covert) PP, similarly to an obligatory control adjunct (see Landau 2021). In the remainder of this section, we first provide evidence for the presence of a PP layer in the infinitival clause and then proceed to show how this accounts for the degradedness of implicit control and the unacceptability of long passive with Dutch aspectual verbs.

6.4.2.1 A PP layer in the infinitival clause

As shown in (32), Dutch aspectual verbs may in principle combine with either a *met* PP or a *te* infinitive with little or no semantic difference.[19]

(32) *Het* {*hield op / begon*} {*met regenen / te regenen*}.
it ceased PRT began with raining to rain
'It ceased/began to rain.'

Moreover, De Rooij 1981 investigates the dialectal distribution of embedded clauses with *beginnen* 'begin' in the Netherlands and Flanders and reports two items from a corpus in which the *met* PP and *te* infinitive are used in the same clause (*begonnen met toneel te spelen*, literally 'begun with theatre to play' and *begonnen met hem te zeggen*, literally 'begun with him to say'). This complex is regularly encountered in colloquial Dutch, and a Google search corroborates its existence, as illustrated in (33) for *beginnen* 'begin' and the other aspectual verbs in our item set (but note that the *met–te* combination is not always equally well-formed, the reasons for which we abstain from speculating on here).[20]

(33) a. *Politie is ook begonnen **met te** twitteren.*
police is also begun with to tweet
'The police also began using Twitter.'
(*Bastion Oranje*, 3 June 2011)

b. *De onderzoekers zijn gestart **met te** kijken naar hybride voertuigen.*
the researchers are started with to look at hybrid vehicles
'The researchers started looking at hybrid vehicles.'
(*Alles Over Waterstof*, 11 May 2019)

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[19] The qualification *in principle* is intended to accommodate the fact that at least some aspectual verbs (especially *starten* 'start,' *stoppen* 'stop') show a strong preference for a *met* PP and cannot effortlessly combine with a *te* infinitive. We do not provide an explanation for this behavior, but we observe that if infinitives are degraded with these verbs in general, then the degradedness of implicit control (which involves an infinitival complement) follows immediately. It is then only the impossibility (as opposed to degradedness) of long passive that needs to be derived. However, since the grammar seems to allow (at least some of) these verbs to combine with infinitival clauses, we propose an analysis that accounts for the degradedness of implicit control while still allowing infinitives in the active.

[20] Note that these clauses are different from the *with* PPs that may appear with aspectual verbs in English, which Mourounas & Williamson 2019 describes as **specificational**. An example that Mourounas & Williamson give is *The investigation began with the inspection of the factory* (22, (85a)). In this example, the event that starts is the investigation, and the initial sub-event of the investigation event is **specified** as corresponding to the event of the inspection of the factory. In the Dutch examples above, in contrast, the *met* PP does not merely specify the initial sub-event of another event but rather denotes the very event that starts or stops.

c. *Ben gestopt* ***met te*** *stressen over iets dat toch al staat*
am stopped with to stress about something that PRT already stands
geschreven.
written
'I've stopped stressing about something that's already written.'
(Post on Twitter by user @hettkind, 7 December 2020)

d. *de faillietverklaring van een onderneming die is opgehouden*
the bankruptcy.declaration of a company that is ceased
met te *betalen*
with to pay
'the declaration of bankruptcy of a company that ceased to pay'
(*Uwwet Juridisch Portaal*, 20 August 2010)

These examples show that the *met* PP and the *te* infinitive are not just interchangeable with each other; they may also co-occur, the former embedding the latter. Taking this observation as a starting point and extending it to "simple" *te* infinitives that combine with aspectual verbs opens up the possibility that the latter are embedded in a (covert) PP layer as well—an idea that is reminiscent of Landau 2021's analysis of obligatory control adjuncts (e.g., *Max went out* [*to smoke*]) as involving a (covert) PP layer that embeds projections of the CP domain.

The parallel with obligatory control adjuncts is corroborated by the similar behavior of infinitival dependents of Dutch aspectual verbs when it comes to extraction: they are more opaque than the infinitival complements of non-aspectual Event or Situation verbs. For instance, as shown in (34), complements of non-aspectual Event and Situation verbs are transparent for long distance scrambling (i.e., they are compatible with the third construction; see section 6.1). Infinitival dependents of Dutch aspectual verbs, on the other hand, disallow long distance scrambling, as (35a) shows, regardless of whether *met* is present (if anything, the presence of *met* makes the sentence worse), just like obligatory control adjuncts do (35b).[21]

[21] The clause-introducing *om* is generally treated as a complementizer, at least when it occurs with complement clauses. However, the element doubles as a preposition, and the expression of purpose or goal that it contributes in infinitival adjuncts can be seen as a (historical) link to the prepositional use (see IJbema 2001: sect. 3.8 and references therein). We thus assume that *om* in these cases corresponds to Landau's (covert) P.

(34) a. *dat Angela Mark$_i$ heeft* ***geprobeerd*** *[t_i te bedriegen]*
that Angela Mark has tried to deceive
'that Angela tried to deceive Mark'
(Non-aspectual Event)

b. *dat Angela Mark$_i$ heeft* ***geweigerd*** *[t_i te bedriegen]*
that Angela Mark has refused to deceive
'that Angela refused to deceive Mark'
(Situation)

(35) a.*?*dat Angela Mark$_i$ is* ***begonnen*** *[(met) t_i te bedriegen]*
that Angela Mark is begun with to deceive
Intended: 'that Angela began to deceive Mark'
(Aspectual)

b. **dat Angela Mark$_i$ hard werkt [om t_i te bedriegen]*
that Angela Mark hard works for to deceive
Intended: 'that Mark works hard to deceive Angela'
(Goal clause)

Further, Landau 2021 shows that obligatory control adjuncts block adjunct *wh* extraction. This is illustrated in (36) for a goal clause in Dutch: the question can only concern the manner of going out (matrix reading), not the manner of singing (embedded reading).

(36) A: *Hoe ging Lars naar buiten om te zingen?*
how went Lars towards outside for to sing
'How did Lars go out to sing?'

B: *Plotseling./#Zuiver.*
suddenly/in.tune
'Suddenly.'/#'In tune.'

We find a similar restriction with infinitival dependents of Dutch aspectual verbs. In (37), the question is preferably interpreted as asking about the manner of ceasing (matrix reading) and not about the manner of singing (embedded reading).[22]

[22] Through informally collecting judgments from eight Dutch syntacticians in our network (who were uninformed about our purposes), we have encountered variation among speakers with regard to the strength of this contrast. We leave a dedicated experimental investigation to future research.

In contrast, both readings are readily available with Situation and non-aspectual Event verbs, as illustrated in (38): the question can be about the manner of either refusing/trying or singing.

(37) A: *Hoe was Lars* ***opgehouden*** *te zingen?*
how was Lars ceased to sing
'How did Lars cease to sing?'
B: *Plotseling./#Zuiver.*
suddenly/in.tune
'Suddenly.'/#'In tune.'

(38) A: *Hoe had Lars* {***geweigerd***/***geprobeerd***} *te zingen?*
how had Lars refused/tried to sing
'How did Lars refuse/try to sing?'
B: *Plotseling./Zuiver.*
suddenly/in.tune
'Suddenly.'/'In tune.'

Finally, Landau points out that obligatory control adjuncts show similarities to complement clauses in terms of their semantic behavior and their composition with the matrix verb. This is another point of resemblance to the infinitival dependents of Dutch aspectual verbs: they, too, are very much complement-like in terms of their semantic contribution.

Taking these parallels into account, we apply Landau's analysis of obligatory control adjuncts to the infinitival dependents under scrutiny and propose that they involve a covert PP layer that might also embed a CP (or at least projections of the CP domain such as FinP). This analysis captures their adjunct-like opacity for extraction, the possibility of co-occurrence with an overt preposition (*met*), and their interchangeability with PPs. As we will show presently, it also accounts for the degradedness of implicit control and the unacceptability of long passive.

6.4.2.2 Implicit control and long passive

Starting with implicit control, Landau 2021 argues that obligatory control into adjuncts involves predicative control—control via (syntactic) predication (see also Landau 2013: chap. 6). In a nutshell, PRO in predicative control acts as a λ abstractor

and turns the infinitive into a predicate, which is then saturated by the controller (Landau 2015; see also Clark 1990). We extend this analysis to infinitival dependents of Dutch aspectual verbs. Coupled with the assumption that predicates cannot be saturated by implicit arguments (see Landau 2010, 2015), control via predication provides us with a means of capturing the degradedness of implicit control with aspectual verbs: since the matrix (passive) portion of the clause does not include a DP argument but merely a numerical index feature on Voice (see section 5), there is no element in the configuration that is able to saturate the infinitival predicate, and control cannot be established.[23], [24] In order to account for the degraded (rather than unacceptable) status of implicit control, we suggest that at least some speakers may resort to pragmatic principles (e.g., akin to those operative in non-obligatory control, such as logophoricity and topicality) to construe a control-like interpretation (cf. Reed 2020, Landau 2021).[25]

As for long passive, the central topic of this article, recall that this configuration is most clearly distinguished from implicit control by promotion of the embedded object to matrix subject. Crucially, this is only possible if the embedded clause is small (or deficient) enough to allow agreement between matrix T and the embedded object. The presence of PP and possibly CP layers in the infinitives in question straightforwardly accounts not only for the impossibility of promotion of the embedded object but also for the failure of a syntactic dependency between the embedded underspecified Voice head and the matrix passive Voice and hence the impossibility of argument sharing. In contrast to implicit control, however, where the

[23] The connection between control via predication and the impossibility of implicit control is made in Landau 2015 as well. Landau argues that control is established by means of predication with all non-attitude verbs (including our non-aspectual Event class), and he cites the impossibility of implicit control with these verbs as an argument in favor of this approach. However, the validity of this empirical claim is called into question not only by the results of the present study, which shows that implicit control is indeed possible with non-aspectual Event verbs in Dutch, but also by cross-linguistic surveys such as the one in Pitteroff & Schäfer 2019, which lists three more languages that allow implicit control with non-attitude verbs—a challenge acknowledged by Landau 2021: 26–27. The reduction of control with all non-attitude verbs (and obligatory control adjuncts) to the very same mechanism of syntactic predication thus seems to be in need of refinement.

[24] The acceptability of impersonal passive with a PP dependent (see (31)) is captured if it is only the infinitives, not the PPs, that involve PRO as a λ abstractor (cf. Landau 2013: 227) and require syntactic predication, which in turn calls for a DP argument.

[25] Closer inspection of the data reveals that the degree of (un)acceptability of implicit control with aspectual verbs varies among speakers, suggesting differences in the availability of a repair strategy. We do not investigate this variation further here, but we note that it does not correlate with the variation in the acceptability of long passive with non-aspectual verbs, indicating that different factors are at play. If pragmatic aspects are indeed involved, then variation among speakers is expected (see also Landau 2021: 128), and properties of individual experimental items (e.g., the salience of a potential "controller" in the given context) may play a role as well.

unavailability of syntactic control may be rescuable by pragmatics, the Voice–Voice relation required for control in long passive is a purely syntactic dependency and hence beyond repair outside of syntax proper. Long passive is therefore ruled out for two reasons: neither control nor promotion of the embedded object is possible, which leads to an ungrammatical outcome.

7 Conclusion

This article reported on an acceptability judgment experiment investigating the status of long passive in Dutch and provided a syntactic account of the findings. As previous linguistic literature leads us to expect, the configuration proved to be marginal. However, we showed that long passive cannot simply be discarded as entirely absent from the language: the configuration is subject to substantial speaker variation, and there are speakers of Dutch to whom long passive is in fact acceptable. On the assumption that ungrammatical configurations do not display contrasts linked to syntactic properties, our conclusion is supported by the fact that the acceptability of long passive hinges on the class of the matrix verb: aspectual Event verbs (e.g., *beginnen* 'begin') are incompatible with long passive, while non-aspectual Event verbs (e.g., *proberen* 'try') and Situation verbs (e.g., *weigeren* 'refuse') are rated much more highly. Furthermore, the acceptability of long passive appears to be connected to the matrix verb's compatibility with the IPP effect.

We proposed that, contrary to appearances, long passive itself (as a combination of matrix passive, implicit control, and long object promotion) is unproblematic, at least for a subset of the verbs we tested; in fact, it is even expected to arise. What causes the problem, we argued, and leads to a degraded outcome for some speakers is a clash between the IPP effect and passive participles. Speakers who accept long passive are able to avoid the IPP effect by extraposing the infinitive and thereby obviate the clash with passive participles. Our analysis has at least three welcome consequences. First, it provides a new perspective on the syntax underlying the IPP effect and, concomitantly, a direction for further research on infinitival complementation in Germanic. Second, our implementation predicts that object control verbs should not be compatible with the IPP effect, which, to the best of our knowledge, is borne out. Third, it allows us to better understand the difference between Dutch and German, where long passive is more readily accepted: since German control verbs do not show the IPP effect, we expect no clash to arise and long passive to be more widespread.

Our results also have repercussions for theories of restructuring and complementation in general. We showed that infinitival dependents of Dutch aspectual verbs are opaque for extraction in a way that is atypical of complement clauses and makes them similar to obligatory control adjuncts. This paves the way for future cross-linguistic study, which could investigate whether aspectual verbs in other languages pattern similarly to Dutch ones.

More generally, quantitative data collection methods allow us to carefully examine individual variation patterns and can therefore enrich the empirical grounds on which we base our theoretical claims. We showed in the present article that long passive in Dutch is subject to a high degree of interspeaker variation; closer scrutiny of the data uncovered patterns pertaining to individual verbs as well, revealing a connection between seemingly unrelated phenomena and a novel perspective on the data at hand. We thus conclude that devoting attention to individual variation and exploring it through an experimental lens is a fruitful way of reaching valuable insights into broader aspects of the grammar of a language.

Additional sources

Non-scholarly sources of naturally occurring examples (name of publication, publication date, and URL):

(4) *De Gelderlander*, 11 August 2019
https://www.gelderlander.nl/binnenland/twee-doden-bij-ernstig-ongeval-bij-sint-oedenrode~a9517f3f/

(31a) *Michèle Magazine*, 9 January 2015
https://issuu.com/mouriknv/docs/michele_magazine_compleet

(31b) *Stichting Welzijn Brummen*, 10 October 2018
https://www.welzijnbrummen.org/dag-van-de-ouderen-succes

(33a) *Bastion Oranje*, 3 June 2011
https://www.bastionoranje.nl/index.php?pagina=nieuws&categorie=577&artikel=5299

(33b) *Alles Over Waterstof*, 11 May 2019
https://allesoverwaterstof.nl/nieuw-soort-brandstofcel-gaat-10x-langer-mee/

(33c) Twitter (user @hettkind), 7 December 2020
https://twitter.com/hettkind/status/1336032578973872128

(33d) *Uwwet Juridisch Portaal*, 20 August 2010
https://www.uwwet.nl/wetten-en-regelingen/privaatrecht/faillissementswet/rechtspraak/2-faillietverklaring.htm

Data availability

The data files, stimuli, and analysis scripts are available in our Open Science Framework repository at https://doi.org/10.17605/OSF.IO/HWZB2.

Ethics and consent

The experiment was approved by Radboud University's Ethics Assessment Committee–Humanities (number 2021-1403).

Competing interests

The authors declare that they have no competing interests.

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