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The present perfect progressive: constraints on its use with numerical object NPs[1]

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This paper tries to reveal the constraints on the use of the present perfect progressive (PPP) in combination with numerical object NPs. Existing accounts tend to take situation type classes as a basis for the description of the PPP. It is shown that such an approach does not yield adequate results. (Un)boundedness (Declerck, 1991; Depraetere, 1995) plays an equally important role as (a)telicity in determining whether the progressive can be used or not. (Un)boundedness, as opposed to (a)telicity, is concerned with actual terminal points (of situations referred to) rather than potential (inherent) endpoints. It will be shown in this paper that, in some cases, the conflict between the unboundedness inherent in the progressive form and the boundedness often brought about by numerical object NPs that are used in nonstative sentences results in unacceptability. Considerable attention is first paid to the constraints on the use of the past progressive with numerical object NPs. The second part of the paper focuses on the PPP: apart from (un)boundedness and (a)telicity, the type of perfect and our knowledge of the world also play their part in determining whether or not the PPP is acceptable in sentences with a numerical object NP.

1 The problem

Both the present perfect tense and the progressive form have been subjected to detailed investigation. However, the combination of these forms, i.e. the present perfect progressive, has received much less attention,[2] even though the principles governing its use are by no means transparent.

Before we explain what problems there remain to be solved, it is useful to point out that there are basically two present perfects:[3] the continuative perfect (i.e. the situation referred to starts before the moment of speaking and continues up to it) and the indefinite perfect (i.e. the situation referred to stops before the moment of speaking; it happens during a time-span that is considered to be linked up with the

[1] Our thanks are due to two anonymous referees for their very useful comments.

[2] Fenn (1987), Leech (1988), Meyer (1992), and Zydatiss (1976) contain detailed discussions of the present perfect progressive. However, the question that is addressed in this article is not explicitly dealt with in any of them.

[3] We follow Michaelis (1998) in assuming that the indefinite perfect (or resultative perfect, as she calls it) and the continuative perfect have different semantics and therefore do not constitute two (pragmatic) uses of one and the same form. This assumption is, of course, debatable. The alternative view is that continuative and indefinite perfects are contextually determined (or influenced) interpretations of the same semantic form. According to such a view, the question of boundedness, rather than resulting from the choice of indefinite or continuative perfect, must be seen as playing a more direct role in determining the acceptability of the progressive. This, however, may not prove incompatible with the general drift of our analysis.

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moment of speaking, i.e. it is located in the 'pre-present' (cf. below)). The use of an *-ing* form in combination with a perfect does not always imply that the perfect is of the continuative type. The examples in (1) illustrate the indefinite perfect; that in (2) contains a continuative perfect. Repetitive perfects (cf. (3)) can be classified as either indefinite or continuative: the situation consists of a number of subsituations, each of which lies before the moment of speaking (indefinite); the situation is repeated or habitual during a period of time that continues until the moment of speaking (continuative):

(1) (a) Mr Hurd *has been paying* a short visit to Sana the capital, on his way to Saudi Arabia. (CC)[4]
(b) Finally, Johnny Cash *has been recording* with U2 in Dublin and might turn up on their new LP, due out in the summer. (CC)
(2) Mr Watkinson, Minister of Defence, *has been working* on the plan for some months, with the Prime Minister's approval. (LOB)
(3) He *has been filling* theatres and creating happiness ever since.

The common feature of all present perfect sentences – whether progressive or not – is that they locate a situation in the 'pre-present', i.e. 'that part of the present time-sphere that lies before the time of the utterance' (Declerck, 1991: 86), no matter whether the situation fully coincides (is commensurate) with that period or not.

The following examples show that the effect brought about by the progressive in past tense sentences is not entirely similar to its effect in present perfect sentences:

(4) I was eating an apple.
(5) I have been eating an apple.
(6) He was buying the latest book about Chomsky.
(7) ?He has been buying the latest book about Chomsky.

The effect of the progressive in a past tense telic sentence (as in (4)) is to place the endpoint inherent in the telic situation 'out of the picture' – it may or may not be, or have been, reached, but it is simply not under consideration: only the 'midpoint' of the process is focussed on. Although the progressive combined with the present perfect (as in (5)) does essentially the same thing, the endpoint is considerably more 'visible': (5) is far more likely to be interpreted as equivalent, in terms of endpoint reached, to *I have eaten an apple* than (4) is to be interpreted as equivalent – again, in terms of whether the apple is finished – to *I ate an apple* (cf. Mittwoch, 1988: 236). In (6) and (7) an accomplishment is 'interrupted', so to speak, by the use of the progressive, which 'cuts off' the endpoint from consideration. Whilst this is acceptable in the case of the past progressive, it appears to be very difficult to interpret a present perfect progressive in a similar way. Thus, although the situation-type is the same in both cases, the acceptability of the progressive is not identical with the past and with the present perfect. This evidence suggests that an analysis of

[4] CC stands for *Collins Cobuild*, LOB refers to the London–Oslo–Bergen corpus, and ICE-GB to the British English component of the *International Corpus of English*.

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the constraints on the use of the progressive will need to differentiate between the past progressive and the present perfect progressive.

The following examples show that the constraints on the use of a PPP form cannot be formulated in terms of situation type classes only: (8) and (9) both contain an accomplishment (according to the traditional account).[5] However, the progressive perfect is perfectly acceptable in (9b) but not (except, as we shall see, in special contexts) in (8b):

(8) (a) I have drunk seven beers.
    (b) ?? I *have been drinking* seven beers.
(9) (a) I have cleaned the window.
    (b) I *have been cleaning* the window.

The aim of the present analysis is basically a practical one: we want to examine more closely the constraints that affect the combination of the past progressive with a numerical NP, and from there, take a first step towards a characterization of the somewhat different constraints that underlie the use of the PPP form in sentences with a numerical object NP.[6] Before turning to this analysis, it is necessary to define the notions *(a)telicity* and *(un)boundedness*.

2 (A)telicity and (un)boundedness

2.1 (A)telicity

(A)telicity refers to situation types; a sentence[7] is said to be telic when the situation it refers to is represented as having an inherent endpoint (cf. (10a)) which has to be reached for the situation as it is represented in the sentence to be complete and beyond which it cannot continue. In Depraetere (1995) it is argued that sentences which refer to situations that have an *intended* endpoint should also be considered as telic (cf. (10b)):[8]

(10) (a) He scored a goal in the twentieth minute.
     (b) He spoke to her for about half an hour, just to annoy his wife.

We believe that sentences with an inherent endpoint are also telic, because if someone sets out to talk for half an hour, the situation of talking for half an hour is

[5] As we will point out below, we believe that (8a) is either telic or atelic but in any case bounded, which is a view that differs from the traditional approach to situation types.

[6] In this paper the focus is on *multiple numerical NPs*, i.e. the NP indicates more than one referent (e.g. *five books*). We will use the term *single numerical NP* if the NP has one referent (e.g. *a/one book*).

[7] In viewing telicity as a property of sentences, we follow e.g. Comrie (1976) and Binnick (1991), who argues that 'it is only at the level of the sentence that telicness can be truly defined' (Binnick, 1991: 191). Comrie writes: 'At first sight, it might seem that we could call verbs that refer to telic situations telic, those that refer to atelic situations atelic ... However, situations are not described by verbs alone, but by the verb together with its arguments (subject and objects) ... Some of the sentences that give difficulty to Vendler ... seem to stem from his failure to realise that subjects, as well as objects, must be included here' (Comrie, 1976: 45).

[8] Cf. below and Depraetere (to appear) for evidence justifying this approach.

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exhausted once the thirtieth minute is over just as (broadly speaking) the baking of a cake is over when the cake appears from the oven. This is not to say that the person could not go on talking, but in that case, the situation can no longer be referred to by means of the sentence *He spoke to her for half an hour*, but only by means of *He spoke to her*. In other words, the endpoint we have in mind is not a *post hoc* factual endpoint but one that is inherent from a point of view located at the beginning of the situation. A sentence is said to be atelic if the situation it refers to is not represented as having an inherent or intended endpoint:

(11) He talked as we walked.

2.2 (Un)boundedness

(A)telicity should be distinguished from (un)boundedness. A sentence is bounded if it represents a situation as having a (linguistically evoked) temporal boundary (Depraetere, 1995: 3; Declerck, 1991: 8–60) (cf. (12a)), (12e)); a sentence is unbounded if it does not represent the situation as having a temporal boundary (cf. (12b) to (12d)).[9] In other words, while (a)telicity relates to potential endpoints (no matter whether they are reached or not), (un)boundedness has to do with the actual termination of the situation (as it is referred to in the sentence) that is signalled by means of linguistic elements. The following examples show that telicity (atelicity) does not necessarily coincide with boundedness (unboundedness):

(12) (a) John made a chair. (telic and bounded)
(b) John is making a chair. (telic and unbounded)
(c) John is making chairs. (atelic and unbounded)
(d) Oak makes good chairs. (atelic and unbounded)
(e) John chiselled for two minutes. (atelic and bounded)

In (12b), the situation of making a chair has an inherent endpoint – a made chair – irrespective of whether the endpoint is actually ever reached. But the situation referred to is not temporally bounded linguistically: as far as the linguistic signals go, John could go on making the chair for an hour or for the rest of his life. The only temporal information that we are given by the linguistic signals is that, at the time referred to, the situation is in progress.

The temporal boundary[10] may be linguistically realized in different ways: by

[9] In Depraetere (1995), bounded situations are said to represent situations as 'having reached' a temporal boundary. This formulation may be somewhat confusing in that it suggests that it is only applicable to past tense sentences. However, at the time, 'having reached a temporal boundary' seemed to be preferable to 'reaching a temporal boundary' because a definition along these lines could be misunderstood as indicating telicity. As a matter of fact, 'having a temporal boundary', which we use here, could still be (mis)interpreted as referring to a potential temporal boundary, but it all the same appears the least misleading formulation.

[10] A situation may be bounded to the left (*He started painting at five*), bounded to the right (*They lived here till 1981*) or bounded on both sides (*The shop was open from seven to eleven*). In this paper, the focus is on right boundedness.

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means of a numerical subject NP (cf. (14)), a numerical object NP (cf. (15a)), a bounding adverbial (cf. (16)), tense (e.g. a perfect form (cf. (17a)) or a PP (cf. (18a)):

(13) (a) He likes Bach. (unbounded)
(b) They play tennis on Saturdays. (unbounded)
(14) Four guests complained about the service. (bounded)[11]
(15) (a) He received four complaints. (bounded)
(b) He received complaints. (unbounded)
(16) He stayed on for three days. (bounded)
(17) (a) I have lived in Paris. (bounded)
(b) I live/lived[12] in Paris. (unbounded)
(18) (a) He drove the car into the garage. (bounded)
(b) He drove the car. (unbounded)

It should be added that none of the above factors brings about a bounded reading on its own; there is almost always interaction with aspect: although the progressive cannot always be used, sentences with a progressive form are likely to be unbounded. The substitution of the progressive for the simple form in (14) and (15a) results in the unbounded sentences in (19):

(19) (a) Four guests were complaining about the service. (unbounded)
(b) ?He was receiving four complaints. (unbounded)

Moreover, the use of the progressive in (19b), for instance, implies that four people were complaining at the same time, which is not necessarily the case in the corresponding non-progressive (14a). Similarly, the use of a progressive form in (18a) has the effect of turning the bounded sentence into an unbounded one:

(20) He was driving the car into the garage. (unbounded)

The generalization that the progressive has the effect of turning a bounded sentence into an unbounded one does not apply indiscriminately, however. In sentences such as the following, in which an indefinite perfect is used, the situation is represented as bounded in spite of the use of a progressive form:

(21) (a) Her eyes are red. She'*s been crying*.
(b) You look exhausted. I *have been jogging*.
(c) We'*ve* just *been entertaining* the ladies' rugby team here at Cardiff. (ICE-GB S1b–021 063)[13]
(d) The defence secretary Mr Tom King *has* also *been speaking* about the latest skirmishes on the battlefield. (ICE-GB S2b–004 043)

[11] It is a matter of discussion whether this sentence can be understood as referring to a situation in which four people are 'in the process' of complaining. It seems probable that in *In the hotel's reception, porters scurried about, a waiter chatted to the lift-boy, four guests complained to a harassed receptionist about the service*, it is indeed used to refer to a situation in progress, and is thus similar to the sentence in (19a) and unbounded. Binnick (1991: 190) argues that any situation with an activity phase referred to by means of a simple tense can have a 'progressive reading', in which case it is unbounded. However, the informants we consulted thought that the unmarked interpretation is one in which the situation of complaining is not on-going.

[12] We will explain in due course why a sentence with a preterite is not necessarily bounded.

[13] ICE-GB is the British component of the *International Corpus of English*.

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As far as the interaction of adverbials and (un)boundedness is concerned, it is argued in Depraetere (1996a: 38–42) that the adverbial will have a bounding effect provided it contains new information (irrespective of whether the progressive is used or not):

(22) A: When were you working in the library?
B: I was working in the library from four to five o'clock. (bounded)[14]
(23) A: What were you doing from four to five o'clock?
B: I was working in the library from four to five o'clock. (unbounded)

The unbounding effect of the progressive is 'overridden' by the bounding effect of the adverbial in (22), in which the adverbial provides new information. In (23), in which the adverbial constitutes given information, this is not the case. Again, it is clear that the use of a progressive form does not in itself entail that a sentence is unbounded.

Another parameter that influences (un)boundedness is tense. The addition of the simple perfect marker to a nonprogressive past, present or future tense sentence establishes boundedness if the resulting perfect is interpreted as an indefinite perfect. The simple past and the simple present differ from the nonprogressive indefinite perfect in that the former two tenses do not automatically result in bounded sentences:

(24) (a) He has worked in Paris. (bounded)
(b) He works in Paris. (unbounded)
(c) He worked in Paris. (unbounded)
(d) He will work in Paris. (unbounded)
(25) (a) He has opened the cupboard. (bounded)
(b) He opens the cupboard. (bounded or unbounded)
(c) He opened the cupboard. (bounded or unbounded)
(d) He will open the cupboard. (bounded or unbounded)

No matter whether the sentence is telic (25) (*He opens the cupboard*) or atelic (24) (*He works in Paris*), the use of an indefinite perfect tense has a bounding effect (cf. (24a), (25a)). When the situation is represented as telic, the sentence with the simple present tense (cf. (25b)) either gets a narrative present reading (*He opens the cupboard, takes out a knife, and cuts his wrists*) or a habitual reading (*Jim is not afraid. He opens the cupboard to show its contents whenever necessary*). In the latter case, the sentence is understood to refer to a habit not limited in time, i.e. it is unbounded. On the narrative present reading, it is bounded. Sentences with a simple past tense or a simple future tense are interpreted as bounded if the situation is telic (cf. (25c) and (25d)) or if there is a bounding adverbial (*He worked in Paris for four years*). The past tense (and future tense) sentence can also be understood to refer to a habit (cf. (25c) and (25d)), in which case it is unbounded as well. In other words, if a sentence gets a habitual reading, it is unbounded unless the context prompts a bounded interpretation, e.g. if there is an adverbial that specifies the time when the

[14] This sentence is a possible reply in a statement given to the police.

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habit held (*Jimmie opened the cupboard all last week, now it's Sally's turn to be cupboard monitor*.). Intuitively, one might be inclined to argue that all past tense (future tense) sentences are bounded as they are located at a time before (after) the moment of speaking and thus (in the case of the past tense) could be seen as 'over'.[15] However, since few people would judge *He was working in France* to be bounded, it appears that boundedness is a feature that should be determined from the point of view of the (Reichenbachian) reference time inherent in the structure of the tense used (past tense: E,R-S, future tense: S-R,E). This approach implies that past tense/future tense situations may either be bounded (cf. (26a), (26b), (27a) and (27b)) or unbounded (cf. (28a) and (28b)) (cf. Depraetere, 1996a: 28–33):

(26) (a) He gave her a kiss.
(b) He will give her a kiss.
(27) (a) He lived in Paris for four years.
(b) He will live in Paris for four years.
(28) (a) He disliked her.
(b) He will dislike her.

In other words, a distinction has to be made between, on the one hand, the implicature commonly associated with the preterite (or with the future tense) that the situation it refers to is no longer (or is not yet) the case at the moment of speaking[16] and, on the other hand, whether or not there are linguistic clues that literally represent a situation as ending. To give just one example of what we mean by 'linguistic cues': the temporal boundary in sentences of the type given in (21a) is the time at which the crying is over and it is a linguistic factor (i.e. the indefinite perfect) that sets the boundary. Sentences with continuative (simple or progressive) perfects (cf. (29)), including repetitive (cf. (30)) (simple or progressive) perfects that are interpreted as continuative perfects, are unbounded. In these cases, the situation leads up to the moment of speaking: there is explicit reference to a left boundary only. Although the moment of speaking is the implicit right boundary inherent in the structure of the continuative perfect itself (and from that point of view one might say that this type of sentence is bounded) the situation is not represented as ending. This is why continuative perfect sentences, including continuative repetitive perfects, should be classified as bounded to the left and unbounded to the right (cf. Depraetere, 1995: 13; Declerck, 1991: 100):

(29) When grass/clover mixtures *have been growing* for about three years, a considerable amount of fertility has built up in the soil. (ICE-GB W2B)
(30) Throughout the past decade, he *has been buying* armaments and fortifications from Western countries eager both to see him defeat the fundamentalists in Iran and take his cash. (ICE-GB-W3E)

[15] For the time being, we disregard sentences of the type *From now onwards, I will call you Jimmie*.
[16] In Depraetere (1996b) it is pointed out that in certain types of sentences, the implicature associated with the past tense is more likely to be cancelled than in others. There is an attempt to list the factors that influence the likelihood of past tense situations still being the case at the moment of speaking.

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3 The past progressive, (un)boundedness, (a)telicity, and numerical object NPs

In this section, we would like to argue that sentences with numerical object NPs are not necessarily telic and that an understanding of the role of numerical object NPs in establishing (or not) telicity or boundedness enables us to account for the constraints on the use of the progressive in such sentences.

In existing research on the effect of NPs on situation types, the focus is very often on the difference in effect between singular and plural NPs in nonstative sentences, the point being that changing a singular NP (*Ze dronken een liter whisky* 'they drank a litre of whisky' (Verkuyl, 1972: 21)) into a plural or mass NP (*Ze dronken whisky* 'they drank whisky' (Verkuyl, 1972: 21)) coincides with a change from Accomplishment to Activity (cf. also Smith, 1991: 31–3; Dowty, 1986: 39). In this paper, however, the focus is on the question of how numerical NPs (especially those with a number higher than one) affect situation types.[17,18] Dowty (1991) has pointed out that telicity should be defined in terms of incremental theme: VPs that have an incremental theme, i.e. that contain NPs that 'measure out the event' (Dowty, 1991: 570), are telic. From that point of view there is a difference between *own a house* (no incremental theme) and *build a house* (incremental theme) or *John drank beer* (no incremental theme) and *John drank a glass of beer* (incremental theme). However, Dowty does not explicitly address the question as to how multiple numerical object NPs should be analysed. As a matter of fact, on his approach, *a cigarette* and *seven cigarettes* in *smoke a cigarette/seven cigarettes* both 'measure out' the situation, i.e. they both have an incremental theme, and are therefore telic. This is a view that we would like to challenge in what follows.

A first point that needs to be made is that here the focus is on nonstative sentences, because stative sentences are inherently atelic (in our sense) (cf. Verkuyl, 1993: 66) unless there is an element of intention involved (cf. (31c)):

(31) (a) He lived in a squat. (atelic, unbounded)
(b) He lived in three squats for a month each. (atelic, bounded)
(c) The journalist lived in three squats for a month each in order to research an article on 'dropouts'. (telic bounded)[19]

[17] An anonymous referee points out that some linguists have looked at these issues within a framework of model theoretic semantics. For a brief review of these studies see Krifka (1992). See also Krifka (1989), Verkuyl (1993).

[18] Verkuyl's observation is very revealing in this respect: 'As observed before, it would have been better if more attention would have been paid to the behaviour of terminative sentences with plural NPs rather than with the definite singular NP. It is easy to be led into the context of the non-subinterval property if you deal with (56) [*John discovered a treasure*] rather than with (57) [*John discovered three treasures*], or with *John opened the door* rather than with *John opened three doors*' (Verkuyl, 1993: 213).

[19] For reasons that will become clear below, the claim that (31c) is telic is substantiated by the fact that it is possible to use the progressive in (31c) (*He was murdered two weeks after moving in. He was living in three squats for a month each in order to research an article on dropouts*), but not in (31b) on an atelic reading.

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The presence of a single numerical object NP in a nonstative sentence results in telicity:

(32) (a) He smoked a cigarette. (telic, bounded)
(b) He bought a cake. (telic, bounded)
(c) I (have) cleaned the window. (telic, bounded)

If more than one referent is involved, there is no straightforward, unified approach: we shall argue that, in the case of multiple numerical NP objects, the presence of such an NP does not, in itself, necessarily mean that a sentence is telic. In fact (in the absence of other markers of boundedness), the acceptability of the past progressive in a sentence with a numerical NP object is dependent precisely on whether, in the first instance, the NP establishes telicity or not, and in the second instance whether it establishes boundedness.

(33) He killed five chickens

The sentence in (33) has two readings, which are respectively brought out by the following contexts:

(34) Because we had so many extra guests, he killed five chickens.
(35) He lost control of the car and skidded across the farmyard. He killed five chickens.

In (34), *He killed five chickens* is telic, but in (35), we would argue, it is atelic. That is, the presence of the numerical NP establishes telicity only in one of the two sentences. Again, here, it is important to make a distinction between telicity and boundedness: in both (34) and (35), *He killed five chickens* is bounded. In both (34) and (35), the situation is understood to have a temporal boundary, in this case established by the combination of the simple past and the numerical NP: the situation referred to by the speaker ends at the point where he has killed exactly five chickens (whether or not in the *real world* he continued to kill chickens). However, we would claim that (35) is atelic: five dead chickens is not the *inherent* endpoint of the situation, as it is in (34). As the car started to skid, and as the first chicken fell victim to it, it was not inevitable that the end result would be five dead chickens. This claim is easier to understand if (35) is contrasted on the one hand with a situation not involving intention, such as *The branch broke*, where, as the branch starts to break it is inevitable that the end result will be a broken branch, and on the other hand with a situation such as we have in (34) where five dead chickens do constitute the inherent endpoint of the situation because this result is, all along, the killer's intention. In other words, whilst in (34) the situation referred to is, throughout, one of killing five chickens, which must automatically end at the point where five chickens are killed (irrespective of whether he goes back and kills another couple), in (35), the situation is throughout one of killing chickens, and *five chickens* represents the *post hoc* boundary of the spree (though, as noted above, the boundary is a linguistic one and has to do with the situation referred to – the situation as it is linguistically represented – irrespective of events in the real world).

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It is this difference in telicity between (34) and (35) that accounts for the difference in their respective progressive counterparts:

(36) Because we had so many extra guests, he was killing five chickens (when Mary arrived).
(37) *He lost control of the car and skidded across the farmyard. He was killing five chickens (when Mary arrived).

In (34), the numeral *five* does not semantically function simply as a boundary to the situation of killing chickens: the whole process described is that of *killing five chickens*. The numerical NP is thus both the inherent endpoint of the situation and, consequently, in the nonprogressive sentence, interpreted as the temporal boundary of the situation. When (34) is combined with the progressive, the unboundedness which the progressive imposes[20] requires that (for the sentence to be acceptable) the NP is not seen as establishing a boundary. This is possible, because the NP can still be interpreted as constituting the inherent endpoint of the situation. However, in (35) the NP *only* establishes a boundary: the purpose of *five* is to bound the situation of killing chickens. Consequently, when (35) is combined with the progressive, as in (37), the sentence is uninterpretable: the numerical NP can only be interpreted as establishing a temporal boundary, but the progressive cannot be used to refer to bounded situations. The conflict between the boundedness imposed by the only possible interpretation of the NP and the unboundedness imposed by the progressive results in unacceptability.

Let us take a further example to show that the numerical NP may play a role as inherent endpoint and as bounding agent and that it is only if the numerical NP merely functions as bounding agent that it is not compatible with the progressive:

(38) He smoked a cigarette.
(39) He smoked seven cigarettes.

We would argue that both (38) and (39) are bounded, but whilst (38) has only a telic interpretation, (39) can have both telic and atelic readings. The default reading of (39) is the atelic interpretation so that normally, whilst a progressive version of (38) will be judged acceptable (for the reasons given above with respect to (34)), a progressive reading of (39) will not:

(40) He was smoking a cigarette.
(41) (*) He was smoking seven cigarettes.[21]

The reason for this is that in (41), on its default interpretation, the number in the numerical NP has the sole role of bounding the cigarette-smoking situation: the sentence is not saying that someone carried out an action whose endpoint was

[20] As has been pointed out before, the progressive does not result in unboundedness when it combines with an adverbial that gives new information (cf. (22)) or when it combines with a perfect that is interpreted as an indefinite perfect (cf. 21)).

[21] The asterisk is in brackets because, as we shall see below, whilst the default interpretation leads to an unacceptability judgment, in special contexts this sentence can receive readings in which the progressive is acceptable.

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always seven smoked cigarettes, but rather describes an activity of cigarette-smoking which happened to have as a result seven cigarette-ends in the ashtray. In other words, the default interpretation of (39) is atelic and bounded. The fact that the number in the numerical NP has a role in establishing boundedness but no role as (part of) an inherent endpoint means that the progressive is unacceptable in (41), under this default interpretation, because there is no way of interpreting the numerical NP without creating a conflict with the unboundedness of the progressive (and vice versa).

There are two special (pragmatically unlikely, but theoretically possible) readings of (41) which result in acceptability of the progressive. (The first of these is not readily accessible for (39), and is only brought out by the use of the progressive. However, Binnick (1991: 190) argues that this reading is in fact possible even in the non-progressive (39) (see footnote 7).) The first reading is that in which the person was smoking seven cigarettes simultaneously, either literally or because, being particularly absent-minded, he had lit one cigarette, forgotten that he had lit it, lit another, and so on, with the result that at the time referred to by (41) he was alternately taking puffs from seven different cigarettes which were all alight at the same time, and he could thus be considered to be smoking all seven at once. On this 'simultaneous' reading, the sentence is atelic and unbounded, and, because unbounded (and nonstative), compatible with the progressive. The second special reading of (41) is one in which the smoker was working towards a goal of smoking seven cigarettes – for example, in order to win a bet. In this case, (41) is telic and unbounded. In neither of these readings is there a clash between the progressive and the presence of the numerical NP, because in neither case does the NP bound the situation. In both readings, we have a situation of *smoking seven cigarettes* rather than a situation of *smoking cigarettes* which is limited, in terms of the situation referred to by the speaker (rather than limited inherently), to seven cigarettes. That is, on the atelic consecutive (default) reading of (39), it may well be that in the actual world the smoker smoked fifteen cigarettes, but the situation referred to is bounded by *seven*. This bounding (and only bounding) effect of the NP conflicts with the progressive, so that the default reading of (39) is unacceptable. But on the simultaneous reading of (39), (assuming that Binnick is correct and that we can posit a simultaneous reading in (39)), there is no series of cigarette-smoking situations to be bounded by *seven*: *seven* is an inherent part of a single process of smoking seven cigarettes, so that on its simultaneous reading, (39) is unbounded and there is consequently no problem in combining this reading with the progressive in the simultaneous reading of (41).[22] In the telic bounded reading of (39) (*They didn't*

[22] It may look promising to explain the restrictions in terms of scope. However, it does not seem satisfactory simply to say that differences in the scope of the number in the numerical NP account for differences in acceptability of the combination of the numerical NP with the progressive: the interesting question is what differences of meaning, in terms of the situations referred to, affect the acceptability of the progressive in such a combination, whether or not these differences in the situations referred to also affect the scope of the number in the NP. In effect, it seems to us that while differences in scope often

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think he'd take up the challenge to smoke seven cigarettes, but he smoked seven cigarettes and so won the bet), the numerical NP has a dual role: it bounds the situation but it also characterizes the inherent endpoint of the situation, so that, for the same reason as was given in respect of (34) and (36), the combination with the progressive in (41) is acceptable: the NP is still interpretable, but now only as an inherent endpoint (in a single situation of 'smoking seven cigarettes') which was not yet reached at the time referred to by (41).

What this evidence tells us is, first, that the presence of a numerical NP object does not automatically establish a telic reading, nor does it automatically establish a bounded reading. Secondly, however, the evidence tells us that what is crucial in determining the acceptability of the progressive in a sentence with a numerical object NP is the role of the NP itself in establishing telicity and boundedness. A nonprogressive sentence with a numerical NP object can always be made progressive if the numerical NP is seen as characterizing the inherent endpoint of a telic situation. If it is interpreted as bounding the situation, then in combination with the progressive it can no longer be interpreted as doing so, but it can still receive an interpretation as characterizing the inherent endpoint of the situation. (The fact that this endpoint is not reached at the time referred to does not in any way affect its status as *inherent* endpoint, of course.) A nonprogressive sentence with a numerical NP object in which the NP does not establish telicity can only combine with the progressive if an interpretation is available for the progressive sentence in which the NP does not bound the situation.

This analysis of the interaction between the past progressive, (a)telicity, (un)-boundedness, and numerical object NPs is a useful starting point for discussion of the use of a perfect progressive in combination with a numerical object NP.

4 The present perfect progressive, (un)boundedness, (a)telicity, and numerical object NPs

In the previous section, we tried to show that it is wrong to take the presence of a numerical object NP as an indication that the sentence is telic. We also argued that to explain certain constraints on the use of the past progressive, the interaction between the numerical NP, (a)telicity, and (un)boundedness needs to be taken into account. In this section we shall focus more closely on the role of numerical NPs in constraints on the acceptability and interpretation of the PPP.

4.1 Preliminaries

First, it may be useful to repeat that sentences with an indefinite perfect are bounded; those with a continuative perfect are unbounded (cf. section 2.2). In what

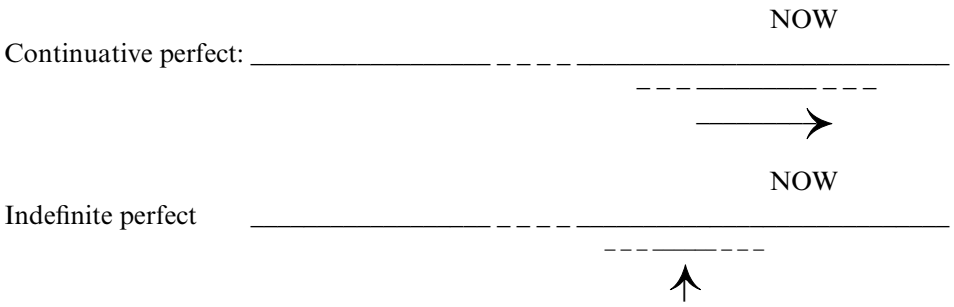
correlate with differences in acceptability of the combination of a numerical NP with the progressive, these scope differences do not actually *cause* the differences in acceptability.

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follows, we will first (section 4.2) deal with the continuative perfect examples. After that, in section 4.3, we will treat the indefinite perfect examples.

A second preliminary is that the presence of a numerical object NP does not automatically imply that there is reference to a series of consecutive situations, i.e. that there is reference to a repetitive situation composed of subsituations following each other. This is already clear from the unbounded atelic reading compatible with *He was smoking seven cigarettes*, in which there is reference to one situation that involves the smoking of seven cigarettes. Moreover, there need not be a relationship of strict simultaneity between the situations in order for them to qualify as *one situation*. It seems indeed difficult to be literally smoking seven cigarettes at the same time (smoking two cigarettes is more readily compatible with a strict simultaneity reading). Still, as there is overlapping, the smoking situations may be said to be simultaneous and therefore we can say that there is reference to one situation.

Another important observation is that the function of the progressive marker combined with an indefinite perfect is to represent the situation as in progress at the time at which the situation is located. If the progressive perfect is continuative, the progressive stresses the continuation of the situation until the moment of speaking. The following visualization may bring out the difference that we have in mind, the arrow indicating the effect of the progressive:



The following examples contain a numerical object NP. Some sentences allow, or indeed demand, the use of the progressive; in others, the progressive is unacceptable:

(42) (a) The Red Cross *has been helping* (*have helped*) twenty people every year for five years now.
(b) I *have been making* (*have made*) three cakes.
(c) Jane *has been sipping* (*has sipped*) three drinks. (simultaneous reading)
(d) I *have been trying* (*have tried*) twenty methods, but so far, none of them has worked.

(43) (a) (*) I *have been eating* (*have eaten*) twenty apples. (context where someone has eaten twenty apples)
(b) (*) We *have been receiving* (*have received*) twenty complaints. (context where someone has received twenty complaints)

(44) (a) I *have been knitting* (* *have knitted*) three jumpers for a fortnight.
(b) I *have been writing* (* *have written*) three letters all morning, but I still haven't finished them.

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These examples prove that formulating constraints on the use of the PPP in terms of the presence of a numerical object NP is not adequate.

In the following section, we will concentrate on the continuative PPP examples ((42a), (42d), (44a), (44b)) and explain how the progressive, the numerical NP, (a)telicity and (un)boundedness interact in establishing an acceptable sentence.

4.2 The continuative PPP

The relationship between the progressive and the continuative perfect plus numerical object NP is uncomplicated. Whenever a PPP sentence can be interpreted as referring to a single situation (whether a habit or a single activity) that has started in the past and is on-going at speech time, the presence of a numerical NP does not clash with the progressive.

Example (44a) refers to a single process of knitting three jumpers which started a fortnight ago and is on-going at speech time. For the sentence to be acceptable, it cannot be interpreted as referring to a series of jumper-knitting activities bounded by *three*, but only as referring to one unbounded activity of knitting three jumpers. This interpretation can be arrived at either by assuming a context in which all three jumpers are literally knitted simultaneously (for example, on three machines) or by assuming that the speaker has been working alternately on all three, rather than finishing one before moving on to the next. Note that, unlike some cases noted in our discussion of the past progressive, the option of interpreting this sentence as referring to an interrupted telic process of knitting three jumpers (a single process consisting of three discrete subsituations) is not available. The same applies to (44b), where the only available interpretation is a continuative one in which there are not three separate activities of letter-writing; but a single on-going (unbounded) activity, so that the writing of the three letters has to be seen as either literally simultaneous (unlikely) or loosely simultaneous – the speaker has been adding a bit to one letter, then to another, and so on, rather than completing each of three letters consecutively. Essentially, (42d) is the same sort of interpretation: there is reference to a single process of trying twenty methods which started in the past and is on-going at speech time.

In (42a), the numerical NP *twenty people* does not bound the situation referred to, because the situation referred to is 'help twenty people every year'. The sentence refers to a habit – i.e. a single situation – of helping twenty people every year which started five years ago and persists at speech time and is thus unbounded. *Twenty* bounds each of the subsituations within the habit of helping twenty people every year, but it does not bound the overall situation. Accordingly, there is no conflict between a bounded situation and the progressive.

4.3 The indefinite PPP

In our view, the indefinite perfect is always bounded, irrespective of the presence or absence of the progressive (cf. examples in (21) and the discussion of (24) and (25)).

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The question, then, that needs to be answered is why it is possible at all to combine a progressive form, which brings about an unbounded reading, with an indefinite perfect, which is inherently bounded. To explain this, we need to take a closer look at the temporal structure of tenses. It has been suggested (cf. e.g. McCoard, 1978: 92; Declerck, 1996: 64) that apart from the Reichenbachian R, there is another kind of reference time inherent in every tense: every situation is located at or simultaneous with a certain time, which Declerck calls *situation-time of orientation* (STO) (Declerck, 1996: 64). In other words, Reichenbach's E should rather be seen as composed of a situation (E) that is simultaneous with a time (STO). This means that the temporal structure of the indefinite perfect is: E, STO – R, S. To determine whether the progressive can be used in indefinite perfect sentences, we need to assess its compatibility with the situation that is simultaneous with the STO, i.e. with the situation that the indefinite perfect refers to. This is no *ad hoc* proviso: there is no contradiction between the claim that a sentence with an indefinite perfect always represents a situation as bounded (irrespective of whether the progressive is used or not) and the observation that to determine whether the progressive can be used, we need to assess its compatibility with the situation that the perfect refers to. Moreover, in the case of the preterite, R, STO and E coincide (E, STO, R – S), which means that the restrictions on the use of the progressive we have formulated in the previous section are in fact also constraints on the compatibility of 'the situation that is simultaneous with the STO' with the progressive.

There appear to be three cases where the indefinite PPP can combine with a numerical NP. The sentence in (42c) (*Jane has been sipping three drinks*) illustrates a first possibility. We can imagine Jane putting straws in three bottles and sipping simultaneously from three bottles. In that case, the referents of the numerical object NP are together involved in one single situation. The situation is not repetitive, it is one single unbounded and atelic situation and therefore it is compatible with the progressive, which represents the situation as 'on-going'. This simultaneous reading is in fact compatible with both an indefinite and a continuative interpretation of the situation. The same applies if (42c) is interpreted as meaning that Jane has been bought three drinks by three different people and has been politely sipping from them *alternately*, not wanting to offend any of the people who bought them.

As we have seen is the case with the continuative perfect, it is not possible to make a PPP sentence with a numerical NP acceptable as a 'single situation' by interpreting it as an 'interrupted telic situation', i.e. in the way that the 'interrupted telic' (betting context) reading of *He was smoking seven cigarettes* allows the use of the progressive. Although it is not perfectly clear to us why this should be the case, it seems to be related to the effect noted earlier, in the difference between *I was eating an apple* and *I have been eating an apple*, that the PPP does not exclude the endpoint of a telic sentence in the same way as the past progressive does.

We might therefore expect that in a PPP sentence with a numerical NP object, if the numerical NP cannot be interpreted with a simultaneity reading, and thus as a single unbounded situation, it must be understood to bound the situation, and since

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this bounding effect cannot be undone by an 'interrupted telic' reading, there is inevitably a clash between the bounding effect of the NP and the unbounding effect of the progressive, resulting in unacceptability. Examples (45) and (46) would seem to substantiate this since neither allows a simultaneous interpretation:

(45) ??! I have been running seven marathons.
(46) ??! She has been performing three swallow-dives.

However, there are two cases for which this generalization does not hold. The first is the explanatory-resultative perfect, which is exemplified by (42b) (*I have been making three cakes*). This use of the progressive perfect commonly referred to in grammars (cf. e.g. Declerck, 1991: 164; Quirk et al., 1985: 212) is characterized by the fact that 'the activity has recently stopped' (Leech, 1987: 15) and that 'the effects of the activity are still apparent' (Leech, 1987: 51). In this case, it seems to us that we have a mixture of indefinite and continuative meaning: it is possible (albeit not necessary) to interpret this sentence as referring to a process of cake-making which has resulted in three made cakes, but the speaker is simultaneously evoking some present (and thus ongoing) situation which can be explained by reference to the completed past situation. This is not the immediate result (i.e. the realized inherent endpoint) of making three cakes – i.e. three made cakes – but an implicit (and often explicitly elaborated) 'side-effect' (*that's why I'm covered in flour*). The (implicit) reference to a present situation (here of being covered in flour) means that the addition of the progressive in explanatory-resultative perfect sentences changes the numerical NP's role from that of bounding the situation to that of being an internal part of a process leading up to a current state: *I've been getting into the state that I'm in via a (single) process of making three cakes*.

The second case in which an indefinite present perfect is compatible with the progressive is when it is used in response to a question about the addressee's (or someone / something else's) employment of a period leading up to and stopping at speech time. In this case, the question itself automatically provides temporal bounding of whatever situation is referred to in the reply. The result is that when an indefinite PPP sentence with a numerical NP object is used to reply to such a question, the numerical NP cannot be seen as bounding the situation itself. In such cases, even where it is virtually impossible to arrive at an explanatory-resultative interpretation of the PPP, a numerical NP is always acceptable:

(47) What have you been doing with yourself for the last two years? – I have been running seven marathons.
(48) What has she been doing? – She has been performing three swallow-dives.

The effect of the question in these examples is the same as the effect of the question in (23), which, together with the contrasting (22), is repeated below:

(22) A: When were you working in the library?
B: I was working in the library from four to five o'clock. (bounded)
(23) A: What were you doing from four to five o'clock?
B: I was working in the library from four to five o'clock. (unbounded)

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In (22), the temporal adverbial in the reply gives new information and is understood as bounding the situation. In (23), the question provides the temporal boundary of whatever situation is referred to in the response. Thus, the role of the temporal adverbial in the reply in (23) is not bounding. The question in (23) asks B to fill in a value for the variable 'activity X between four and five'. The value that is supplied in B's response is *working in the library*, which in itself is not bounded: B's response is effectively, 'the activity I was engaged in between four and five consisted of the (unbounded) activity of working in the library'.

Similarly, in (47), the question asks the addressee to fill in a value for the variable 'activity during a period of time finishing at speech time'. The numerical object NP is not seen as bounding a situation of running marathons, because the whole situation of running seven marathons supplies the value for the variable 'activity during a period of time finishing at speech time' which is itself bounded. The reply in (47) refers to an unbounded situation; 'being engaged in the activity of running seven marathons'.

The same explanation as we have applied to (47) accounts for the fact that we have bracketed the asterisk on the examples in (43a) (*I have been eating twenty apples*) and (44a) (*I have been receiving twenty complaints*). The sentences are acceptable if they are understood as replies to the question *What have you been doing?*

5 Conclusion

The hypotheses outlined here have been inspired by the wish to provide an explanation for what seem, at first sight, similar examples with differing acceptability. The conclusion must be that formulating constraints in terms of situation type or even in terms of the (un)bounding effect of NPs as such is not explanatorily adequate. One needs to have a closer look at the building blocks of the situation type, the semantics of the situation, and the interaction between the (un)bounding effects of the NPs and the progressive, the (un)boundedness inherent in the type of perfect used and the functions of the progressive.

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