

(NON-)HOMOGENEITY IN DUTCH IMPERSONAL PASSIVES OF UNACCUSATIVES

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Abstract: This paper sheds new light on the behaviour of telic predicates, particularly unaccusatives (*opstijgen* ‘take off’, *vallen* ‘fall’), in the Dutch impersonal passive (= ImpersP) construction. Using recently collected data, I show that Zaenen’s (1988, 1993) contention that Dutch ImpersPs are barred from a non-homogeneous (telic) interpretation, though generally accepted in the literature, is empirically flawed. In fact, a telic reading obtains whenever the ImpersP of a telic predicate refers to a singular event. In this case, the implicit argument receives either a singular or a collective reading (see Landman’s (1989, 1996) theory of groups). In contrast, homogeneous ImpersPs of telic predicates assume a distributive plural event interpretation and select an argument with a distributive, bare plural-like reading. Based on a comparison with active unaccusative constructions with bare plural subjects (see Rothstein 2008a), I argue that the aspectual properties of an ImpersP predicate determine the referential properties of the argument, *pace* Primus (2010a and 2010b).

Keywords: impersonal passive, unaccusative, telicity, event structure, implicit argument

1. Introduction

1.1 The Dutch impersonal passive construction

The Dutch impersonal passive is an analytic construction formed by combining the auxiliary verb *worden* ‘become’ (or *zijn* ‘be’, for the perfect forms) with the past participle of a lexical verb, typically an intransitive. In a Dutch impersonal passive clause the initial (subject/topic) position, immediately preceding the auxiliary, is often occupied by the weak locative deictic *er* ‘there’, as in (1).¹ If this topic position is already filled by a fronted constituent, for instance an adjunct or the past participle, *er* is either placed after the auxiliary or it is omitted, as in (2).

- (1) ***Er*** **werd** goed **gespeeld** *door de jongens*, resultaat winst met 4-3.
there became well played by the boys result gain by 4-3
‘That was some good playing by the boys; result: gain by 4 to 3.’
(<http://www.cambuur.nl/news/article366081.ece>)

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¹ The relevant constituents of the impersonal passive constructions in the examples have been highlighted with italics and bolding.

- (2) Op deze muziek **wordt** (*er*) altijd flink **gedanst**.
 on this music becomes there always vigorously danced
 ‘On this music people always dance vigorously.’

Just like a personal passive, an impersonal passive involves the demotion of the core argument, which in the active counterpart of the passive would play the subject role. But whereas in a personal passive another argument (often the internal one) acts as the subject, in an impersonal passive no argument assumes this function. As pointed out above, the initial (subject/topic) position of an impersonal passive is occupied by another type of constituent.

The demoted argument may surface as an agentive ‘by’-phrase adjunct, e.g. *door de jongens* ‘by the boys’ in (1). Often, however, it remains unexpressed, in which case (some of) the identity of its referent can be retrieved from the selectional properties of the lexical verb, from real world knowledge, or from additional information in the discourse context. For instance, in (3) the participants in the events denoted by the impersonal passives *er werd opgestegen* ‘taking off occurred’ (‘we took off’) and *werd ... gevaren* ‘travelling took place’ (‘we travelled’) in the third sentence can be identified based on co-reference with the subject of the first sentence, *Bob, Danny en Reginald*, as well as with the direct object of the second sentence, *ons* ‘us’.

- (3) Op woensdag 19 december deden *Bob, Danny en Reginald* een gasvlucht vanuit het Duitse Gladbeck. De Oostenwind stuurde *ons* richting Nederland en België. **Er werd opgestegen** om 06.00 ’s morgens en bijgevolg **werd** twee en een half uur in het donker **gevaren**.
 ‘On Wednesday, the 19th of December, Bob, Danny and Reginald went on a gas balloon flight from Gladbeck, Germany. The east wind sent us towards the Netherlands and Belgium. Taking off took place at 6.00 AM and consequently we travelled two and a half hours in the dark.’
 (<http://www.ballooning.be/index.asp...>)

In the absence of discourse anchoring by co-reference, the deleted core argument remains implicitly present in the semantic structure, as a variable which may be interpreted either as existentially bound or as universally bound, depending on the aspectual properties of the impersonal passive clause. For instance, if the sentence in (4) is read as referring to one event or a group of events of whistling (**episodic reading**) (4a), then the implicit argument assumes an existential interpretation (‘somebody/some people’).

- (4) **Er wordt gefloten.**
 there becomes whistled
 a. ‘There is some whistling taking place now (and there is somebody/
 there are some people whistling).’

Interestingly, impersonal passives share with existential constructions, which are also commonly introduced by the weak locative deictic *er* ‘there’, the indefinite non-specific interpretation of a constituent. In the existential construction in (5), for instance, it is *een olifant* ‘an elephant’, the core argument of the verb *staan* ‘stand’, which takes an indefinite reading, referring to some unspecified individual of the elephant species.

- (5) **Er staat een olifant** in de kamer.
 there stands an elephant in the room
 ‘There is an elephant (standing) in the room.’
 (<http://sargasso.nl/archief/2010/05/21/...>)

Just as *er* existential constructions introduce into the discourse one or more unspecified entities of the kind denoted by an indefinite noun phrase (the subject), **impersonal passives introduce a new, non-specific event or plurality of events of the kind denoted by the predicate**. For example, in (4a) above it is the impersonal passive predicate itself, *wordt gefloten* ‘whistling is taking place’ which assumes an indefinite, non-specific interpretation. In other words, what the impersonal passive in (4) conveys on the episodic reading in (4a) is that there is some event or there are some events of whistling going on, performed by one or more unspecified individuals (whose existence is also implicitly stated). Note, however, that on this reading, (4) may mean three different things:

- (6) a. there is **one single individual**, say Jan, who is whistling
 b. there is **a group of people**, say Jan, Mieke and Piet, who are whistling together
 c. there are **different people or different groups of people** whistling independently at approximately the same time (imagine for instance Jan, Mieke and Piet whistling separately in different areas of the same forest and the speaker hearing them all).

An impersonal passive construction can also receive a generic interpretation. For instance, the sentence in (4) above may be taken to refer to a series of regularly occurring events (**generic habitual reading**), as in (4b). On a habitual reading, the implicit argument variable assumes the same kind of existential (indefinite non-specific) interpretation (‘somebody/some people’) characteristic of an episodic reading.

- (4) b. ‘There is regular whistling (and there is somebody/there are some people (or other) who whistle regularly).’

Like the episodic reading in (4a), the habitual reading in (4b) allows for the sentence to be interpreted in three ways, as shown in (7). These interpretations parallel those mentioned in (6) above, with one important distinction. As we have seen, on the episodic reading in (4a) the events referred to by the predicate are seen as belonging to a limited, bounded set. This set may contain a group of events (6c) or just a single event (6a-c). In contrast, on the habitual reading in (4b) the series of events denoted by the predicate is presented as unlimited, unbounded; in this case, the events do not co-occur, but rather they are distributed over time. I will refer to this type of unbounded plural event reading, as in (7a-c), characteristic of generic sentences, as **distributive plural event interpretation**, to distinguish it from the **group plural event interpretation** characteristic of episodic sentences (6c).

- (7) a. there is **one single individual**, say Jan, who whistles regularly
 b. there is **a group of people**, say Jan, Mieke and Piet, who whistle together regularly
 c. there are **different people or different groups of people** who whistle independently at regular intervals (it is also conceivable that the whistling is never done twice by the same people; what matters is that the whistling events, even if performed by different people, form a regular pattern).

When used to refer to any possible event of the kind denoted by the predicate, rather than to actually occurring events, an impersonal passive constructions assumes a **generic non-habitual reading**. For instance, in (8), on such a reading, the impersonal passive can be interpreted either as the statement of a rule (8a) or as a disposition ascription (8b). In both cases, the implicit argument variable is bound by the universal quantifier and receives a universal interpretation (‘anybody’, more precisely, ‘anybody acting either independently or in groups, in any imaginable distribution’ – cf. (7iii)).

- (8) **Hier wordt gefloten.**
 here becomes whistled
 a. ‘Whistling is to take place here as a rule (and anybody who is in a position to whistle here must whistle).’
 b. ‘It is a characteristic of this place that anybody who may be in a whistling situation here will whistle.’

Since generic non-habitual impersonal passives refer to all the possible events of the kind denoted by the predicate, it follows that, just like habitual impersonal passives, they take a distributive plural event interpretation. But, whereas a habitual reading presupposes the existence of the individuals denoted by the implicit argument, on a generic non-habitual reading the implicit argument refers distributively to all the individuals that could ever be involved in the events denoted by the predicate. Note, however, that in a generic non-habitual impersonal passive with directive function, such as (9), for instance, where the addressee is specified as *Jantje*, the implicit argument variable is no longer bound universally but rather it gets a definite specific interpretation under co-reference with the addressee.

- (9) En nu, ***Jantje***, **wordt er geslapen!** [mother to child]
and now Jantje becomes there slept
'And now, Jantje, go to sleep!'

(Kirsner 1976: 398 (9a))

It should be pointed out that, although the 'single participant' interpretation of the implicit argument is available on both an episodic and a habitual reading, as in (6)-(7) above, this singular interpretation is marked. In the absence of anchoring by co-reference, in (9) and (10), Dutch hearers tend to interpret the implicit argument of an impersonal passive by default as referring to a plurality of individuals, acting either as a group involved in a specific event or in a series of events, as in (6b) and (7b), or distributively, as independent participants or independent groups of participants in a plurality of events, as in (6c), (7c) and (8).

- (10) Zacht zei ik tegen ***het wezentje***, "knipoog nu eens naar mama!". En warempel, **er werd geknipoogd.**
'Softly I told the little creature: "Wink now once to mommy!". And, truly, there was winking.'

(<http://www.showbiznewz.nl/index...>)

Since in a Dutch impersonal passive the information is encoded syntactically in such a way that the event or events denoted by the predicate and the circumstances in which they occur are given pride of place, such constructions can be found precisely in those types of genres and discourse situations where events rather than participants in these events are presented or generalized upon. Here are a few examples: news reports, scientific or technical reports, descriptions of itineraries and journeys, minutes of meetings, summaries of books or films, statements of generic properties, rules or commands.

1.2 The distribution of intransitive verbs in Dutch impersonal passives

It has long been claimed in traditional Dutch linguistics that only agentive verbs denoting actions or activities, e.g. *dansen* ‘dance’, *lopen* ‘walk’, *roepen* ‘shout’, are allowed to occur in an impersonal passive construction, whereas verbs like *sterven* ‘die’, *vallen* ‘fall’, *weglopen* ‘walk away’, which denote a change of state or of location, and stative verbs, like *zijn* ‘be’, are barred from this type of construction (see te Winkel 1866, Kraak and Klooster 1968, van Es and van Caspel 1973, Pollmann 1975, Haeseryn et al. 1997, among others).

This dichotomous behaviour of Dutch intransitive verbs in the impersonal passive construction served as one of Perlmutter’s (1978, 1989) main arguments for assuming the existence of two subclasses of intransitives: unergatives, e.g. *work*, *play*, *talk*, which basically denote ‘willed and volitional acts’ (Perlmutter 1978: 162), and unaccusatives, e.g. *sink*, *melt*, *arise*, *exist*, which comprise most non-volitional predicates. Perlmutter claimed that unaccusatives may not occur in impersonal passives because their syntactic structure does not allow it: unlike the subject of an unergative predicate, the subject of an unaccusative originates in the same position as the direct object of a transitive predicate (cf. *The twig broke* (unaccusative) vs. *The rabbit broke the twig* (transitive)).

However, as Zaenen (1988, 1993) points out in reply, some unaccusatives, particularly verbs of change of state or change of location like *trouwen* ‘get married’, *vallen* ‘fall’, *vertrekken* ‘depart’, *opstijgen* ‘take off’ may be used in this type of construction, but only, she claimed, if they refer to a repeated event. See, for instance, (11a-b):

- (11) a. Van Schiphol **wordt er** de hele dag **opgestegen**.
 ‘Aircraft take off all day from Schiphol.’
 b. In dat hotel heb ik geen oog dicht gedaan, want **er werd** de hele nacht **aangekomen en vertrokken**.
 ‘In that hotel I didn’t sleep a wink because people arrived and departed all night long.’
 (Zaenen 1993: 138, examples (35-36); translations mine)

In contrast, unergatives, in particular verbs denoting activities, e.g. *werken* ‘work’, *dansen* ‘dance’, *fluiten* ‘whistle’, do not necessarily assume an ‘iterative’ reading (12b) in an impersonal passive, since they may also refer to a single event (12a):

- (12) **Er werd hard gewerkt** (door de meisjes).
 a. ‘The girls/One worked hard.’
 b. ‘The girls/One used to work hard.’
 (Zaenen 1993: 131, example (5); translations mine)

In Zaenen's view, the difference between the acceptability of the two classes of verbs in the impersonal passive derives from their distinct aspectual properties. Whereas change of state and change of location verbs are inherently telic, denoting events with natural endpoints, activity verbs are inherently atelic, referring to naturally unbounded events. This is shown by the different types of temporal modifiers they select (see Verkuyl 1972, Dowty 1979, among others): activities naturally occur with durative (*for a time*) adverbials, whereas change of state and change of location verbs combine with punctual (*at a time*) and time-span (*in a time*) modifiers.

However, in impersonal passives with an iterative reading, as in (11a-b) above, inherently telic verbs like *opstijgen* 'take off', *aankomen* 'arrive' and *vertrekken* 'depart' co-occur felicitously with durative, atelic temporal adverbials, e.g. *de hele dag* 'all day long' (11a), *de hele nacht* 'all night long' (11b). According to Zaenen, this indicates that even though the main verb is lexically specified as telic, the iterative event reading triggers an atelic interpretation of the impersonal passive clause. Given that impersonal passives of activity verbs are also atelic, both on a single event reading and on a repeated event reading, Zaenen infers that atelicity is a general condition on the acceptability of impersonal passives.

The telicity restriction on the Dutch impersonal passive stipulated by Zaenen has been endorsed by Goldberg (1995), Carnie and Harley (2005), Abraham and Leiss (2006), Primus (2010a and 2010b), among others, being also formulated independently in Rapp (1997) with respect to the German impersonal passive. However, in this paper, based on the analysis of recently collected data, I show that, contrary to Zaenen's assumptions, Dutch impersonal passives of unaccusatives, in particular change of state and change of location predicates, are not completely barred from a telic, non-homogeneous interpretation, since they are not restricted to what Zaenen names an 'iterative' event reading, that is, to a distributive plural event interpretation.

Furthermore, examining the aspectual properties of impersonal passive clauses and the referential properties of their demoted arguments, I argue against Primus's (2010a and 2010b) claim that the implicit argument of an unaccusative predicate in an impersonal passive is restrained to a bare plural-like reading, which necessarily triggers an atelic, homogeneous interpretation of the clause. Instead, I claim that in impersonal passives of unaccusatives the implicit argument may also assume an "atomic" reading (see Landman 1996, Rothstein 2008a), more precisely a bounded, non-homogeneous group reading, different from the unbounded, homogeneous distributive interpretation characteristic of a bare plural noun. I also argue that the referential properties of the unexpressed argument depend in fact on the aspectual properties of the impersonal construction and not the other way round, as claimed by Primus. This explains, in my view, why a

singular event interpretation of an impersonal passive construction triggers exclusively a singular or a collective, group reading of the implicit argument, as in (6a)-(6b) above, whereas a plural event interpretation allows either a singular or collective reading, or a distributive plural reading of the argument, as in (6c), (7a)-(7c) and (8).

The rest of the paper is organized as follows: In section 2 I argue against the telicity restriction, based on natural data collected from the internet and checked for acceptability with Dutch native speakers. In section 3 I examine the aspectual properties of Dutch impersonal passives of unaccusatives and in section 4 I look into their referential properties. Section 5 concludes.

2. Arguments against the telicity restriction

Empirical evidence from recently collected data (March-May 2010; April 2011) raises doubts with respect to Zaenen's claim that Dutch impersonal passives cannot assume a telic reading. First of all, impersonal passive constructions like the one in (3), repeated below as (13), and the ones in (14)-(16) show that change of state and change of location verbs, e.g. *opstijgen* 'take off', *uitvaren* 'put out to sea', *vallen* 'fall', *trouwen* 'get married', *afreizen* 'set off', *vertrekken* 'depart', *aankomen* 'arrive', are not restricted to an iterative, clause-level atelic reading, since they may also occur in telic constructions, which denote a single event, in (13) through (16). This is shown, among other things, by the felicitous co-occurrence of telic temporal modifiers, e.g. *om 06.00 's morgens* 'at 6 AM' (13), *binnen tien minuten* 'in ten minutes' (14), *toen* 'then' (15), *op woensdag 27 februari* 'on Wednesday, February 27' (16), in these constructions.

- (13) Op woensdag 19 december deden Bob, Danny en Reginald een gasvlucht vanuit het Duitse Gladbeck. De Oostenwind stuurde ons richting Nederland en België. **Er werd opgestegen** om 06.00 's morgens en bijgevolg **werd** twee en een half uur in het donker **gevaren**.
 'On Wednesday, the 19th of December, Bob, Danny and Reginald went on a gas balloon flight from Gladbeck, Germany. The east wind sent us towards the Netherlands and Belgium. Taking off took place at 6.00 AM and consequently we travelled two and a half hours in the dark.'
 (<http://www.ballooning.be/index.asp...>)
- (14) Binnen tien minuten **werd er uitgevaren** met de reddingboten *Watersport* en *Rien Verloop*.
 'Within ten minutes the rescuers put out to sea on the lifeboats *Watersport* and *Rien Verloop*.'
 (<http://www.schuttevaer.nl/nieuws/actueel/nid12226...>)

- (15) Rond km.38 zat ik iets meer achterin het peloton toen **er** vlak voor mijn neus **gevallen werd**.
 ‘At about km 38 I was riding a bit farther in the back of the pack when there was a fall right in front of my nose.’
 (<http://jens-vdb.skynetblog.be/category/983430/1/sport>)
- (16) **Er werd getrouwd** op woensdag 27 februari en vrijdag 29 februari, het was schrikkeljaar, was de opening van de winkel.
 ‘The two got married on Wednesday, February 27, and on Friday, February 29, it was a leap year, the shop opened.’
 (<http://www.visspecialist.nl/content/index.php...>)

Similarly, inherently atelic verbs of manner of motion, e.g. *lopen* ‘walk’, *rijden* ‘ride, drive’, which, in combination with directional adverbials, e.g. *naar een geulen stelsel* ‘to a system of grooves’ (17), *naar de apotheker* ‘to the drugstore’ (18), form compositionally telic verb phrases denoting a change of location, may also occur in impersonal passives with telic interpretation (as in (17) and (18)). This contradicts Zaenen’s claim that, just like change of state and change of location verbs, telic combinations of a manner of motion verb plus a directional adverbial may only occur in impersonal passive constructions with an iterative, atelic reading.

- (17) Anderhalf uur voordat het water zijn laagste punt bereikte **werd er naar eengeulen stelsel gelopen** op zoek naar bot en garnalen.
 ‘One hour and a half before the water reached its lowest level we walked to a system of grooves, looking for flounder and shrimps.’
 (<http://www.radionof.nl/nieuws/laatste-wadden...>)
- (18) ... **er werd** al gauw *naar de apotheker gereden* om melkpoeder te halen, ons Nuna had echt wel honger want ze heeft meteen 90ml gedronken.
 ‘... very soon we drove to the drugstore to get powder milk, our Nuna was really hungry, since she immediately drank 90ml.’
 (<http://users.telenet.be/aerts.tom/UkkieAerts.htm>)

Furthermore, there is empirical evidence that some unergative verbs, either inherently telic, e.g. *scoren* ‘score’, *winnen* ‘win’, or capable of assuming a telic semelfactive reading contextually, when referring to a single event of the kind denoted by the predicate, e.g. *knipogen* ‘wink’, *niesen* ‘sneeze’, *hoesten* ‘cough’, *kloppen* ‘knock’, *tikken* ‘tap’ (see Rothstein 2008b: 182-187), are also allowed to occur in impersonal passive constructions with telic interpretation, as in (19) and (10), repeated below as (20):

- (19) ...binnen twee minuten **werd er gescoord**...
 ‘...in two minutes a goal was scored...’
 (<http://voetbal.kampong.nl/content/view/328>)
- (20) Zacht zei ik tegen het wezentje, “knipoog nu eens naar mama!”. En warempel, **er werd geknipoogd**.
 ‘Softly I told the little creature: “Wink now once to mommy!”. And, truly, there was winking.’
 (<http://www.showbiznewz.nl/index...>)

To conclude, the fact that Dutch impersonal passives containing inherently or compositionally telic predicates, unergatives as well as unaccusatives, may refer to a single bounded event, so they may take a telic interpretation, clearly shows that the impersonal passive construction is not subject to a telicity restriction. In other words, contrary to Zaenen’s claim, it would be wrong to postulate *a priori* a clause-level, iterative, atelic interpretation for every unaccusative predicate that occurs felicitously in an impersonal passive.

In the rest of the paper I relate this fundamental empirical observation to the aspectual and referential properties of Dutch impersonal passives of change of state and change of location predicates, arguing that there is direct relationship between the aspectual interpretation of the impersonal passive clause and the interpretation of its demoted argument.

3. Aspectual properties of Dutch impersonal passives of unaccusatives

Before reviewing the aspectual properties of Dutch impersonal passives, in particular of impersonal passives of unaccusatives, I will first discuss the difference between homogeneous and non-homogeneous event interpretations.

3.1 Homogeneity

Homogeneity is a property of (inherently or compositionally) atelic events, e.g. activities like *walking* or *drawing cats*, which presupposes unboundedness (lack of specific boundaries), divisibility and cumulativity (see Mittwoch 1982, Hinrichs 1985, Krifka 1989 and 1998, Verkuyl 1993, among others). For instance, an event of *walking* can be described as homogeneous, since it is divisible into similar subevents of *walking*. To take a concrete example, if Jan walks from home to the station via the park, then he also walks from home to the park and from the park to the station. On the other hand, the sum of two *walking* events (involving the same participant in the same context, one event immediately succeeding the other) is itself a *walking* event (cumulativity). If Jan walks from the station to the town hall and then he continues walking until he gets to the museum, we can truthfully say that he has walked from the station to the museum.

Likewise, a compositionally atelic event like *drawing cats* is also homogeneous, being both divisible (*drawing cats* is *drawing cat₁* + *drawing cat₂* + ... + *drawing cat_n*) and cumulative (*drawing cats* + *drawing cats* is *drawing cats*). For instance, if it is true that I drew cats for 10 minutes, then it is also true that I drew cats during the first five minutes, as well as during the last five minutes of the interval. Also, if I drew cats for ten minutes and then I continued to draw cats for another ten minutes, then I can truthfully say that I drew cats for twenty minutes.

In contrast, non-homogeneity, characteristic of telic events, e.g. *taking off*, *walking to the station*, *drawing a cat*, presupposes boundedness, non-divisibility and non-cumulativity. For example, one event of *taking off* cannot be divided into two events of *taking off* (non-divisibility). In other words, a fragment of a take-off or an interrupted take-off does not count as a take-off. On the other hand, the sum of two events of *taking off* is not equal to one event of *taking off* (non-cumulativity). For instance, if a plane takes off twice we couldn't truthfully say that the two take-off events are actually two successive stages of one and the same take-off event.

The same can be shown for compositionally telic events, such as *walking to the station* or *drawing a cat*. If Jan is on his way to the station, for instance if he's only got as far as the park, we cannot truthfully say that he has walked to the station. Similarly, although drawing two ears is part of drawing a cat, it wouldn't normally count as drawing a cat. Non-homogeneity, therefore, just like homogeneity, is not necessarily an inherent aspectual property of a verb, since, as we have seen, there are also inherently atelic verbs, such as *walk* or *draw*, which, in combination with a bounded argument, e.g. *to the station*, *a cat*, assume a non-homogeneous interpretation of the predicate (i.e. not at lexical verb level, but rather at verb phrase level).

3.2 Non-homogeneity vs. homogeneity in Dutch impersonal passives

In a Dutch impersonal passive, **non-homogeneity** obtains when a **telic predicate** (be it inherently telic, e.g. *opstijgen* 'take off', *knipogen* 'wink', or compositionally telic, e.g. *naar de bank rijden* 'drive to the bank') refers to **one specific event**, involving a single participant or a group of participants acting as one. For instance, the impersonal passive in (21) – an abridged form of (3) and (13) above – denotes a specific taking-off event, featuring a group of three participants.

- (21) **Er werd opgestegen** om 06.00 's morgens...
'We took off at 6 AM.'

(<http://www.ballooning.be/index.asp...>)

Note that a non-homogenous reading in which **a group of similar events** occur approximately at the same time is also conceivable. In this case, each event involves a different participant (or a different group of participants). This seems to be one of the two possible interpretations of the impersonal passive in (14), repeated here as (22); the other option would be to interpret it as referring to a single event. On the ‘group of events’ reading, the impersonal passive in (22) is taken to denote two (nearly) simultaneous events of putting out to sea, featuring two rescue crews from the same station:

- (22) Binnen tien minuten **werd er uitgevaren** met de reddingboten *Watersport* en *Rien Verloop*.

‘Within ten minutes the rescuers put out to sea on the lifeboats *Watersport* and *Rien Verloop*.’

(<http://www.schuttevaer.nl/nieuws/actueel/nid12226...>)

As different from non-homogeneity, **homogeneity** can obtain in two different ways in a Dutch impersonal passive (as also pointed out by Zaenen, see section 1.2). On the one hand, it may derive **directly from the inherent atelicity of the predicate**, as for instance in (23), which may be taken to denote (a) **a singular event**, involving a group of pupils working together, or (b) **a collection of simultaneous events**, each working event featuring a different participant or a different group of participants.

- (23) **Er wordt gewerkt** in de mediatheek.

‘The pupils are working in the multimedia center.’

(<http://mediatheekcgu.web-log.nl...>) (Picture caption)

On the other hand, homogeneity may also result from **the distributive pluralization of the event**. As shown in section 1.1, the distributive plural interpretation of the event denoted by the predicate is characteristic of **generic readings**, be they habitual or non-habitual (cf. (4b), (7) and (8)). Both **telic predicates**, e.g. *opstijgen* in (24), **and atelic predicates**, e.g. *dansen* in (25), may occur in generic impersonal passives, assuming therefore a distributive plural event interpretation. For instance, (24), which takes a habitual reading, refers to an unbounded series of regularly occurring take-off events, distributed over time, e.g. *het hele jaar door* ‘all through the year’ (in any year), and space, e.g. *vanuit diverse plaatsen in Nederland* ‘from different locations in the Netherlands’. In (25), the impersonal passive conveys a rule on salsa dancing, again presupposing a distributive plurality of events.

- (24) De organisatie van het festival vaart het hele jaar door. **Er wordt opgestegen** vanuit diverse plaatsen in Nederland, waaronder ook diverse plaatsen in de regio Eindhoven.
 ‘The festival organization goes on [balloon] flights all through the year. Taking off takes place from different locations in the Netherlands, including various locations in the Eindhoven area.’
 (<http://www.eindhovenballooning.nl/Welkom.html>)
- (25) **Er wordt gedanst** in rondes met maximaal 6 paren op de vloer.
 ‘One dances in rounds, with at most six pairs on the floor.’
 (<http://www.nksalsa.nl/Pages/Algemeen/...>)

Note that, contrary to Carnie and Harley’s (2005) assumption, the homogeneity that obtains in a Dutch impersonal passive with distributive plural event interpretation is different from the coerced homogeneity characteristic of the progressive reading of a telic predicate. This type of coerced homogeneity obtains, for instance, in a sentence like *John was arriving*, where an achievement predicate, *arrive*, inherently telic, is interpreted as atelic in the presence of the progressive operator BE. In *was arriving*, BE expands the preparation stage of the event, that is, the stage immediately preceding John’s arrival, when he was still on his way to the destination point. In contrast, a distributive plural event interpretation (triggered for instance by a generic operator) does not turn an inherently or compositionally telic predicate into an atelic one; what it does is take the event denoted by the predicate as is and multiply it. This way, the impersonal passive predicate comes to refer to a plurality of telic events.

Therefore, **in impersonal passive clauses with distributive plural event interpretation, homogeneity arises from the distribution of events over time.** As already stated, the events may be marked either as telic or as atelic at verb phrase level: compare (24) and (25). Irrespective of the degree of telicity of the predicate, on a distributive plural event interpretation a chain of successive (and not necessarily contiguous) events is formed. For instance, the impersonal passive in (24) presupposes the existence of a chain of taking off events distributed limitlessly over the time axis. This chain of events is homogeneous, being both divisible and cumulative. For example, the sum of all *the taking off events* referred to by the impersonal passive predicate in (24) can be divided into *the taking off events in 2009 + the taking off events in 2010 + ... the taking off events in YEAR_n* (divisibility). At the same time, if we add *the taking off events in January + the taking off events in February + ... + the taking off events in December* we obtain the same sum as in the denotation of *the taking off events* (cumulativity).

So far we have seen that a generic reading of the Dutch impersonal passive determines the distributive pluralization of the event denoted by the predicate. But there is yet another situation where an impersonal passive predicate takes a

distributive plural event interpretation. This situation occurs when the impersonal passive clause (containing either a telic predicate (26)-(27) or an atelic one (28)) assumes an **episodic iterative reading**, triggered, for instance, by the co-occurrence of a durative, atelic *for a time* modifier, e.g. *de hele nacht* ‘all night long’ (26)-(27), *een uur lang* ‘for one hour’ (28):

- (26) In dat hotel heb ik geen oog dicht gedaan, want **er werd *de hele nacht* aangekomen en vertrokken**.
 ‘In that hotel I didn’t sleep a wink because people arrived and departed all night long.’
 (Zaenen 1993: 138 (36); translation mine)
- (27) Hij zag daarbij inderdaad een geest en **er werd *de hele nacht op zijn raam* getikt**.
 ‘Then indeed he saw a ghost and all night long there was tapping on his window.’
 (<http://www.ambassadedespetitsprinces.be/7.html>)
- (28) ... **er werd *een uur lang* getrommeld** en afwisselend door meisjes en jongens **gedanst**.
 ‘... there was drum playing for one hour and little girls and boys danced in turns.’
 (<http://www.deelos.nl/documenten/...>)

Note that I am using the label iterative here just to indicate that during the interval specified by the aspectual modifier, there occur an indefinite series of events of the kind denoted by the predicate. Crucially, I am not implying at the same time that the same individual or the same group of individuals are involved in all the events. Just like a generic reading, an episodic iterative reading presupposes a homogeneous chain of an indefinite number of events distributed over time, which often do not involve the same participants.

That an episodic iterative reading presupposes the homogeneous distribution of events can be seen, for instance, in (11b), repeated above as (26). Here the chain of arriving and departing events is both divisible and cumulative. More concretely, the events denoted by the impersonal passive construction in (26) can be divided, for example, into *arriving and departing events from 9 to 1* and *arriving and departing events from 1 to 5*. On the other hand, if we added *the events from 9 to 1 to the events from 1 to 5* the result would be the same as in the denotation of the impersonal passive clause: the sum of *the arriving and departing events on that night*.

However, there is a distinction between a generic reading and an episodic iterative reading, which results from the different time span in which the events are distributed on each of these two types of interpretation. Thus, on an episodic

iterative reading the time span in which the events occur is restricted to the interval specified by the durative *for a time* adverbial. For instance, in (26) the events are strictly distributed over the interval denoted by *de hele nacht* ‘all night long’. In contrast, on a generic reading (see (24)-(25) above) the time interval is typically non-restricted.

To sum up, a distributive plural event interpretation obtains when an indefinite number of events of the kind denoted by the predicate are presented as occurring at various sub-intervals either (a) over a specific, limited period of time denoted by a *for a time* modifier (episodic iterative reading) or (b) in general, as a habit or as a rule or tendency (generic reading).

3.3 Concluding remarks

Dutch impersonal passives of unaccusatives may receive two types of aspectual interpretation: non-homogeneous (telic) or homogeneous (atelic). If the impersonal passive construction is interpreted as non-homogeneous (in an episodic context), as in (13) through (18), it may refer either to a singular event or to a group of events. In contrast, if the impersonal passive of an unaccusative is interpreted as homogeneous, it assumes a distributive plural event interpretation, referring to a series of repeatedly occurring events of the type denoted by the predicate (episodic iterative reading), in (26), or to a habit or a general rule or tendency (generic reading), in (24).

4. Referential properties of Dutch impersonal passives of unaccusatives

In this section I examine the referential properties of arguments of impersonal passives of unaccusatives and their relationship with the aspectual properties. Following Rapp (1997) and Primus (2010a and 2010b), I assume that there is a correlation between the aspectual properties of an impersonal passive construction and the referential properties of the (implicit) demoted argument, in particular its degree of homogeneity.

4.1 The influence of aspectual properties on the interpretation of the implicit argument

As often argued in the literature (e.g. by Krifka 1989 and 1998, among others), just like event structures, nominal terms can be either homogeneous (or quantized, i.e. divisible and cumulative) or non-homogeneous (non-quantized, i.e. indivisible and non-cumulative). For instance, the set of individuals denoted by the bare plural noun *cats* is referentially homogeneous, since it is divisible into

proper subsets, each of them denoting *cats*. At the same time, the reference of a bare plural noun is cumulative: *cats* added to *cats* are *cats*. In contrast, the set of individuals denoted by a singular term, e.g. *a cat*, is non-homogeneous, since it is neither divisible into proper subsets, each denoting *a cat*, nor cumulative (*a cat* + *a cat* is not *a cat*). Similarly, nominal terms like *a committee* or *the three cats*, denoting groups of individuals, are also non-homogeneous, being neither divisible nor cumulative (*three cats* minus *a cat* is not *three cats*; *three cats* + *a cat* is also different from *three cats*).

In impersonal passives of (inherently or compositionally) telic predicates (and in fact in all types of impersonal passives), **the referential properties of the implicit argument depend on the aspectual interpretation of the clause** in which they occur (not the other way round, as claimed by Primus, who derives the telicity restriction from the “referential demotion” of the implicit argument). Evidence for my contention comes from the way the interpretation assumed by a bare plural noun in an active construction is influenced by the aspectual properties of the clause it belongs to.

Bare plural nouns, e.g. *cats*, *children*, *guests*, exhibit a variation in their interpretation which is quite similar to the variation between the group reading and the distributive plural reading of the implicit argument of a Dutch impersonal passive (see (6b), (7b) vs. (6c), (7c) in section 1.2). Whereas in a non-homogeneous, telic context a bare plural is interpreted non-homogeneously, as group, when it occurs in a homogeneous, atelic environment the same noun receives a distributive, homogeneous reading. For instance, the bare plural noun *guests* takes a collective interpretation (‘a group of guests arrived...’) in (29a), which refers to a single telic event, but it is interpreted distributively (‘guests₁ arrived, then guests₂ arrived, then guests₃ arrived ...’) in (29b), which refers to a distributive plurality of events (see Rothstein 2008a).

- (29) a. Guests arrived *in a few minutes*.
b. Guests arrived *for hours*.

(Rothstein 2008a: 61, examples (30a) and (31a))

According to Rothstein (2008a), with naturally atomic (that is, telic) predicates, such as the achievement verb *arrived*, the presence of a telic *in a time* modifier (*in a few minutes*) guarantees the collective, group reading of the bare plural argument (29a). In contrast, in sentences like (29b), where the atelic *for a time* modifier (*for hours*) triggers the pluralization of the inherently telic event, the bare plural argument receives a distributive reading.

The reason why in the telic environment in (29a) the bare plural noun is barred from its natural distributive plural reading and has to assume a group reading is that this telic predicate refers to a singular event. As argued by Landman (1996), singular, atomic events can only take atomic arguments, that is,

arguments that denote either a singular individual or a group of individuals (“atomic” refers here to minimal elements of the relevant kind). Groups are allowed to occur as arguments of predicates that refer to a singular event because, like singulars and unlike distributive plurals, they are “atomic individuals in their own right” (Rothstein 2008a: 67).

This means, in Landman’s view, that sums of individuals, including those denoted by bare plural nouns (on their most natural, distributive reading), have to go through a group forming operation before they can act as arguments of singular events. The group forming operation, which may be triggered implicitly or explicitly, e.g. in the presence of *as a group*, shifts the interpretation of the argument, e.g. *guests* in (29a), from denoting a sum of the individual guests to denoting a group of guests. This shift in interpretation reflects the fact that the group behaves just as a single individual, i.e. *a guest*, participating in a singular event.

It is therefore the event structure of a predicate which determines the interpretation of its argument and not the other way round. For the analysis of Dutch impersonal passives, this means that the so-called “referential demotion” of the implicit argument on its distributive, bare plural-like reading cannot be the trigger of a homogeneous, atelic event interpretation of the impersonal passive clause, as Primus claims. In fact, the distributive plural reading of the implicit argument is itself conditioned by a distributive plural event interpretation of the impersonal passive construction, which, as we saw in section 3, can obtain either on a generic reading or on an episodic iterative reading.

4.2 Implicit arguments of Dutch impersonal passives of unaccusatives

The fact that, by definition, singular events can only take atomic arguments explains why impersonal passives denoting **a single event**, e.g. *taking off* (3), *driving to the drugstore* (18), *winking* (10), select implicit arguments that refer to **an individual or to a group of individuals acting as one**. As already stated in section 1.1, a plural reading of the implicit argument is assumed by default by Dutch hearers, unless the context makes it unambiguously clear that a single individual is involved in the event – see, for instance, (10). This default plural interpretation of the implicit argument may be a group reading, if the impersonal passive construction refers to a singular, atomic event, or a distributive reading, if the impersonal passive refers to a plurality of events.

The same principle, according to which singular events take atomic arguments, whereas plural events take plural arguments, explains why, when an impersonal passive denotes **a group of (nearly) simultaneous events** (on an episodic reading (6iii)), **each of these events is understood to involve either a singular individual or a group of individuals**. For instance, as shown in section

3.2, the impersonal passive in (14)/(22), repeated below as (30), refers on one of its possible readings to two (nearly) simultaneous events of putting out to sea, involving two rescue crews (two groups), each on a different boat. Note that the two groups of individuals make up together a plural argument, as requested by a predicate denoting a plurality of events.

- (30) Binnen tien minuten **werd er uitgevaren** met de reddingboten *Watersport* en *Rien Verloop*.
 ‘Within ten minutes the rescuers put out to sea on the lifeboats *Watersport* and *Rien Verloop*.’
 (<http://www.schuttevaer.nl/nieuws/actueel/nid12226...>)

In impersonal passives with a **distributive plural event interpretation** (on a generic reading or an episodic iterative reading – see section 3.2) the argument may be interpreted either as referentially non-homogeneous (atomic), denoting a **singular individual or a group of individuals**, e.g. ‘we’ (31), or as referentially homogeneous, similar to a **bare plural noun on a distributive reading**, e.g. ‘aircraft’ (11a), ‘balloons’ (24), ‘people’ (25), (26), (32).

- (31) **Er wordt uitgegaan** van 3 broodjes per persoon.
 ‘We calculate starting out from three bread rolls per person.’
 (<http://www.degoudenhelm.nl/horeca/pdf...>)
- (32) “**Er wordt ’s nachts veel gestorven**,” zegt organisator Marcellino Bogers.
 “Maar het symposium gaat niet alleen maar over de nadelen van het nachtwerk.”
 “A lot of patients die at night,” says Marcellino Bogers, one of the organisers.
 “But the conference really doesn’t only deal with the disadvantages of night work.”

(<http://www.trouw.nl/krantenarchief/1998/...>)

4.3 Concluding remarks

The referential properties of arguments of impersonal passives of unaccusatives depend on the type of interpretation assumed by the construction in which they occur. Non-homogeneous impersonal passives denoting a single event select arguments that refer to a singular individual or a group of individuals, while non-homogeneous impersonal passives denoting a group of events select arguments with distributive plural reference. In turn, homogeneous impersonal passives of unaccusatives may select either singular/group or distributive plural arguments, on both a generic reading and an episodic iterative reading.

Since a singular reading of the argument is generally more marked than a plural reading, Dutch hearers tend to interpret implicit arguments as plurals by default, unless the context leads them towards a singular interpretation.

5. Conclusions

As shown by empirical evidence in section 2, contrary to Zaenen's (1988 and 1993) claim, impersonal passives of change of state and change of location predicates (unaccusatives) are not subject to a telicity restriction, since, just like impersonal passives of other telic predicates, they may assume a non-homogeneous (telic) interpretation, which typically refers to a single event. Moreover, when an unaccusative occurs in a non-homogeneous impersonal passive, its implicit argument takes an atomic reading (referring to a singular individual or to a group of individuals). This goes against Primus's (2010a and 2010b) contention that implicit arguments of unaccusatives can only take a (distributive) bare plural-like reading, which necessarily triggers a homogeneous, distributive plural interpretation of the impersonal passive clause.

Interestingly, some unaccusatives, such as *opstijgen* 'take off', *uitvaren* 'put out to sea', *afreizen* 'set off', *vertrekken* 'depart', *aankomen* 'arrive', *opstaan* 'wake up', *naar school lopen* 'walk to school', *trouwen* 'marry', *vallen* 'fall', etc. may occur in homogeneous (atelic) impersonal passives, as well as in impersonal passives with non-homogeneous (telic) interpretation, whereas other unaccusatives, e.g. *sterven* 'die', are restricted to a homogeneous, distributive plural event interpretation, as in (32) above. Consider for instance the following constructed example, checked for acceptability judgments with Dutch native speakers, which shows that *sterven* 'die' cannot be used felicitously in an impersonal passive with a simple episodic reading, referring to a single event.

- (33) ***Er werd gestorven** in een auto-ongeluk in Parijs, 's ochtends om 9.15 uur op 16 januari 2005.

'They died in a car crash in Paris, at 9 AM on January 2005.'

Since, as we have seen, a whole series of Dutch unaccusative predicates may be employed in impersonal passive constructions with telic interpretation, I conclude that the acceptability of a predicate in a Dutch telic impersonal passive construction does not depend on whether the predicate has unergative, rather than unaccusative behaviour, e.g. in the perfective auxiliary selection test. Rather, this acceptability seems to depend on other factors, which still need to be investigated, including, perhaps, the degree of intentionality and control (as also suggested by

Zaenen), which happens to be much lower with a verb like *sterven* ‘die’ than with verbs like *vertrekken* ‘depart’, *opstijgen* ‘take off’, *trouwen* ‘marry’.

However, other factors may be involved here, too. Think for instance of the impersonal passive construction in (15), repeated as (34), in which the unaccusative verb *vallen* ‘fall’ is used to refer to a falling event during a cycling race, a context in which falling is common, though certainly unwanted, and typically involves a whole group of participants.

- (34) Rond km.38 zat ik iets meer achterin het peloton toen er vlak voor mijn neus **gevallen werd**.

‘At about km 38 I was riding a bit farther in the back of the pack when there was a fall right in front of my nose.’

(<http://jens-vdb.skynetblog.be/category/983430/1/sport>)

Further research into the distribution of unaccusative predicates in Dutch impersonal passives will certainly have to address all these issues.

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