

(A)telicity and the mass-count distinction

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Abstract

Many linguists have pointed out a correspondence between the mass-count distinction in the nominal domain and the aspectual classification in the verbal domain. An analogy is made between atelic verbal predicates and mass nouns on the one hand, and telic verbal predicates and count nouns on the other hand, based upon the form of quantification and the (un)boundedness of the denotation (cf. Jackendoff 1991). To draw such a parallel between the verbal and nominal domains, verbal predications are related to their nominalizations, assuming that there is a direct semantic correspondence between them (cf. Mourelatos 1978). In this study, I further investigate the issue of aspectual inheritance in nominalizations, and the correlation between the mass-count nominal feature and (a)telicity. I focus on French nouns derived from activity verbs (ANs), as they seem to be a case of non-systematic preservation of aspect. It is argued that (i) some French ANs are count nouns, while others are mass nouns; (ii) all French ANs inherit the aspectual properties of their base verbs; (iii) the mass-count distinction does not correlate with (a)telicity, but rather with the description of *occurrences*, i.e. of dynamic particulars. So nominal boundedness does not parallel verbal boundedness, and nominal and verbal Aktionsarten are not isomorphous: different sets of aspectual features apply to each category. The grammatical specificities of the V and N categories determine the aspectual features that are relevant for each category.

**(A)TELICITY AND THE MASS-COUNT DISTINCTION:
THE CASE OF FRENCH ACTIVITY NOMINALIZATIONS¹**

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Introduction

Numerous authors have pointed out a correspondence between things and events on the one hand, and stuffs and processes on the other, based upon a parallel between the mass-count distinction in the nominal domain and the aspectual classification in the verbal domain (cf. Mourelatos 1978, Bach 1986, Krifka 1989, Jackendoff 1991, Brinton 1995, Meinschaefer 2005 *inter alia*). As Jackendoff noted, such an analogy relies upon the (un)boundedness of what is denoted by linguistic expressions:

- | | | |
|-----|---|------------------|
| (1) | UNBOUNDED
There is mud all over the floor.
John is sleeping. | STUFF
PROCESS |
| (2) | BOUNDED
There is a chair in the corner of the room.
Mary gave birth to a baby girl. | THING
EVENT |

(Un)boundedness determines the form of quantification that applies in each case. Only bounded elements can be counted, that is, only (2) can combine with cardinal determiners (e.g. *three*) or count cardinal adverbials (e.g. *three times*). Unbounded elements, on the contrary, are mass-quantified: only (1) can combine with mass determiners (e.g. *much*) or degree adverbials (e.g. *a lot*).

In order to show that process/event predications are mass/count-quantified, Mourelatos (1978: 425-427) relates them to their nominalizations. Whereas processes yield mass nouns, events derive count nominals:

- | | | |
|-----|---|-------------------|
| (3) | a. John pushed the cart for hours.
b. For hours there was pushing of the cart by John. | PROCESS
MASS N |
| (4) | a. Mary capsized the boat.
b. There was a capsizing of the boat by Mary. | EVENT
COUNT N |

This argument assumes that there is a direct semantic correspondence between a verbal predication and its nominalization, and in particular that nominalizations inherit the aspectual properties of their base.

In this study, I further investigate the issue of aspectual preservation in nominalizations, and the correlation between the mass-count nominal feature and the (un)boundedness of aspect. I will focus on French process nominalizations, i.e. French nouns derived from activity verbs (ANs), for they seem to be an interesting case of non-immediate preservation of aspect (cf. Haas & Huyghe 2010). It will be argued that:

- (i) some French ANs are count nouns;
- (ii) count ANs do preserve the aspectual properties of their verbal bases;

- (iii) the mass-count distinction does not correlate with (a)telicity (lexical aspect boundedness), but rather with the description of *occurrences*, i.e. of dynamic particulars.

But first we have to clarify what might raise a confusion about the analogy established in (1)-(2), namely which linguistic units are considered when comparing boundedness in the nominal and verbal systems.

1. Levels of boundedness

(Un)boundedness in the nominal and verbal domains operates on various levels. As far as nouns are concerned, two levels of boundedness can be distinguished: one depending on Ns and one depending on NPs. Nouns such as *cat*, *chair* or *idea* are inherently count nouns²; they are mostly used in count NPs, e.g.:

- (5) a cat, two chairs, several ideas

Nouns such as *mud*, *flour* or *intelligence* are mass nouns; they are generally used in mass NPs, e.g.:

- (6) a lot of mud, enough flour, much intelligence

Still there may be some coercion, count nouns being used in mass NPs as well as mass nouns being used in count NPs. For instance, count Ns can be treated as mass Ns thanks to the “universal grinder” (Pelletier 1979) as in (7), whereas mass Ns can have a variety reading and be used as count Ns, as in (8):

- (7) After I ran over the cat with our car, there was cat all over the driveway. (Langacker 1991: 73)
- (8) He makes excellent loaves by combining three flours.

I will not dwell on these well-known facts. The point here is that in the case of coercion, nouns keep their original mass-count feature, even though the mass or count determiner coerces them in ultimately specifying the value of the NP. Count Ns in mass NPs, mass Ns in count NPs still remain lexically categorized respectively as count ([+bounded]) and mass ([−bounded]) Ns.

The same kind of phenomenon is observed in the verbal system, except that there are more parameters of boundedness than in the nominal domain. There is general agreement on events (accomplishments and achievements in Vendler’s terminology) and processes (Vendler’s activities) as being respectively bounded and unbounded dynamic situations. However there is a considerable amount of discussion about which units they correspond to (cf. Verkuyl 1972, Mourelatos 1978, Dowty 1979, Rothstein 2004, Rappaport Hovav 2007 *inter alia*). The four traditional classes of states, activities, accomplishments and achievements have been said to be verb types, VP types, or even sentential types. In the last case, grammatical aspect can be involved, notably the (im)perfective aspect, which is ordinarily characterized as (un)bounded.

So boundedness in the verbal domain can be specified at different levels. For instance, a verb like *run*, considered unbounded without any complement, will be labelled as bounded when combined with constituents such as *a mile* or *to the store*:

- | | | |
|-----|-----------------------------|-----------|
| (9) | run | UNBOUNDED |
| | run (a mile / to the store) | BOUNDED |

In addition to this, there is a grammatical layer of boundedness:

- | | | |
|------|--|-----------|
| (10) | John is running. | UNBOUNDED |
| | John has run. | BOUNDED |
| (11) | John has run (a mile / to the store). | BOUNDED |
| | John is running (a mile / to the store). | UNBOUNDED |

These levels of boundedness need to be clearly distinguished when categorizing event and process predications. The parallels established in (1) and (2) are ambiguous as to whether the (un)bounded marking applies to lexical aspect or to a compositional aspect taking into account the (im)perfective tense. Indeed, the terms *process* and *event* have been used to categorize sentences, verbs and verb phrases (see for instance Mourelatos 1978 vs. Bach 1986).

The analogy that will be studied here concerns lexical types. The fact that in both nominal and verbal cases there is a lexical input that, even if it may be contextually coerced or shifted (cf. Zucchi 1998), can be marked as (un)bounded allows such an analogy. It seems relevant to compare the mass-count distinction as a lexical feature to the (un)bounded lexical component of aspect—more generally called (a)telicity³. In other words, as suggested in Brinton (1995), the analogy in (1)-(2) deals with Aktionsart. It can be reformulated as follows:

- | | | |
|------|------------|-----------------------|
| (1') | UNBOUNDED | |
| | mud | MASS N |
| | sleep | ATELIC SITUATION TYPE |
| (2') | BOUNDED | |
| | chair | COUNT N |
| | give birth | TELIC SITUATION TYPE |

I assume that verbs in themselves can be aspectually classified with respect to their standard use—pretty much in the same way that nouns in themselves are categorized as mass or count. The verbs considered here as activity verbs (AVs) will be the dynamic durative intransitive ones, or the dynamic durative transitive ones whose unboundedness does not depend upon that of the internal argument—the so-called ‘PUSH-verbs’ (Verkuyl 1993)⁴. Some intransitive (12) and transitive (13) French AVs are listed below:

- | | |
|------|--|
| (12) | jardiner ‘do some gardening’, voyager ‘travel’, batailler ‘battle’, braconner ‘poach’, jongler ‘juggle’, discuter ‘talk’, flâner ‘saunter’, nager ‘swim’, randonner ‘hike’, dialoguer ‘converse’, manifester ‘demonstrate’, naviguer ‘sail’, pédaler ‘pedal’, marcher ‘walk’, ronfler ‘snore’ |
| (13) | pousser ‘push’, espionner ‘spy on’, promener ‘take out’, gouverner ‘govern’, célébrer ‘celebrate’, rechercher ‘look for’, utiliser ‘use’, bombarder ‘bomb’, simuler ‘simulate’, prier ‘pray’, frotter ‘rub’, pratiquer ‘practise’, rêver ‘dream’, rabâcher ‘keep repeating’, réprimander ‘reprimand’ |

All of these verbs combine with *pendant* (‘for’) adverbials but not with *en* (‘in’) adverbials, regardless of the delimitation of their internal argument (when one is required):

- (14) a. Sylvain a jardiné pendant deux heures.
(‘Sylvain gardened for two hours.’) ‘Sylvain did some gardening for two hours.’
b. *Sylvain a jardiné en deux heures.
(‘Sylvain gardened in two hours.’) ‘Sylvain did some gardening in two hours.’
- (15) a. J’ai poussé (un chariot / des chariots) pendant deux heures.
‘I pushed (a cart / carts) for two hours.’
b. *J’ai poussé (un chariot / des chariots) en deux heures.
‘I pushed (a cart / carts) in two hours.’

This study deals with the nominalizations of such verbs. Two questions will be addressed: do these nominalizations inherit the unboundedness of their base verbs, and does their mass-count quality correspond semantically to (a)telicity?

2. French activity nominalizations: a heterogeneous class

It has been noticed that French ANs can be mass and/or count nouns (cf. Flaux & Van de Velde 2000, Heyd & Knittel 2009, Haas & Huyghe 2010). Three cases can be distinguished:

- (i) mass ANs: *jardinage* ‘gardening’, *natation* ‘swimming’, *jonglage* ‘juggling’, *braconnage* ‘poaching’, *patinage* ‘skating’, *espionnage* ‘spying’, *rabâchage* ‘harping on’, etc.
- (ii) count ANs: *manifestation* ‘demonstration’, *promenade* ‘stroll’, *bombardement* ‘bombardment’, *discussion* ‘discussion’, *voyage* ‘trip’, *bataille* ‘battle’, *célébration* ‘celebration’, etc.
- (iii) mass-count ANs: *danse* ‘dance/dancing’, *recherche* ‘research’, *randonnée* ‘hike/hiking’, *chasse* ‘hunt/hunting’, *marche* ‘walk/walking’, *pratique* ‘practice’, *dialogue* ‘dialogue’, etc.⁵

Indeed, the standard use of type (i) and (ii) ANs involves respectively a mass or a count determiner. Type (iii) accepts both:

- (16) a. du jardinage ‘some gardening’, un peu de natation ‘a bit of swimming’, beaucoup de jonglage ‘a lot of juggling’
b. *plusieurs jardinages ‘several gardenings’, *trois natations ‘three swimings’, *quelques jonglages ‘a few juggleries’
- (17) a. deux manifestations ‘two demonstrations’, quelques promenades ‘a few strolls’, plusieurs bombardements ‘several bombardments’
b. *de la manifestation ‘some manifestation’, *beaucoup de promenade ‘a lot of stroll’, *un peu de bombardement ‘a bit of bombardment’⁶
- (18) a. de la danse ‘some dancing’, beaucoup de recherche ‘a lot of research’, un peu de randonnée ‘a bit of hiking’
b. trois danses ‘three dances’, plusieurs recherches ‘several researches’, quelques randonnées ‘a few hikes’

The role of morphology in the distribution between count and mass ANs is not immediately apparent, since *-age*, *-ion*, *-ment*, *-ade* suffixes and the conversion apply to all kinds of eventualities and can derive mass nouns as well as count ones. I will come back to this issue in section 6.

As mass nouns, type (i) ANs show the property of cumulative and distributive reference (cf. Quine 1960, Cheng 1973), that is, they refer to homogeneous entities without any inherent delimitation. Mass ANs denote durative unbounded actions. Van de Velde & Flaux (2000: 101-102) note that they can combine with a durative mass determiner (19a), but not with a complement of duration (19b), which presupposes that the nominal head is countable:

- (19) a. deux heures de jardinage ‘two hours of gardening’, deux jours de patinage ‘two days of skating’, deux mois d’espionnage ‘two months of spying’
 b. *un jardinage de deux heures ‘a two-hour gardening’, *un patinage de deux jours ‘a two-day skating’, *un espionnage de deux mois ‘a two-month spying’

Because they are unbounded and durative, mass ANs seem to correspond to activities, as defined in verbal Aktionsart. The mass feature in dynamic nominalizations seems to correlate with atelicity in the verbal domain.

Mass ANs are mostly used in the *faire du N* (‘do some N’) structure (20) and in generic singular NPs (21), notably as psych verbs internal arguments (Heyd & Knittel 2009):

- (20) faire (du jardinage / de la natation / du patinage / du braconnage / du jonglage)
 ‘do (some gardening / some swimming / some skating / some poaching / some juggling)’
- (21) a. (Le jardinage / la natation / le patinage / le braconnage / le jonglage), c’est agréable.
 (‘(Gardening / swimming / skating / poaching / juggling), it is nice.’) ‘(Gardening / swimming / skating / poaching / juggling) is nice.’
 b. Sylvain aime (le jardinage / la natation / le patinage / le braconnage / le jonglage).
 ‘Sylvain loves (gardening / swimming / skating / poaching / juggling).’

The verb *faire* in *faire du N* is a light verb. *Faire du N* can be considered as a synonymous to the verb the AN is derived from:

- (22) a. Pierre (a jardiné / a nagé / a patiné) ce matin = Pierre a fait (du jardinage / de la natation / du patinage) ce matin.
 ‘Pierre (did some gardening / swam / skated) this morning’ = ‘Pierre did (some gardening / some swimming / some skating) this morning.’
 b. Pierre (jardine / nage / patine) souvent = Pierre fait souvent (du jardinage / de la natation / du patinage).
 ‘Pierre often (does some gardening / swims / skates)’ = ‘Pierre often does (some gardening / some swimming / some skating).’

The *faire du N* structure involves an activity reading, even when used with concrete nouns (cf. Giry-Schneider 1978, Van de Velde 1997). Expressions such as *faire du cheval* (‘do some horse riding’), *faire du piano* (‘play the piano’), *faire du théâtre* (‘do some theatre acting’), denote a typical activity associated with the object denoted by the noun in complement position. All of these verbal constructions combine with *pendant* (‘for’) adverbials only:

- (23) a. J’ai fait (du jardinage / du cheval) pendant deux heures.
 ‘I did (some gardening / some horse riding) for two hours.’
 b. *J’ai fait (du jardinage / du cheval) en deux heures.
 ‘I did (some gardening / some horse riding) in two hours.’

As for *le N* generics, as in (21a), they build upon the non-distinction of individuals. For Corblin (1987), *le N* refers to a type, or species, without denoting any particular entity. Kleiber (1990) has claimed that this form of generic denotation was a mass-like one, involving homogeneous reference, and not distinguishing between individuals of the N-kind. *Le N* differs from generic plural *les N*, which denotes an open class of entities, and is unusable with mass ANs:

- (24) *(Les jardinages / les natations / les patinages), c'est agréable.
(‘(Gardenings / swimmings / skatings), it is nice.’) ‘(Gardenings / swimmings / skatings) are nice.’

Being inherently unbounded, mass ANs are not compatible with this individual-based form of genericity. Mass ANs do not denote classes of delimited entities.

As opposed to mass ANs, count ANs refer to inherently bounded situations—one necessary condition for them to be countable. Count ANs may have a duration complement. Examples in (25) contrast with those in (19b):

- (25) une promenade de deux heures ‘a two-hour stroll’, un bombardement de deux jours ‘a two-day bombardment’, un voyage de deux mois ‘a two-month trip’

Unlike mass ANs, count ANs denote events—this term being used here in its most common meaning, as denoting occurrences, i.e. things that take place in space and time. Indeed only count ANs can be the subject of *avoir lieu* (‘take place’):

- (26) (La manifestation / la discussion / la promenade / la célébration / la bataille) a eu lieu dans l'après-midi.
(‘(The demonstration / the discussion / the stroll / the celebration / the battle) took place in the afternoon.’)
- (27) (*Le jardinage / *le jonglage / *le braconnage / #le patinage / #la natation) a eu lieu dans l'après-midi.
(‘(The gardening / the juggling / the poaching / the skating / the swimming) took place in the afternoon.’)

Count ANs are commonly used in prototypical eventive constructions, such as (28) (cf. Van de Velde 2006, Huyghe & Marín 2007):

- (28) a. Il y a eu des manifestations violentes à Khartoum le mois dernier.
(‘There were violent demonstrations in Khartoum last month.’)
- b. La bataille de Valmy a été un événement marquant.
(‘The Battle of Valmy was a memorable event.’)
- c. Son voyage au Japon a été reporté à l'année prochaine.
(‘His trip to Japan was postponed until next year.’)

Count ANs easily denote specific entities, i.e. particulars, individuated and identified by their spatio-temporal properties. Unlike mass ANs, count ANs can be used in generic plural NPs. Their generic use may involve the denotation of a class of entities, not necessarily a type reading:

- (29) a. (Les voyages / les promenades / les manifestations), c'est sympa.
(‘(Trips / strolls / demonstrations), it is nice.’) ‘(Trips / strolls / demonstrations) are nice.’

- b. Les généraux raffolent (des bombardements / des batailles / des célébrations).
 ‘Generals are crazy about (bombardments / battles / celebrations).’

With respect to their ability to denote events, count ANs are similar to nominalizations of telic Vs or VPs, like the ones in (30):

- (30) (L'accouchement / le cambriolage / la vente / l'inauguration / la perquisition) a eu lieu dans l'après-midi.
 ‘(The delivery / the burglary / the sale / the inauguration / the house-search) took place in the afternoon.’

Contrary to mass ANs, count ANs seem not to preserve the unbounded feature of their base verbs. For Haas *et al.* (2008), there is an aspectual discrepancy between these nouns and the verbs they derive from, because the former do not denote, strictly speaking, activities. The heterogeneous correspondence between activity verbs and their nominalizations is illustrated in the following table:

	[±dynamic]	[±durative]	[±bounded]
<i>jardiner / manifester</i>	+	+	–
<i>jardinage</i>	+	+	–
<i>manifestation</i>	+	+	+

Table 1. Boundedness as a lexical feature in activity verbs and nominalizations

3. Homogeneity and boundedness

The discrepancy between count ANs and their corresponding verbs has to be further investigated, for the aspectual shift between the two categories is not complete. First, as indicated above, count ANs inherit the dynamic and durative properties of their base verbs. They differ from achievement nominalizations (31b) and resemble accomplishments (31c) in that they are compatible with duration complements (25), and can be the subject of *durer* (‘last’):

- (31) a. (La promenade / le voyage / le bombardement) a duré quatre heures.
 ‘(The stroll / the trip / the bombardment) lasted four hours.’
 b. *(L'assassinat / la naissance / la découverte) a duré quatre heures.
 ‘(The murder / the birth / the discovery) lasted four hours.’
 c. (L'accouchement / la vente du tableau / la réparation du vélo) a duré quatre heures.
 ‘(The labour / the sale of the painting / the repairing of the bike) lasted four hours.’

Secondly, a comparison between count ANs and accomplishment nominalizations shows that the former have a homogeneous denotation. Count ANs are similar to AVs in this respect.

In the verbal system, when homogeneity is expressed, the past progressive entails the simple past. This entailment holds for activities, but not for accomplishments, inducing in the latter case the ‘imperfective paradox’ (Dowty 1979):

- (32) a. John was drawing a circle DOES NOT ENTAIL John drew a circle.
 b. John was pushing a cart ENTAILS John pushed a cart.

As a consequence, it can be said of interrupted activities that they did take place. This is not valid for accomplishments. When used as a complement of *stop*, only activity verbs entail the simple past form (Dowty 1979: 57):

- (33) a. John stopped painting the picture DOES NOT ENTAIL John did paint a picture.
b. John stopped walking ENTAILS John did walk.

Homogeneous actions, unlike heterogeneous ones, may be considered as performed as soon as they have begun. Their interruption does not prevent them from having taken place. This principle can be adapted to the nominal domain. The construction of accomplishment nominalizations with *être interrompu* ('be interrupted') entails that the action was not completed (cf. Haas & Huyghe 2010: 112):

- (34) a. L'accouchement a été interrompu ENTAILS Elle n'a pas accouché.
'The labour was interrupted' ENTAILS 'She did not give birth.'
b. La vente du tableau a été interrompue ENTAILS Ils n'ont pas vendu le tableau.
'The sale of the painting was interrupted' ENTAILS 'They did not sell the painting.'
c. La réparation du vélo a été interrompue ENTAILS Il n'a pas réparé le vélo.
'The repairing of the bike was interrupted' ENTAILS 'He did not repair the bike.'

The same does not hold for count ANs:

- (35) a. La manifestation a été interrompue ENTAILS Ils ont manifesté.
'The demonstration was interrupted' ENTAILS 'They demonstrated.'
b. La promenade a été interrompue ENTAILS Ils se sont promenés.
'The stroll was interrupted' ENTAILS 'They strolled.'
c. La discussion a été interrompue ENTAILS Ils ont discuté.
'The discussion was interrupted' ENTAILS 'They talked.'

Nouns like *manifestation* indicate a final boundary, but the existence and the specification of this boundary are not implied by the nature of the denoted action. The action goes on in a homogenous way and then stops, at an unspecified moment. On the contrary, nouns like *accouchement* denote events whose nature depends upon the endpoint, for that endpoint is not only a final boundary but also a substantial necessary part of the action (often corresponding to a change of state). In other words, count ANs, though bounded, do not describe a culmination. They do not have a *telos* (natural point of completion) determining the end of the action.

Homogeneity is a common feature to both count ANs and AVs. But, as far as verbal classification is concerned, homogeneity implies unboundedness, i.e. atelicity, while it does not in the nominal domain. Nominal homogeneity and boundedness are not contradictory. A given noun may be countable and still denote homogeneous entities, as has been noted regarding concrete nouns like *beep*, *fence*, *line*, *pond*, *twig*—as opposed to classical heterogeneous count nouns like *tree*, *chair*, *computer* (cf. Mittwoch 1988, Langacker 1991, Kleiber 2001, Zucchi & White 2001, Rothstein *to appear*). Count ANs are the abstract nominal equivalents to these concrete homogeneous count nouns.

So count ANs do not denote telic actions. They do preserve the atelic feature of their base verbs, just like mass ANs do. As a corollary, the mass-count distinction does not correspond to the description of (a)telicity. Table 1 is misleading in that the [\pm bounded] feature that applies to verbs is not the same as the one that applies to nouns: as far as lexical aspect is concerned, verbal boundedness and nominal boundedness do not coincide. In the

verbal domain, lexical boundedness is restricted to telicity, or one could say, culmination (i.e. the presence of a *telos* in the event structure of the verb). Still, understood as atelic, the [–bounded] feature should apply to count ANs, and then it would not represent the mass-count distinction. Actually, the difference between mass and count ANs is not telicity but the ability to denote events (occurrences), as dynamic individuals that occur in space and time (cf. §2). In the nominal domain, lexical boundedness correlates with individuation—more precisely, in the case of nominalizations, with *occurrentiality*, i.e. the description of occurrences. As far as verbs are concerned, occurrentiality is not determined on the lexical level.

Table 2 clarifies Table 1:

	[±dynamic]	[±durative]	[±culmination]	[±occurrence]
<i>accoucher</i>	+	+	+	d.n.a.
<i>jardiner/manifester</i>	+	+	–	d.n.a.
<i>accouchement</i>	+	+	+	+
<i>jardinage</i>	+	+	–	–
<i>manifestation</i>	+	+	–	+

Table 2. Culmination and occurrentiality in verbal and nominal Aktionsarten

The verbal aspectual classification is not sufficient to account for nominal aspect: there is an Aktionsart feature that is relevant for nouns, but not for verbs.⁸

4. Occurrences in the verbal domain

We claimed that occurrentiality was not a verbal lexical property, but one may ask precisely what it corresponds to in the verbal domain. When involving verbs, the denotation of occurrences depends upon the sentential level; it includes tense and contextual specification.

Occurrences are denoted in examples (36):

- (36) a. Pierre (jardine / a jardiné / va jardiner) ce matin.
 ‘Pierre (is doing some gardening / did some gardening / will do some gardening) this morning.’
 b. Vincent (se promène / s’est promené / va se promener) ce matin.
 ‘Vincent (is strolling / strolled / will stroll) this morning.’

These sentences denote individuated dynamic situations. That kind of denotation relies upon tense and contextual elements, notably the specification of a spatio-temporal location. The combination of these parameters gives the condition to the specific reading of the action.

On the contrary, occurrences are not denoted in sentences involving habitual aspect (37) or type interpretation (38):

- (37) a. Pierre (jardine / jardinait / a l’habitude de jardiner) le matin.
 ‘Pierre (does some gardening / used to do some gardening / is used to gardening) in the morning.’
 b. Vincent (se promène / se promenait / a l’habitude de se promener) le matin.
 ‘Vincent (strolls / used to stroll / is used to strolling) in the morning.’
- (38) a. Sophie aime (jardiner / se promener).
 ‘Sophie loves (to swim / to stroll).’
 b. (Jardiner/ se promener), c’est agréable.
 ‘((Gardening / strolling), it is nice.)’ ‘(Gardening / strolling) is nice.’

Habitual readings are generally interpreted as based on a plurality of occurrences. *Vincent strolls in the morning* can be analyzed as *Vincent strolled that morning* + *Vincent strolled that morning* + *Vincent strolled that morning* + etc. Yet it does not literally refer to a plurality of occurrences, but rather, in a way that could evoke the mass quality of singular generic definite NPs (cf. §2), to a generic action. Habitual readings in French involve tense or an aspectual auxiliary expressing habit (*avoir l'habitude de* 'to be used to'), and contextual elements indicating a spatial and/or temporal recurrence. Note that habitual readings are not a matter of pure verbal morphology: tenses such as the simple present or the imperfect are not sufficient to determine the denotation of non-occurrences (see for instance *Pierre jardine le matin* 'Pierre is doing some gardening this morning' vs. *Pierre jardine ce matin* 'Pierre does some gardening in the morning').

Type readings as in (38) involve an infinitive form. The denoted action is not actualized in space and time, but referred to virtually as a kind of action. The sentences in (38) are stative and do not denote events.

The point here is that occurrenceality in the verbal domain is not determined by the semantics of the verb, but by various parameters depending upon sentential actualization. There is not anything in the verb meaning that specifies its ability to be involved in the denotation of occurrences⁹. In the nominal system, occurrences are denoted, strictly speaking, by NPs (e.g. *la manifestation* 'the demonstration', *cette vente* 'that sale', *le voyage de Pierre* 'Pierre's trip'). Nevertheless the denotation of occurrences is predetermined lexically, since nouns (i) contain elements of description that apply directly to referents, and (ii) give the conditions to their use and interpretation with determiners¹⁰. Evidence for nominal occurrenceality is that not all dynamic nouns can be used in NPs denoting occurrences. In the verbal system, occurrences are not denoted by verbs, nor by verbs along with their arguments, but by clauses. Verbs in themselves are not semantically programmed to denote occurrences as opposed to non-occurrences. In particular, occurrenceality does not depend upon the lexical boundedness of the verb, since both telic and atelic verbs can refer to occurrences and non-occurrences. Furthermore the denotation of occurrences and non-occurrences is possible with both AVs yielding mass nouns (*jardiner*) and AVs yielding count nouns (*se promener*), as seen in (36)-(38). The semantic distinction existing between count and mass ANs does not show up in the verbal domain.

We can compare nominal and verbal genericity here. As seen in §2, there is a difference in generic use between count and mass ANs, the latter being incompatible with plural generic NPs. Now the paraphrase of (38) involving NPs will naturally select a singular form for *jardinage*, but the plural will be preferred for *promenade*:

- (39) a. *Sophie aime le jardinage.*
'Sophie loves gardening.'
b. *Le jardinage, c'est agréable.*
('Gardening, it is nice') 'Gardening is nice.'
- (40) a. *#Sophie aime la promenade vs. Sophie aime les promenades.*
'Sophie loves stroll' vs. 'Sophie loves strolls.'
b. *?La promenade, c'est agréable vs. Les promenades, c'est agréable.*
('Stroll, it is nice') 'Stroll is nice' vs. ('Strolls, it is nice') 'Strolls are nice.'

The type reading associated with the singular generic definite NP in (39) is strictly equivalent to the non-occurrenceal interpretation of the verb in (38). But when count ANs are involved, the verbal type reading is hardly paraphrased by individual-based genericity. The generic

assertion is rather built upon the denotation of occurrences. Definite singular genericity, if not impossible, is less natural with count ANs: a sentence like *Sophie adore la promenade* will have a specific interpretation rather than a generic one. This is all the more remarkable, since very few nouns reject the singular generic definite form, and they usually do so because of their high level of semantic generality (cf. Kleiber 1990). The tendency of use illustrated in (40) reveals the occurrentiality of count ANs. Moreover, the contrast between the uniqueness of the verbal form in (38), whatever the verb is, and the singular vs. plural generic NPs in (39)-(40), depending on the AN involved, proves that dynamic nouns and verbs do not share the same properties, i.e. that there are semantic specificities in the nominal domain that do not exist in the verbal domain.

This difference between ANs and AVs can be explained by the grammatical properties of each category. The contextual elements determining occurrentiality in the verbal domain may lexicalize in the nominal domain because of categorial particularities, such as the absence of tense marking for nouns, or the inability to directly denote situations for verbs. Nouns, as reification devices, include more autonomous elements of description than verbs, which are fundamentally predicative units. So the structure of lexical aspect, i.e. the relevant properties that account for the aspectual specificities of lexical items, may be determined by the grammatical nature of these items.

5. The mass-count distinction and actualization aspect (un)boundedness

At this stage, another question may arise about the semantic relation between mass/count and aspect. If verbal occurrentiality is determined at the sentential level, depending upon tense and contextual parameters, is there any possible analogy between the mass-count distinction (i.e. occurrentiality in the nominal domain) and actualization aspect (un)boundedness? Indeed, actualization aspect, as defined in Declerck (2007), is concerned with the linguistic representation of actual situations, and is a property that applies to clauses, as opposed to verbs and VPs (see note 3). (Un)boundedness in actualization aspect relates to whether a given situation is represented as having temporal boundaries or not. Actualization aspect (un)boundedness differs from (a)telicity, with which it is compatible (cf. Depraetere 1995: 4-5):

- | | | |
|------|--|-------------------------------|
| (41) | UNBOUNDED ACTUALIZATION ASPECT
John was opening the parcel.
Judith was playing in the garden in the course of the afternoon. | TELIC
ATELIC |
| (42) | BOUNDED ACTUALIZATION ASPECT
John opened the parcel.
Judith played in the garden this afternoon. | TELIC
ATELIC ¹¹ |

The parallel between mass/count and (un)bounded actualization aspect is assumed by Declerck (2007: 59). Since both the mass-count quality of dynamic nouns and actualization aspect (un)boundedness are related to the description of temporal boundaries, count ANs seem to be semantically equivalent to atelic bounded. However this analogy is problematic because the representation of a situation as unbounded does not prevent it from being an occurrence, i.e. an individuated action. The sentences in (36) have an unbounded actualization aspect when used in the present, although they denote occurrences. The idea that in the following examples only (43a), as actually bounded, would correspond semantically to *une manifestation* ('a demonstration') does not seem intuitively correct:

- (43) a. Les agriculteurs ont manifesté à Paris.
 ‘The farmers demonstrated in Paris.’
 b. Les agriculteurs sont en train de manifester à Paris.
 ‘The farmers are demonstrating in Paris.’

Indeed, count ANs can be used in expressions that do not profile actual temporal boundaries, and still denote occurrences. For instance *une manifestation en cours* (‘an ongoing demonstration’) is an occurrential count NP focusing on the internal structure of the event. Generally speaking, count ANs are not incompatible with unbounded actualization aspect. (43b) can be paraphrased by:

- (44) a. Il y a une manifestation des agriculteurs en ce moment à Paris.
 ‘There is a farmers’ demonstration right now in Paris.’
 b. Une manifestation des agriculteurs a lieu en ce moment à Paris.
 ‘A farmers’ demonstration is taking place right now in Paris.’

So there is not any semantic contradiction between actualization aspect unboundedness and occurrentiality. The analogy between the mass-count distinction and actualization aspect (un)boundedness does not hold. In this restricted use, (un)boundedness is about the actual realization of situations. The semantics of nouns does not correspond to that level of description.

Another conclusion drawn from the analysis of (41)-(43) is that occurrentiality does not coincide with perfective aspect. The correspondence between the mass-count distinction and (im)perfective boundedness, as suggested in Mourelatos (1978), is not verified, since sentences involving imperfective tense may denote occurrences. So lexical boundedness in the nominal domain does not correspond to any form of boundedness that applies in the verbal system—neither lexical nor grammatical nor actualization boundedness. There is a form of delimitation description in nouns that does not have any equivalent in verbs. We can see in this discrepancy an expression of the grammatical specificities of each category.

6. Distribution between mass and count ANs

Before concluding, one last issue about French ANs: can the distribution between mass and count ANs be predicted? I cannot answer this question for the moment, but will make two suggestions for future work.

The first one concerns the derivation device used to form count and mass ANs. Does the derivation form play a part in determining the ability of an AN to denote occurrences? It could be pointed out that most pure mass ANs are *-age* suffixed, while pure count ANs seem to use a broader range of suffixes, notably *-ment* and *-ion* (see examples in §2). Also, many nouns that have both a count and a mass meaning are cases of conversion. The affix in itself does not determine the mass or count quality of the derived noun. Many count nouns bear the *-age* suffix (45), whereas *-ion* and *-ment* can be found in mass nouns (46):

- (45) deux atterrissages ‘two landings’, trois sauvetages ‘three rescues’, vingt démontages ‘twenty disassemblies’, quelques dérapages ‘a few skids’, plusieurs lavages ‘several washes’, beaucoup de cambriolages ‘many burglaries’
- (46) du dévouement ‘some dedication’, beaucoup d’amusement ‘a lot of fun’, un peu d’agacement ‘a bit of irritation’, de l’admiration ‘some admiration’, beaucoup de résignation ‘a lot of resignation’, un peu d’exaspération ‘a bit of exasperation’

But considering that these suffixes apply to different kinds of eventualities—the (a)telicity of the base verb does not determine the selected affix (cf. Martin 2010), and the derived nouns may denote activities as well as achievements, accomplishments (45) or states (46)—, maybe one could assume the existence of derivation rules applying specifically to activity verbs, rules that would be determined by the semantic particularities of each affix. For instance the pluractional meaning sometimes associated with *-age* (cf. Martin 2010), when combined with the atelicity of AVs, would produce an unbounded N. Nevertheless the existence of counterexamples (e.g. mass ANs using *-ion*, or converted pure count ANs, or count ANs using *-age*, cf. Ferret *et al.* 2010) would have to be discussed. A larger corpus of examples should be taken into account to confirm or invalidate statistically the tendencies that have been exposed.

The role of the derivation form, even if confirmed, cannot explain the in-depth motivation for the heterogeneity of ANs, nor the selection of such or such affix by a given AV. Why would AVs select occurrential or non-occurrential derivation rules, and derive different types of nouns? We saw that there is not any lexical predetermination of occurrentiality for verbs. But some extralinguistic factors could account for the distribution between AVs yielding mass nouns and AVs yielding count nouns. Mass and count ANs actualize the distinction between actions seen as individuated events, and actions seen as types or habits. When a kind of action is frequently repeated, and can be defined as a hobby, or even a profession, the corresponding verb could preferentially derive a mass noun. Indeed there could be different tendencies of use for AVs—AVs that yield count nouns showing a stronger propensity for specific readings than AVs deriving mass nouns. Such a tendency could appear in the interpretation by default of the verbs in present tense (cf. Haas & Huyghe 2010: 115):

- (47) a. Pierre (jardine / jogle / braconne).
 ‘Pierre (is doing some gardening / is juggling / is poaching)’ OR ‘Pierre (does some gardening / juggles / poaches).’
 b. Pierre (manifeste / discute / se promène).
 ‘Pierre (is demonstrating / is discussing / is strolling)’ NOT ‘Pierre (demonstrates / discusses / strolls).’

Out of context, only (47a) is ambiguous between a habitual and an occurrential reading. Of course, this does not affect the ability for any AV to be used in habitual sentences, as seen in (37). The addition of a frequency adverb like *souvent* (‘often’) to (47) will lead to a habitual reading in any case. But the hypothesis is that ANs could lexicalize a tendency of use motivated by extralinguistic parameters. The problem here is the existence of mass-count ANs, such as *danse* (‘dance/dancing’), which have the properties of both count and mass ANs. Since the interpretation of the corresponding verbs in present tense can only be of type (47a) or (47b), how then could we explain the difference between mass-count ANs and pure mass or pure count ANs? This question remains unanswered, and still needs further investigation.

Conclusion

In this study, I have shown that:

- (i) ANs, whether they are mass or count nouns, inherit the aspectual features of their base verbs;
- (ii) nominal boundedness does not parallel verbal boundedness, for only nominal boundedness specifies the ability to denote occurrences;

- (iii) nominal and verbal Aktionsarten are not isomorphous: different sets of aspectual features apply to each category;
- (iv) the grammatical specificities of the V and N categories determine the relevant aspectual features for each category.

The analogies previously made between the mass-count distinction and the verbal aspectual classification have to be revised, at least as far as French is concerned. The delimitation of dynamic countable nouns does not necessarily coexist with the description of a *telos*, as seen in the comparison of count ANs and accomplishment nominalizations. The mass-count distinction is neither equivalent to (im)perfective aspect, nor to actualization aspect (un)boundedness, since occurrences can be denoted by both count NPs involving count ANs and unbounded sentences involving imperfective tense. In other words, the mass-count distinction is not equivalent to the distinction between events and processes, whether these two terms denote telic vs. atelic situation types (Bach 1986) or compositional aspectual types including perfective vs. imperfective aspect (Mourelatos 1978). The application of a lexical [\pm bounded] feature to both nominal and verbal domains, as suggested in Jackendoff (1991), may induce the illusion of a semantic homogeneity between N and V. In fact, the form of quantification that applies to nouns and verbs depends upon the grammatical properties of each category, and notions such as boundedness take different forms, depending on the grammatical nature of the expressions. As a corollary, the discrepancy between nominal and verbal boundedness reveals irreducible differences between these two categories. The parallels drawn between nouns and verbs are limited by the grammatical specificities of each category.

These observations are of some interest for the more general issue of aspectual preservation. The idea of a cross-categorial aspectual heritage, which is often implicitly assumed, has been formulated by Marín & McNally (2009) as the Aspect Preservation Hypothesis (APH): “the lexical aspect of a verb is preserved under (the relevant sorts of) nominalization”. As noted by Marín & McNally, APH is challenged by various data, especially regarding psych verb nominalizations. Huyghe & Jugnet (2010) have argued that, in the case of French psych nominalizations, there could be a shift of aspectual class under some semantic conditions—basically a salient state in the event structure of a dynamic verb can be selected by the nominalization, which is consequently stative. The case of ANs introduces another kind of issue, because ANs are not actually exposed to a shift of aspectual class, but rather to a change of classification between the verbal and nominal domains. Strictly speaking, the properties of dynamicity, duration and atelicity are preserved by ANs. Yet the class of activities, as defined in the verbal domain, does not have any actual existence in the nominal system. It splits into two classes: occurrential and non-occurrential atelic actions. The study of aspectual preservation will be incomplete if it does not take into account the structural differences between nominal and verbal Aktionsarten.

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² I assume here that there is a lexical marking of the mass-count property, and that this lexical marking applies directly to nouns. There are alternative views, assuming that mass-count is not a feature of lexical entries, but is only determined at the

NP level (cf. Pelletier 1974, Bunt 1979, Allan 1980 *inter alia*)—a variation would be that all nouns have the same general default value, and that their interpretation as mass or count depends upon the determiner only (cf. Sharvy 1978, Borer 2005). For a presentation and a discussion of the different approaches to the mass-count distinction, see Nicolas (2002) and Pelletier & Schubert (2003).

³ Following Declerck (1989), Depraetere (1995) distinguishes explicitly between (a)telicity and (un)boundedness. (A)telicity concerns the description of a situation as having or not a natural endpoint (as in (9)), whereas (un)boundedness concerns the representation of a situation as having or not actual temporal boundaries (as in (10)-(11)). (A)telicity depends upon lexical aspect, and (un)boundedness upon what Declerck (2007) calls “actualization aspect”. In order to maintain the parallel drawn by Jackendoff (1991), I will not use the term (*un*)boundedness in this restricted sense, but more generally, as referring to semantic delimitation. Nevertheless, the distinction between a natural endpoint and the existence of actual temporal boundaries in the denotation of dynamic situations will be an issue here. And the comparison between the mass-count distinction and the (un)bounded actualization aspect, as suggested in Declerck (2007: 59), although it is not the main focus here, will be considered in §5.

⁴ Verkuyl (1972) argues that the (un)bounded interpretation of transitive verbs always depends upon the (un)boundedness of their internal argument—its [\pm Specified Quantity (SQA)] feature. Indeed, all verbs have an atelic reading when associated with [-SQA] arguments. Yet verbs like *push* are interpreted as activities whatever their internal argument is. In order to maintain his general claim about the compositionality of aspect, Verkuyl (1993) suggests that *push* is equivalent to ‘give pushes to’, i.e. that it includes an inherent [-SQA] argument. This solution, which is not very intuitive, can hardly be extended to all PUSH-verbs (cf. Rothstein 2004: 32). I will consider here that PUSH-verbs can be lexically categorized as activity verbs. I will also assume that the dynamic transitive verbs which are telic when combined with a [+SQA] argument can in themselves be classified as accomplishment or achievement verbs (e.g. *build, repair, cross, recognize, reach*).

⁵ Only the deverbals that have aspectual features are classified here. Nouns derived from activity verbs which denote agents or instruments (e.g. *gouverneur* ‘governor’, *bombardier* ‘bomber’) are not taken into account (cf. Haas & Huyghe 2010). Neither are nouns such as *nage* (‘swimming’) when denoting a manner of motion (e.g. *Il a traversé le lac à la nage* ‘He swam across the lake’), for in this sense, *nage* does not denote an eventuality, i.e. it does not include elements of temporal description.

⁶ The * sign indicates here that the expressions are not commonly used in French, although one could imagine a coerced reading of (16b) and (17b), similar to the one in (7)-(8). Remarkably, the coercion of mass ANs, as in (16b), seems very unusual in French.

⁷ (*Le patinage / la natation*) *a eu lieu dans l’après-midi* (‘The (skating / swimming) took place in the afternoon’) in (27) may be acceptable if interpreted as *La séance de (patinage / natation) a eu lieu dans l’après-midi* (‘The (skating / swimming) session took place in the afternoon’)—for instance as a TV program or at the Olympics. Such an interpretation is not needed in (26). Indeed, a sentence like *?La séance de manifestation a eu lieu dans l’après-midi* (‘The demonstration session took place in the afternoon’) is hardly acceptable in French.

⁸ The French deverbals system is quite different from the English one, in which a nominalization can be formed by using a derivational suffix (e.g. *remove* > *removal*), a gerund form (e.g. *kill* > *killing*) or a conversion (e.g. *walk* > *walk*). Brinton (1995) asserts that the analogy between the mass-count distinction and (a)telicity holds for suffixed nominalizations—the morphological device that is the closest to French—but that in the cases of gerund and conversion, there may be some coercion, since gerund nominalizations are always mass nouns, and converted nominalizations count ones. Brinton analyzes the gerund as an imperfectivizing device, similar to the progressive tense in the verbal domain, and the conversion as a perfectivizing device, similar to the simple tense. Brinton thus introduces some kind of grammatical aspect in the nominal system: the mass-count feature of nominalizations is related either to the Aktionsart of the base verb, or to an aspectual effect of (im)perfectivizing. Maybe one could argue against this position—for instance, the idea that suffixed English ANs are always mass nouns can be contested, given the fact that nouns such as *intervention, perusal, trial*, labelled by Brinton as activity nominalizations, seem to be countable. Anyway, in French, the mass-count quality of nominalizations does not correspond to (a)telicity, as I have argued here. It does not correspond either to (im)perfective aspect, as will be seen in §5.

⁹ The dynamic feature of verbs might be considered a necessary condition for the denotation of events, and thus account for their ability to be used in sentences denoting occurrences. Yet some stative verbs can also refer to events (e.g. *Marie a aimé Pierre pendant dix ans* ‘Mary loved Peter for ten years’, *A ce moment, j’ai su son nom* ‘At that moment, I knew (= learned) his name’). More crucially, dynamicity is not sufficient to determine the denotation of occurrences, since dynamic verbs can also be used to denote non-occurrences. Verbs do not include the semantic elements corresponding to the denotation of individuals.

¹⁰ The mass-count feature of nouns can be neutralized, when nouns are used without any determiner, as in *un espace de discussion* (‘a space of discussion’) or *des conditions de voyage* (‘conditions of travel’). There is not any actual boundedness in such uses, since nouns are not used to refer to anything, and of course no occurrence is denoted. Nouns like *discussion* and *voyage* still remain inherently count ones, i.e. nouns that have the ability to denote occurrences—as opposed to nouns that do not.

¹¹ Actualization aspect (un)boundedness coincides in (41)-(42) with the use of (non-)progressive verb forms. As Depraetere (1995) noted, the progressive is not necessary to determine actual unboundedness, since stative or habitual non-progressive forms can be unbounded, as in *John lives in London* and *John eats an apple every day*. Nevertheless the imperfective or perfective aspect of the verb—often assimilated to the progressive or non-progressive verb form—is of key importance in the determination of the actual unboundedness of a clause. In particular, imperfective aspect generally implies unboundedness.