Event-structure and individuation in impersonal passives

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Abstract: This paper discusses the event-structural effects of suppressing the subject argument in impersonal passives in several languages, including German, Dutch, and Turkish. Corpus data partially support earlier assumptions that the situation denoted by impersonal passives is a homogeneous, e.g. atelic, event. Contrary to some of the earlier proposals, telic (or unaccusative) verb lexemes can be used in the impersonal passive if they are forced into event-structural homogeneity. I will attempt to derive this event-structural restriction from the referential demotion of the subject argument. In this view, the telicity restriction is not a strict independent constraint but rather an epiphenomenon of the referential non-individuation of the argument undergoing a change of state.

1. Introduction

In this paper I shall consider the event-structural effects of suppressing the subject argument in impersonal passives in several languages, including German, Dutch, and Turkish. In this kind of construction, an intransitive, i.e. mono-valenced verb is passivized. Since the only semantic argument of such verbs is syntactically suppressed in passivization, the resulting pattern lacks any syntactic argument. (1)–(3) are examples of impersonal passives from German, Dutch, and Turkish, which are supplemented with a morpheme-based transliteration in order to show how impersonal passives are formed in the languages under discussion. The subsequent examples from German and Dutch will not be transliterated.

(1)  German
Es wurde viel ge-arbeitet.
EXPL become:3SG.PRT much PTCP-work-PTCP
‘There was much working.’

(2)  Dutch (Perlmutter 1978: 168)
Hier wordt (er) veel ge-werkt.
Here become:3SG.PRS EXPL much PTCP-work-PTCP
‘It is worked here a lot.’

(3)  Turkish (Perlmutter 1978: 176)
Burada çalıs-ul-ur.
here work-PASS-AOR.3SG
‘One works here.’

As there are no impersonal passives in English, the translations that are usually provided in the literature use different other – sometimes stylistically awkward – constructions. In German and Dutch, an expletive such as Ger. es and Dutch er may be inserted, as shown in (1) and (2). In Turkish there is no expletive.

Impersonal passives have been extensively discussed in connection with the distinction

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2 A broader view on impersonal passives includes constructions with an oblique argument instead of a nominative subject, e.g. Ger. ihm (he-DAT) wurde geholfen ‘he was helped’. Such constructions will not be considered here because the semantic restriction under discussion is most clearly manifest in passive clauses that lack an overt syntactic argument altogether.
between unergative and unaccusative (or ergative) verbs. Unaccusative verbs are assumed to denote a telic event, to select the auxiliary ‘be’ instead of ‘have’ in perfect tenses in languages that have this auxiliary distinction, to lack an agentive subject and to be unacceptable in impersonal passives. While the passivization of the unergative verbs in (1)–(3) above is fully acceptable, the Dutch, German, and Turkish examples in (4)–(6) are considered to be unacceptable by Perlmutter (1978) and by Perlmutter and Postal (1983), among others:

   a. *In dit weeshuis wordt (er) door de kinderen erg snel gegroeid.
      ‘In this orphanage the children grow very fast.’
   b. *In dit ziekenhuis wordt (er) door de patienten dikwijls gestorven.
      ‘In this hospital the patients often die.’

(5) German (Perlmutter and Postal 1983: 112)
   a. *In diesem Krankenhaus wird oft gestorben.
      ‘In this hospital one often dies.’
   b. *Bei solchen Krankheiten wird fast nie geblutet.
      ‘In the case of such diseases one almost never bleeds.’

(6) Turkish (Perlmutter 1978: 177):
      ‘One often falls on (top of) the ice.’
   b. *Bu yetimhane-de çabuk büyü-n-ür.
      ‘One grows up fast in this orphanage.’

In Perlmutter’s and Postal’s Relational Grammar approach, the unacceptability of unaccusative predicates in impersonal passives is explained in purely syntactic terms by the application of independently motivated universal syntactic principles. However, other approaches have tried to detect semantic constraints on impersonal passives. As typical unaccusative verbs share two semantic characteristics, namely telicity and lack of agentivity, semantic passivization constraints relating to either of these factors are found in the literature. Keller and Sorace (2003) and Zaenen (1993), among others, claim that agentivity (specifically protagonist control for Zaenen) is the restricting factor. This claim is supported by unergatives that cannot passivize, on the one hand, and by unaccusatives that may be used in the passive, on the other hand. Zaenen mentions unergative verbs denoting non-agentive processes, such as *er werd gebloed ‘there was bleeding’ in Dutch (cf. also (5b) in German), which, in her view, are barred from passivization. Keller and Sorace point to some unaccusative verbs selecting sein ‘be’ in German, such as flüchten ‘flee’ and kriechen ‘creep’, which are highly acceptable in the passive if they imply an animate agentive subject. In their extensive empirical study, acceptability judgements show little interaction between lexical telicity and passivization in German. As for Turkish, it is claimed that only verbs selecting a [+human] argument are allowed in impersonal passives, while agentivity does not matter (e.g. Özkaragöz 1980, Knecht 1986, Biktimir 1986). This view is also defended for German, among others, by Rapp (1997). We will return to the agentivity constraint in section 2 of this paper.

A great number of studies argue for telicity (or perfectivity) as the crucial semantic constraint on impersonal passives (e. g. Goldberg 1995, Rapp 1997, Engelberg 2000, Carnie

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and Harley 2005, Abraham and Leiss 2006). All these studies use a concept of telicity (or perfectivity) that is broad enough to accommodate a discernible change of state of the object or subject argument. Using an alternative terminology, telicity in this broad sense refers to a lexically or contextually determined inhomogeneous event structure with at least two distinguishable phases. Such event structures are non-divisible and non-cumulative (cf. Krifka 1989, Rothstein 2004, among others). In an inhomogeneous event structure, parts of the event denoted by the verb phrase are not the same as the whole activity (non-divisibility); cumulating the event denoted by the verb phrase does not yield the same event (non-cumulativity). E.g., parts of the event denoted by John read a book cannot be described by John read a book; adding the event denoted by John read a book from 1pm to 2pm to the temporally adjacent event denoted by John read a book from 2pm to 3 pm does not yield the singular event John read a book from 1pm to 3pm. By contrast, the event structure of atelic events is homogeneous. If one ignores minimal parts, i.e. the basic movements that activities such as pushing a cart and dancing are made of, any part of the activity denoted by John pushed a cart is pushing a cart and any part of the activity denoted by John danced is dancing (divisibility). Adding dancing from 1pm to 2pm to dancing from 2pm to 3 pm yields a single event of dancing from 1pm to 3pm (cumulativity). Cumulativity also holds for the activity of pushing a cart.

Telic predicates are events of change (cf. Rothstein 2004, among others). The lack of cumulativity is explicable by the fact, that two singular events in the denotation of a predicate of change (with the same participants) cannot be immediately temporally adjacent to each other, since a change from $\alpha$ to $\neg\alpha$ cannot be immediately followed by another change from $\alpha$ to $\neg\alpha$ without an intermediate event of change from $\neg\alpha$ back to $\alpha$ (cf. Rothstein 2004). In most telic events, the last phase is a specific or unspecific state resulting from a process phase entailed or presupposed by the verb phrase meaning. Thus, for example, dying (German sterben, Dutch sterven) implies a specific change of state. German bleiben and Dutch blijven ‘remain, stay’ imply a resulting lexically unspecified state that is the same as the presupposed state (Dowty 1979: 75). In other words, the meanings of sterben / sterven and bleiben / blijven imply a partitioning of the situation. This event-structural property triggers the perfect auxiliary sein / zijn ‘be’ in Dutch and German. This explains why sterben / sterven and bleiben / blijven are used with the auxiliary sein / zijn ‘be’. By contrast, homogeneous events, denoted by verbs such as German tanzen and Dutch dansen ‘dance’, cannot be divided in distinct phases and do not denote changes. Such verbs are unergative and select the perfect auxiliary haben ‘have’ in German and hebben ‘have’ in Dutch.

The event type of a clause is mirrored by the type of time adverbial that is chosen to express the duration of the event. Time span adverbials such as in three days are incompatible with an homogeneous (atelic or imperfective) interpretation, while durative adverbials such as for three days are incompatible with inhomogeneous (telic or perfective) interpretation. This is illustrated by the unaccusative verb sterben ‘die in (7a) and the unergative verb tanzen ‘dance’ in (7b) respectively.

(7) a. Sie starb in drei Tagen / #drei Tage lang.  
‘She died in three days / #for three days.’

b. Sie tanzte drei Tage lang / #in drei Tagen.  
‘She danced for three days / #in three days.’

4 The event-structure of German bleiben and Dutch blijven ‘remain, stay’ shows that event-structural homogeneity and partitioning do not coincide (cf. Engelberg 2000: 56). These verbs are atelic, i.e. event-structurally homogeneous, and biphasic. The event-structural homogeneity is explicable by the fact that the two phases refer to the same state. For ease of exposition, since telicity is the most widely used term, I will often use the terms telic or inhomogeneous instead of biphasic. The same holds for the terms atelic or homogeneous instead of the rarely used term monophasic.
In this paper, the double cross # is used to indicate unacceptability of form-meaning-pairs given the reading under consideration. The anomaly indicated in (7a, b) refers to a singular, i.e., non-frequentative event reading and to an interpretation of the time adverbial as referring to the interval of time in which the event occurred. Note that in three days may be used with a homogeneous event such as dance in (7b), but only in the inchoative interpretation that the dancing event started after three days.

Degree achievements, such as denoted by German wachsen and Dutch groeien ‘grow’ or by German sinken and Dutch zinken ‘sink’, are more difficult to grasp by the above-mentioned homogeneity criteria (Dowty 1979: 88f.; Rothstein 2008: 190f.; Kennedy & Levin 2008). Arguably, any proper subpart of growing is growing and any subpart of sinking is sinking. This criterion suggests that these verbs are monophasic (atelic). Nevertheless, these verbs select sein / zijn. This is explicable by the fact that they denote a change. However, this change cannot be characterized as a change from a to ¬α, but rather as a relative change in values on a scale. Adverbial modification is inconclusive in these cases. These verbs are compatible with adverbials such as viel ‘a lot’ and zwei Wochen lang ‘for two weeks’, which are an indicator of homogeneity. But they are also compatible with adverbials such as in zwei Wochen ‘in two weeks’, which point to inhomogeneity. See (8a)–(8c), where ist gewachsen ‘grew’ is contrasted with ist gestorben ‘died’:

(8)  

a. Das Kind ist in den letzten zwei Wochen gewachsen / gestorben.  
   ‘The child grew / died in the last two weeks.’

b. Das Kind ist viel gewachsen / gestorben.  
   ‘The child grew a lot / died a lot.’

c. Das Kind ist zwei Wochen lang gewachsen / gestorben.  
   ‘The child grew for the last two weeks / died for the last two weeks.’

The inconclusive behaviour of degree achievements such as grow may be due to the fact they denote gradual changes (e.g. become bigger for grow) that are bound to culminate in a specific state (e.g. become big). This means that their cumulativity is restricted. E.g., adding the last phase of growing to growing does not yield getting bigger but, rather, the resulting state of being big (or grown up). Due to pragmatic strengthening, this stronger interpretation is a default implicature (cf. Kennedy and Levin 2008).

2. The event-structural constraint under closer scrutiny

Let us return to impersonal passives and take a closer look at the behaviour of unaccusative verbs. Under closer scrutiny, impersonal passives cannot be used to distinguish between unaccusative and unergative verb lexemes, as assumed in some studies (e.g. Perlmutter 1978, Perlmutter and Postal 1983). The reason is that unaccusative verbs can be used in impersonal passives under the condition that the above-mentioned language-specific agentivity or animacy restriction is fullfilled. Examples with passivized unaccusatives verbs that are offered in the literature are (9)–(11):

(9)  

a. *Er werd opgestegen.  
   ‘There was taking off.’

b. Vanaf Schiphol wordt er de hele dag opgestegen.  
   ‘From Schiphol it is taking off the whole day.’

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'From Schiphol (airport) there is taking off the whole day.'

(10) German (Rapp 1997: 152)
a. In Bosnien wird weiter gestorben.
   'In Bosnia dying is going on.'
b. In seinen Vorlesungen wird reihenweise eingeschlafen.
   'In his lectures falling asleep occurs in a row.'

(11) Turkish (Özkaragöz 1980: 418)
a. En çok Mart ay-in-da ölünür
   Most March month-POSS-LOC die-PASS-AOR.3SG
   'It is died most in the month of March.'
b. Bu göl-de boğul-un-ur.
   thislake-LOC drown-PASS-AOR.3SG
   'In this lake, it is drowned.'

One crucial observation has been neglected in the pertinent literature: passive clauses with unaccusative verbs are not interpreted according to the basic event-structural meaning of the verb lexeme. Recall that unaccusative verbs have a biphasic event-structure and that most of them are also telic. However, if they are used in the passive, as in (9)–(11) above, they are not interpreted as denoting a singular biphasic event (see section 3 for further qualifications). Instead, they are coerced to denote monophase (i.e. atelic) events. Event-structural coercion is obtained by pluralizing the event, i.e., by a habitual or iterative interpretation, or by modalizing it, i.e., by a generic or dispositional interpretation. A habitual interpretation is based on a generalization over actually recurring events; a generic or dispositional reading expresses what individuals or objects can do or are designed to do (cf. Scheiner 2003). All these types of coerced interpretations describe atelic, event-structurally homogeneous situations that do not denote a change (cf. among others, Scheiner 2003).

In view of the event-structural homogeneity of passivized unaccusative verbs, one has to address the question whether unaccusative verbs are lexically biphasic or only underspecified. The criterion of auxiliary selection (‘be’ instead of ‘have’) in German and Dutch suggests that the verbs in (9)–(10) are lexically biphasic. As noted in the pertinent literature, auxiliary selection is to a great extent a lexical matter. Thus, for instance, an atelic variant of (10a) in the perfect tense of the active voice selects the auxiliary sein ‘be’ instead of ‘have’: Menschen sind in Bosnien massenweise gestorben ‘People died by the score in Bosnia’. Similarly for the Dutch example (9a) if it is turned into the active voice in the perfect tense: Hij is dagelijks opgestegen ‘It took off daily’. Furthermore, some particle verb compounds denoting a repetitive atelic movement such as herumlaufen ‘run / walk around’ in German preserve the auxiliary sein ‘be’ selected by the verbal head laufen ‘run, walk’. In sum, auxiliary selection suggests that the unaccusative verbs under discussion have a lexically specified inhomogeneous event structure. Consequently, the homogeneous reading in the impersonal passive is obtained by event-structural coercion, i.e. shifting the lexical event type to the event type imposed by contextual information (Pustejovsky and Bouillon 1996).

The event-structural shift of passivized unaccusative verbs explains why they are often accompanied by adverbials that ensure a repetitive reading, such as de hele dag ‘the whole day’ in (9b), weerder ‘more, continuing’ in (10a) and reihenweise ‘serial, in a row’ in (10b) above. In Turkish, unaccusative passivized verbs tend to occur in the aorist, as shown in (11a, 11b).
b). The aorist indicates that a situation is not at the level of any specific occurrence but rather that it is part of a recurrent pattern, which is shown as ongoing at the temporal reference point (van Schaik-Rădulescu 2009). This means that the aorist facilitates the event-structural shift of passivized unaccusative verbs.

The event-structural shift from lexical inhomogeneity (telicity) to clausal homogeneity (atelicity) is illustrated in (12a)–(12b) by the acceptability vs. unacceptability of the time span adverbial in the readings given in the translations (but consider the qualifications made in section 3 below).

(12) a. Sie starb hier innerhalb von drei Tagen.
   ‘She died here within three days.’
b. Hier wurde innerhalb von drei Tagen gestorben.
   ‘Dying went on here within three days.’

A wider array of unaccusative verbs in impersonal passives is attested in my corpus. All of them illustrate the above-mentioned event-structural shift. The Dutch and Turkish data are taken from the internet. The German data were taken from the Kosmas-II-corpus of daily newspapers (e.g. Mannheimer Morgen) and from the internet. The following corpus examples were judged as acceptable by native speakers.

German

(13) Unserer Gesellschaft wird vorgeworfen, den Tod und das Sterben zu tabuisieren. Gestorben wird meistens im Krankenhaus. Nachbarn fragen sich erst nach einiger Zeit, wo eigentlich die alte Dame aus dem Nachbarhaus geblieben ist. (Mannheimer Morgen)
   ‘Our society is being accused of tabooing death and dying. Dying happens mostly in hospitals. Neighbours are wondering only after a while where the old lady in the neighbour’s house has gone.’

(14) Gewachsen wird nachts. Lange Zeit hielten Ärzte die Klagen von Kindern über Wachstumsschmerzen für jugendliche Hypochondrie [...] Aber warum [...] jammern Kinder vor allem nachts, dass ihnen die Beine schmerzen? (Der Spiegel 10/2005)
   ‘Growing occurs at night. For a long time, doctors have thought that children complaining about pain caused by growing are adolescent hypochondriacs. [...] But why [...] do children complain mainly at night that their legs are aching?’

(15) Hauptunfallort der Pausenunfälle ist der Schulhof, auf dem gestürzt, gestolpert und hingefallen wird. (Internet)
   ‘The main place of accidents during recess is the schoolyard, where there is tumbling, scuffling, stumbling, and falling down.’

(16) dass nicht selten erst dann zum Arzt gegangen wird, wenn sich bereits Schäden am Lungengewebe, ja am Herzen entwickelt haben. (Mannheimer Morgen)
   ‘that going to the doctor not infrequently only occurs when the lung tissue, even the heart have been already damaged.’

Dutch

(17) Wat zegt de bijbel over leven en sterven? [...] Dat er zo voortijdig gestorven wordt.
‘What does the bible tell us about living and dying? [...] That dying comes too soon.’

(18) dan spoeden wij ons tuinwaarts om te zien hoe schitterend er ook zonder onze aanwezigheid gegroeid en gebloed wordt.
‘then we hurry toward the garden to see how wonderfully things are growing and blooming even in our absence.’

(19) Klemmen, te bevestigen onder elk soort schoen, om te voorkomen dat op ijs uitgegleden wordt.
‘Clamps that can be attached under any kind of shoe, in order to prevent that there is slipping on ice.’

(20) Deze zullen via Rhenen (Grebbeberg-Bergweg-Defensieweg) nog worden uitgebreid, zodat moe maar zeker voldaan in Veenendaal wordt aangekomen.
‘These will be extended through Rhenen (Grebbeberg-Bergweg-Defensieweg), so that arriving tired in Veenendaal will happen, but with a good sense of accomplishment.’

Turkish
(21) Damar-lar sık-il-ır, yürek şiddet-le çarp-ar,
artery-PL constrict-REFL-AOR, heart strength-with bump-AOR,
ölü gibi sarar-ı-l-ır
dead like turn.yellow-PASS-AOR
‘The arteries get constricted, the heart bumps violently, one turns yellow like dead.’

(22) Ne kadar büyü-n-ür? Kim-ler büyü-r? Nasıl büyü-n-ür?
How much grow-PASS-AOR who-PL grow-AOR how grow-PASS-AOR
Nereye kadar büyü-n-ür?
Whither grow-PASS-AOR
‘How much growing? Who grows? How growing? Whither growing?’

For German, the telicity restriction was tested by an acceptability judgement test conducted with 82 students from the University of Cologne. The distinctive feature of this experiment in contrast to others (e.g. Keller & Sorace 2003) was that it provided a context for impersonal passives. The crucial test items were manipulations of corpus attestations and had an atelic, mostly frequentative reading, as attested in the corpus. Compare, for instance, the corpus attestation in (15) above with one of the test items in (23):

(23) Hauptunfallort der Pausenunfälle ist der Schulhof, auf dem man miteinander raufen und um die Wette laufen kann. Hingefallen wird dann auch dementsprechend oft.
‘The main place of accidents during recess is the schoolyard, where one can fight with one another and compete with one another in running. Falling down accordingly often happens.’

In order to keep word order in passive clauses constant, an order with a fronted past participle was chosen. This marked order is often in my corpus due to the limited search options. The search tools for the available large corpora cannot detect passives with a discontinuous position of the auxiliary and the past participle. Therefore, only adjacent pairs were collected in my corpus. One of the options is a main clause with a fronted participle, as in (23), the
other option is an embedded clause with a final verb cluster, as in (15) above. The main clause option with the fronted participle was chosen for all experimental passive items. The critical items were six non-volitional telic (typical unaccusative) verbs: *ausrutschen* ‘slip’, *einschlafen* ‘fall asleep’, *hinfallen* ‘fall down’, *sterben* ‘die’, *stürzen* ‘fall’, and *wachsen* ‘grow’. The control items were six passives formed of volitional atelic verbs and six passives of non-volitional atelic verbs. The volitional atelic (typical unergative) verbs were *grübeln* ‘muse, cogitate’, *kritzeln* ‘scribble’, *lachen* ‘laugh’, *rauchen* ‘smoke’ *schunkeln* ‘sway with linked arms’, and *tanzen* ‘dance’. The non-volitional atelic verbs were *bibbern* ‘shudder’, *gähnen* ‘yawn’, *niesen* ‘sneeze’, *schnarchen* ‘snore’, *schwitzen* ‘sweat’, and *träumen* ‘dream’. The 18 passive items and 18 simple non-passivized filler sentences were presented in random order. The order of presentation was reversed for one half of the subjects (version A vs. B) in order to test whether or not the subjects got used to impersonal passives. The subjects were asked to judge the acceptability of each item on a five-point scale from A (fully acceptable) to E (unacceptable). The subjects were instructed not to judge the plausibility of the item’s content but only the way it is expressed. Figure 1 shows the average acceptability rates for the critical items (non-volitional & telic) compared to the two types of control items (volitional & atelic, non-volitional & atelic) and to the fillers. The acceptability value A (fully acceptable) was interpreted numerically as 5, E (unacceptable) was transformed into 1.

A multi-factor variance analysis for the four types of items (3 verbtypes plus fillers, called VERBTYPE for convenience) and the two VERSIONS A vs. B (4 x 2 factorial variance) showed a significant main effect for the the factor VERBTYPE (F(3,240) = 122.88; p<0.001; partial $\eta^2 = 0.606$). The inverse order of presentation (VERSION A vs. B) played no role (F(1,80) = 0.0; p>0.995; partial $\eta^2 = 0.000$). The VERBTYPES show pairwise highly significant differences in t-tests. Leaving the fillers apart, the average acceptability of the three groups of passivized verbs decreases significantly. The volitional atelic (typical unergative) verbs reach the highest average acceptability (3,91). They are followed by the non-volitional atelic verbs (3,70). The lowest average acceptability is found with the non-volitional telic (typical unaccusative) verbs (3,33). Nevertheless, even these items can be classified as acceptable. In sum, both volitionality and telicity play a role in impersonal passives in German. With typical unaccusative (non-volitional, telic) verbs, these factors co-occur. This may explain their lowest acceptability rank. These factors show up only in language performance, not in grammar. Their effect (even in conjunction) is not strong enough to turn an impersonal passive ungrammatical.

Let us sum up the empirical findings. Factors related to agentivity (volitionality) and telicity play a role in impersonal passives. The volitionality restriction will not be discussed further, since it is not directly relevant to the explanation of the event-structural constraint that is the topic of this paper (cf. Primus, in press, for animacy and agentivity in impersonal passives). Despite critical views, the event-structural constraint has turned out to be very robust. Intransitive verb lexemes that denote biphasic (telic) events, which have been classified as unaccusative in past research, do not refer to a singular biphasic (telic) event in the passive construction. If they are used in the passive, they are coerced to denote monophasic (atelic), homogeneous events (but see the qualification made in section 3 below). Event-structural coercion is obtained by pluralizing the event, i.e. by a habitual, repetitive interpretation, or by modalizing it in a generic or dispositional interpretation. These readings have monophasic (atelic), i.e. homogenous event-structures. An acceptability test conducted for German corroborates the corpus findings. There is a reliable effect of the event-structure of the verb lexeme on the acceptability of impersonal passives. However, this effect shows up
only in language performance, not in grammar. This result is compatible with the coercion hypothesis. Sentences involving event-structural coercion are judged grammatical but lead to an increased processing cost (cf. Pykkänen / McElree 2006). The next section is devoted to an explanation of this event-structural constraint on impersonal passives.

3. Event-structure and referential demotion

I would like to propose that event-structural homogeneity with unaccusative verbs is obtained in a way analogous to what has been observed with respect to the impact that uncountable nominals have on event-structural interpretation. A well-studied case is the interaction between the meaning of verb lexemes that select an incrementally affected theme, such as *read*, *eat*, and *write*, and the referential property of the theme argument.\(^\text{7}\) This is illustrated in (24):

\[
\begin{align*}
(24) \quad & \text{a. Peter wrote a poem in five hours / } \#\text{for five hours.} \\
& \quad \text{‘Within five hours Peter accomplished the writing of a poem.’} \\
& \text{b. Peter wrote poems } \#\text{in five hours / } \text{for five hours.} \\
& \quad \text{‘Peter was engaged five hours in writing poems.’}
\end{align*}
\]

In the intended reading, the action denoted by the verb phrase is taking place within the time interval denoted by the adverbial. As indicated by the different time adverbials, (24a) describes a telic event, while (24b) denotes an atelic event. This event-structural difference is triggered by the referential property of the theme argument. The indefinite countable argument in (24a) is responsible for the telic reading, the plural uncountable argument in (24b) determines an atelic reading.

Krifka (1989, 1998) explains the interaction between the event type of the verb phrase and the reference type of the semantic role *incremental theme* as follows. For verbs that select an incremental theme, Krifka assumes a homomorphism relation between the time-reference property of the event and the referential property of the theme argument. As mentioned above, telicity implies an inhomogeneous event structure. By contrast, the event structure of atelic events is homogeneous. A similar homogeneity distinction is found in the domain of nominal reference. Collective terms, bare plurals, and mass terms are referentially homogeneous: Leaving the level of minimal parts aside, any part of water is water and any part of the plural notion of books is books (divisibility); adding water to water yields water and similarly for books (cumulativity). Individuated terms such as *a book* are inhomogeneous: parts of a book cannot be referred to as *a book*, and similarly for *the book* and *three books*. Such nominal terms are quantized (following Krifka 1998) or individuated (following Carlson 1998) and are distinguished from non-quantized or non-individuated nominal terms such as bare plurals, collective nouns, and mass nouns.

Returning to incremental themes, the event type of verb phrases with incremental themes is determined by the referential property of the theme argument: telic (i.e. temporally inhomogeneous) interpretation arises with individuated (i.e. referentially inhomogeneous) terms, and correspondingly atelic (i.e. temporally homogeneous) interpretation occurs with non-individuated (i.e. referentially homogeneous) nominal terms such as bare plurals and mass terms, as shown in (24) above. In Krifka’s view, verbs such as *read*, *write*, and *eat* subcategorize for an incremental theme without being specified as telic in the lexicon. The event type of the clause is established by the referential property of the incremental theme, as described above.

There are a number of related approaches that capture the correlation between the referential property of certain nominal arguments and the event type of the verb phrase (cf. among others, Tenny 1994, Hay, Kennedy & Levin 1999, Rothstein 2004). Tenny (1994) introduces the event-structural role MEASURE in order to capture the correlation under discussion (1994: 11, 114). This event-structural role is introduced for a certain type of internal argument, including incremental themes and paths (compare the atelic event *run for miles* with the telic event *run a mile*). This type of argument is affected in a way that measures out the event over time, where measuring out entails that the argument plays a particular role in delimiting the event. In Tenny’s framework, incremental themes measure out the event.

In a similar approach, Hay, Kennedy, and Levin (1999) point out that the affected argument determines the telicity of verbs such as *eat* by virtue of the (non-)boundedness of a property of the entity it denotes. For them, it is not the argument itself, but only a scalar property of its referent that counts. This property is lexically determined by the verb. For *eat a plum* the relevant property is volume. When the volume of the affected argument of *eat* is bounded, as in *eat a plum*, a terminal point can be identified for the event introduced by the verb, i.e., the point of consumption of the maximal volume of the plum. This results in a telic interpretation. When the volume is non-bounded, as in *eat rice* no terminal point can be identified for the event, and the predicate has an atelic interpretation. A similar explanation is offered for degree achievements. With these verbs, the event is limited by a fixed measure (*grow two inches*) or by the implicature that the contextually relevant maximum of the scalar property is reached (i. e. get big). In sum, what counts for telicity is the boundedness of a scalar property of the affected argument. Crucial for our line argumentation is their assumption that a non-individuated, non-bounded argument cannot be assumed to have the contextually relevant maximum of the scalar property that is needed to determine a telic interpretation.

A different approach, specifically devoted to unaccusativity, is Lieber and Baayen (1997). Their claim is that unaccusative verbs generate an inference about the eventual position or the state of the theme argument. Considering a verb like Dutch *komen* ‘come’, we can infer that the theme participant will end up closer to the speaker with respect to its starting point. This contrasts with verbs such as *dansen* ‘dance’ which by themselves (i.e. without the addition of a resultative or directional phrase) do not allow an inference about the eventual position of its participant. The claim of Lieber and Baayen is stated informally and turns out to be similar to the other approaches discussed above. The authors focus on auxiliary selection and do not deal with the correlation between the referential properties of the argument and the event structure of unaccusative verbs.

A proposal dealing with the telicity restriction on impersonal passives is Carnie and Harley (2005). They claim that impersonal passives are essentially existential constructions for events and are subject to the same kinds of restrictions as other existential constructions. Carnie and Harley claim that the telicity restriction reduces to the constraint that existentials are non-presuppositional. The authors assume that in complex (telic) events, the process portion of the event is presupposed. Atelic events, then, are compatible with existential constructions, while telic ones are not. Despite its appeal, this proposal is confronted with problems. First, existential presentational constructions denoting telic events do exist, at least in German, e.g. *Es ist ein Kind gestorben* ‘A child has died’. Second, not all impersonal passives are presentational with respect to the event. There are impersonal passives referring to an event that is previously introduced as the discourse topic, e.g., (13) and (17) above.

Within functional typology, Hopper’s and Thompson’s (1980) multi-factor concept of transitivity, is also pertinent to our discussion. This proposal offers the most comprehensive list of semantic factors that are assumed to correlate with each other thereby increasing (or decreasing) the transitivity of the clause. The properties contributing towards an increase of
transitivity occur on the left hand side in (25), the properties lowering it are on the right hand side (cf. Hopper and Thompson, 1980: 252):

(25)        High transitivity   Low transitivity
A. Participants   2 or more     one
B. Kinesis        action       non-action
C. Aspect         telic        atelic
D. Punctuality    punctual     non-punctual
E. Volitionality  volitional    non-volitional
F. Affirmation    affirmative  negative
G. Mode           realis       irrealis
H. Agency         A high in potency   A low in potency
I. Affectedness of O   O totally affected   O not affected
J. Individuation of O   O highly individuated   O not individuated

The semantic properties in (25) may involve different parts of a transitive event. Volitionality and agency characterize the agentive participant (abbreviated as A). Affectedness and individuation pertain to the patient-like participant (abbreviated as O). The other properties characterize the predicate or the whole clause. Hopper and Thompson claim that morphosyntactic transitivity correlates strongly with semantic transitivity: the higher the semantic transitivity of a clause the higher its morphosyntactic transitivity. Morphosyntactic transitivity includes case and adpositional marking as well as verb agreement and other verbal transitivity markers. As the focus of the present paper lies on the correlation between telicity and individuation, let us take a closer look at the different notions that characterize individuation in Hopper’s and Thompson’s approach (1980: 253). Cf. (26):

(26) Individuated       Non-individuated
proper            common
human, animate    inanimate
concrete          abstract
singular          plural
count             mass
referential, definite non-referential

The contribution of individuation to the transitivity of the clause is formulated as follows (Hopper and Thompson 1980: 253):

An action can be more effectively transferred to a patient which is individuated than to one which is not; thus a definite O is often viewed as more completely affected than an indefinite one. In Fritz drank the beer, there is a possible or even probable implication that he finished the (available) beer; but in Fritz drank some beer this implication is achieved only with difficulty.

The example given by Hopper and Thompson involves the verb drink, which selects an incremental theme. Its reference property determines the telicity, i.e. completion, of the event, as described above. Two critical aspects of their approach are pertinent to the topic of the present paper. First, in their comments of this example, they collapse definiteness and countability. The noun phrase the beer is both definite and countable, while some beer is both indefinite and uncountable, i.e. a mass noun phrase. Secondly, Hopper and Thompson only
consider the individuation properties of the O-argument as relevant factors for semantic and morphosyntactic transitivity. This suggests that the individuation properties of the A-argument do not count in Hopper’s and Thompson’s approach. However, the individuation properties of the A-argument are crucial for explaining, for instance, differential subject marking (cf. Comrie 1989, de Hoop and de Swart 2008).

Collapsing (in)definiteness with (non-)countability is a common weakness shared by approaches that deal with the semantic restrictions of impersonal passives. The pertinent condition is assumed to be an indefinite agent (Frajzyngier 1982) or indefiniteness in general (Abraham and Leiss 2006). Very often, notions related to (in)definiteness and (non-)specificity are used loosely in a way that departs from their strict standard use. Take, for example, Nolan’s characterization (2006: 145):

with the impersonal form of a verb, no specific definite actor is elaborated in logical structure. The actor is instead specific but indefinite. The actor remains specific because we are committed to their actual existence [sic], but is indefinite to the degree that there is no subject available in argument structure.

Under closer inspection, what Nolan claims is that the actor cannot be realised as an overt subject and that the role and the selectional features remain unchanged. Actual existence cannot be claimed to hold, since this claim cannot explain negated impersonal passives, where the actual existence of the actor is not implied (cf. German *Hier wurde nicht getanzt* ‘nobody danced here’).

In summary, former approaches – notably Krifka (1989, 1998), Tenny (1994), Hay, Kennedy & Levin (1999), and Rothstein (2004) – have established that the individuation of the argument undergoing a change of state may influence the event structure of the clause. These studies also show that individuation and (in)definiteness are different parameters.

Let us take a fresh look at unaccusative verbs from this perspective. Consider (27):

(27) a. The / a child drowned in half an hour.  
    b. ??People drowned in half an hour.  
    c. The / a ship sank in half an hour.  
    d. ??Gold sank in half an hour.

What is crucial for my line of argumentation is that an individuated (definite or indefinite) subject argument ensures a telic reading, while a bare plural or a mass noun makes this reading more difficult to obtain. This is indicated by the double question marks in (27b, d). The sentence (27b), for example, is unacceptable in a collective reading where an unspecified number of persons drowned. However, it is acceptable in the less accessible distributive reading in which each individual drowned within half an hour. Thus, the situation illustrated for the unaccusative verb *drown* in (27) parallels that illustrated for the transitive verb *write* in (24) above, in so far as non-individuated arguments make a telic reading more difficult to obtain.

The interaction between the referential property of subject arguments and the event-structure of verbs has been acknowledged, among others, by Rothstein (2004: 154f.). Cf. (28)–(29):

(28) Tourists discovered the village all summer.

(29) a. When she rang the bell, servants arrived in one minute.  
    b. Owls arrived in five minutes, bringing letters and packages.  
    c. Help reached me in five minutes.
While the bare plural subject induces atelicity in (28), the examples in (29) show that the inherent telicity of the respective verbs surfaces in certain contexts and in certain readings even with non-individuated subjects. Thus, for example, (29a) is acceptable in the distributive reading mentioned above for (27b). In this reading, each individual servant arrived within one minute after the bell rang, so that the cumulated arrivals of the servants happened within one minute. In (29c), the subject argument refers to a particular event and not to a mass of helping events.

In sum, a closer scrutiny of the data shows that the telicity restriction is not a strict independent constraint but rather an epiphenomenon of the referential non-individuation of the argument undergoing a change of state. The reason is that a non-individuated argument cannot be interpreted as having the relevant bounded property that is needed to determine a telic interpretation. There are two interpretation strategies when the argument in question is non-individuated. In the marked strategy, the individuation of the argument may be enforced contextually, in which event a telic reading obtains, as shown in (29). In the default strategy, the inherent telicity of the verb is forced into an atelic, i.e. repetitive or generic reading.

The next group of data will show that there is a similar interaction between event-structure and individuation if an argument is syntactically omitted in the construction inappropriately called ‘indefinite object deletion’. Pertinent examples are (30)–(31) in the reading given below each example:

(30) a. John ate something in three hours / for three hours.
   ‘Within three hours John accomplished the eating of something.’
   b. John ate something a lot.
   ‘There is a singular eating-something event where a lot has been consumed.’

(31) a. John ate something in three hours / for three hours in the restaurant.
   ‘John was engaged three hours in eating in the restaurant.’
   b. John ate a lot.
   ‘There is a singular eating event where much has been consumed.’

Selectional and role-related semantic information regarding the implicit object is still available. The objectless examples (31a)–(31b) imply gradually consumed food. My explanation for the event-structural homogeneity observed in (31) parallels that offered above for incremental themes and unaccusative verbs under the plausible assumption that the implicit object is non-individuated. Hence an inhomogeneous event reading cannot obtain, as shown by the unacceptability of the adverbial in three hours in (31a). However, in a sufficiently rich context, a telic interpretation is available (cf. Rothstein 2004: 157), as shown in (32):

(32) John usually spends a lot of time for lunch, but today he ate in half an hour.

Like in the other cases discussed above, there are two interpretation strategies in argument deletion as well. In the marked strategy, the individuation of the argument may be enforced contextually, in which event a telic reading obtains, as shown in (32). In this example, he ate in half an hour is interpreted as ‘he ate his lunch in half an hour’. The default strategy is an atelic, imperfective reading, as shown in (31).

A common yet unsatisfying semantic treatment of this type of object demotion is achieved by existentially binding the respective variable in the semantic representation of the verb. (33)
shows the meaning postulate proposed by Fodor and Fodor (1980) for the intransitive use of *eat*:

\[ (33) \quad x \text{EAT} \equiv (\exists y) x \text{EAT} y \]

As noted by Mittwoch (1982), among others, *John is eating* does not entail *John is eating something*, if the indefinite pronoun *something* and the existential quantifier \( \exists \) are interpreted in the standard way. One crucial difference between the two sentences is their event structure. While the transitive sentence with the indefinite pronoun is telic, as shown in (30a)–(30b) above, that of the intransitive sentence is atelic by default, as shown in (31a)–(31b). If we take the above-mentioned event-structural approaches into consideration, the problem of (33) as a predicate-logic representation of object demotion becomes clear. In predicate logic, existential binding involves an individual variable \( x \) in (33). The dilemma of standard predicate logic when dealing with such cases as well as with bare plurals and mass nouns is that, under any assignment, a variable is interpreted as one individual (cf. Nicolas 2008, Bunt 2009 regarding bare plurals and mass nouns).

The problem of the proper representation of non-individuated nominals is dealt with, among others, by Chung and Ladusaw (2003) with particular reference to noun incorporation in Chamorro and a certain indefinite determiner in Maori. Non-individuated nominals are assumed to denote properties and to be composed with the verbal predicate by means of restriction instead of saturation. In their approach, there are two modes of composition for a predicate and its syntactic argument: saturation and restriction. In this kind of approach, which departs from standard predicate logic, the event-structural effect of referential argument demotion can be captured, in principle, although the authors do not address this issue.

The treatment of ‘indefinite object deletion’ by means of the existential quantifier parallels that of agent demotion in passives in some approaches. Cf. the representation of the passivized verb *pinch* in (34) taken from Butt (2006: 114):

\[ (34) \quad \lambda y \exists x \lambda s \{ \text{pinch}(x,y) \} (s) \]

In this kind of representation, lambda operators are a formal means to represent the free arguments of a predicate. Besides individual variables for argument slots, the representation in (34) also introduces a lambda-bound situation or event variable \( s \), which is not at issue here. Passivization is assumed to existentially bind the highest argument by the logical quantifier \( \exists \). This treatment leads to the event-structural problem mentioned for ‘indefinite object deletion’ above in connection with the representation (33). The telicity restriction of impersonal passives cannot be explained if the demoted agent phrase is represented by an existentially bound individual variable.

Impersonal verbs are another type of data that support my claim that event-structural telicity cannot obtain if there is no individuated argument. Such verbs often denote weather processes such as snowing, thundering, and raining. (35) shows pertinent German examples:

\[ (35) \]

\begin{itemize}
  \item a. Es dämmerte \# in einer Stunde / eine Stunde lang.
      ‘It was getting dark \# in an hour / for an hour.’
  \item b. Es kühlte \# in einer Stunde / eine Stunde lang ab.
      ‘It was getting cold \# in an hour / for an hour.’
\end{itemize}

Note that although *es dämmerte* ‘it was getting dark’ and *es kühlte ab* ‘it was getting cold’ refer factually to gradual changes, the constructions are event-structurally homogeneous, as demonstrated by the adverbials in (35) and by auxiliary selection: dämmern and abkühlen
select the auxiliary *haben* ‘have’ in perfect tenses when they are used in impersonal weather constructions. My explanation for the event-structural homogeneity observed in (35) parallels that offered above for the other types of data: the expletive argument has no referent and, accordingly, there is no possibility of individuation. This differs from ‘indefinite object deletion’ where the object may be individuated pragmatically. As a consequence, the interpretation strategy mentioned above for (32), in which an individuated argument is reconstructed contextually, cannot obtain in impersonal constructions. A telic interpretation is only possible if another constituent measures out the event, such as in *Es kühle in einer Stunde um zehn Grad ab* ‘It became ten degrees colder in an hour’. In this case, the measure modifier *um zehn Grad* ‘ten degrees’ ensures the telic reading.

The above-mentioned findings and their treatment in previous studies are pertinent to impersonal passives as they lead to the possibility of deriving the telicity restriction from argument demotion. As widely acknowledged, agent demotion is the main characteristic of all kinds of passive constructions including impersonal passives (cf. Siewierska 1984, Shibatani 1998, Keenan and Dryer 2005, among many others). This means that passivization blocks the syntactic realization of the agentive role. At least in the languages under discussion, the role-semantic properties are still intact, as shown by manner adverbials such as *voluntarily*: *hier wurde freiwillig getanzt* ‘People danced voluntarily here’. My claim is that suppression impoverishes the argument position only in referential terms to [non-individuated], at least in the languages under discussion. In terms of the widely used hierarchy of individuation (Comrie 1989: 188f.), the implicit argument in impersonal passives is demoted to the lowest position on this hierarchy along with uncountable nominals such as mass nouns and bare plurals. As a consequence, a referentially demoted argument cannot measure out the event. If the passivized intransitive verb is lexically telic, passivization leads to a default atelic interpretation, as shown in the examples and corpus attestations above.

Drawing upon some of the approaches mentioned so far, I will discuss and illustrate my proposal on the basis of the Dutch examples in (9a) vs. (9b) above, repeated in (36) for convenience:

(36) Dutch (acceptability judgements from Goldberg 1995: 15)

a. *Er werd opgestegen.*
   ‘There was taking off.’

b. Vanaf Schiphol wordt er de hele dag *opgestegen*.
   ‘From Schiphol (airport) there is taking off the whole day.’

In both examples, the argument undergoing a change of state is implicit and non-individuated. Hence it behaves like a bare noun. This is my basic assumption. If we transfer Chung’s and Ladusaw’s (2003) approach to impersonal passives, the implicit argument denotes a cluster of properties which are derivable from the lexical meaning of the verb *opstegen* ‘take off’. Planes have this cluster of properties, for example. Following Hay, Kennedy, and Levin (1999), at least one scalar property of planes determines the event structure of taking off, arguably, their variable distance to the ground. When the argument is individuated, as in the *plane to Vienna took off*, the relevant scalar property is bounded. This means, in Tenny’s terminology (1994), that the distance of the plane to the ground can be identified and can measure out the event. Hence, an initial point can be identified for the event introduced by the verb, i.e., the point of the plane being on the ground, followed by a subsequent development in which the distance of the plane to the ground increases to a contextually relevant maximal distance, which is also the terminal point of taking off. This is the telic (biphasic) event-structural interpretation.

This interpretation is more difficult to obtain if the argument undergoing a change of state is non-individuated, as in *planes took off*, or as in *er werd opgestegen* ‘there was taking off’ in
(36a). With a non-individuated argument, the distance to the ground is not identifiable and, hence, no initial and terminal point can be identified for the event. In other words, one cannot discern distinct phases of the event of taking off if one cannot identify the distance to the ground. As a result, the lexically biphasic predicate has to be forced into a monophasic (atelic) interpretation. This interpretation is rather difficult to obtain ‘out of the blue’ without a sufficiently rich context, as in (36a). This leads to unacceptability in the judgement of Goldberg (1995) or to a reduced acceptability in the judgement of my informants. By contrast, the example (36b), vanaf Schiphol wordt er de hele dag opgestegen ‘from Schiphol (airport) there is taking off the whole day’ is more acceptable than (36a) because it offers a context, i.e. the adverbial de hele dag, which facilitates event-structural coercion into a repetitive reading. In this reading, the event-structure of (36b) is monophasic (atelic). This facilitating context is missing in (36a). This is the reason why (36a) is less acceptable than (36b).

As shown for the other types of data, there are two interpretation strategies when the argument undergoing a change of state is non-individuated. In the default strategy, the inherent event-structural inhomogeneity of the verb is forced into a homogeneous, i.e. repetitive or generic, reading. This is the default interpretation, which has been discussed for (36a,b) in greater detail above and which has been illustrated by all examples and corpus attestations with impersonal passives in this paper so far. In the marked strategy, the individuation of the argument is enforced contextually. This results in an event-structural biphasic reading if the verb is lexically biphasic. This marked strategy is available for impersonal passives in German in a context of use where the argument is individuated pragmatically. It is illustrated in (37):

(37) a. In fünf Minuten wird ins Bett gegangen!
   ‘In five minutes you are going to bed!’
 b. In fünf Minuten wird aufgestanden!
   ‘In five minutes you are getting up!’

The examples in (37) are used as directive speech acts (e.g. commands or requests) that are addressed to the implicit argument. The implicit argument is individuated pragmatically since it is co-referent with the addressee. Well in accordance with my proposal, the directives in (37) refer to a single biphasic event.

The analysis proposed in this paper can explain further semantic effects that have been assumed to be the primary function of impersonal passives in the literature. Agent detopicalization or backgrounding is widely acknowledged as the major function of all passives, including impersonal passives. This function can be explained by the analysis proposed in this paper as follows. As the implicit argument lacks any individuation properties it cannot be selected as a topic, since topics are highly individuated, i.e. specific or definite. Event-prominence or event-centrality is another function claimed to characterize impersonal passives (Vogel 2005, among others). This function correlates with the fact that there is no central participant available. This also explains why impersonal passives are often used with locatives in topic position (cf. van Schaik-Rădulescu (2009) with reference to impersonal passives in Turkish). In such uses, certain locations, such as Schiphol airport in (9b = 37b), Bosnia in (10a), and the schoolyard in (15), are topicalized and characterized by the events that occur in them. The variation of functions attested and defended in the literature suggests that such functions are epiphenomenal. My claim is that they are secondary to referential argument demotion.

4. Summary
Impersonal passives in German, Dutch, and Turkish have a robust event-structural output condition: the situation denoted by impersonal passives is a homogeneous (e.g. atelic) event. Verb lexemes denoting an inhomogeneous or biphasic event, i.e. verbs that are lexically telic, can be used in impersonal passives, if they are used in contexts which enforce a homogeneous, monophasic event reading. This is the default interpretation. I derived this restriction from the referential demotion of the argument. My proposal is that the implicit argument in impersonal passives is deprived of individuation properties. In other terms, this kind of implicit argument loses its nominal functional structure and behaves like a bare noun. This is the crucial functional impoverishment which explains the event-structural effect, and in addition, further functions that have been attributed to impersonal passives in the literature, such as agent detopicalization, agent backgrounding, event-prominence and locative topicalization. There is also a marked interpretation strategy in which argument individuation is enforced pragmatically. This strategy is available for impersonal passives that are used as directive speech acts in German. In these uses, the implicit argument is individuated pragmatically: it is co-referent with the addressee. Well in accordance with my proposal, an impersonal passive with a pragmatically individuated argument may refer to a single biphasic (telic) event. Other types of data involving incremental themes, ‘indefinite object deletion’ and impersonal constructions support the analysis proposed here.

5. References


<http://www.hum.leiden.edu/lucl/research/SOLE/console11.jsp>


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Figure 1: Average acceptability judgements for passivized intransitive verbs in German