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FRENCH EVENT NOMINALS AND NUMBER-INFLECTION

1. Introduction

This article examines the conditions bearing on the pluralisation of complex event nominals in French¹. Grimshaw (1990) has argued that complex event nominals—event nominals (ENs) that take arguments and display aspectual properties— do not pluralize. However, plural event nominals have been shown to exist in a variety of languages, contrary to this observation, e.g., in Slavic and Germanic languages (Alexiadou et al. 2010; Sleeman & Brito 2010), and in Romance languages (Iordachioaia & Soare 2009), including French (Meinschaefer 2005; Roodenburg 2006; Knittel 2010).

Our particular concern in this paper will be the relationship between aspect and number inflection. Relying on previous observations by Alexiadou et al. (2010) and Ferret et al. (2010) for French, we will put forward the hypothesis

that plural marking in French is possible only for event nominals that display perfective aspect.

This article is organised as follows. Section 2 introduces the relevant data; we distinguish two classes of event nominals based on number inflection: ENs that show variation between a singular and a plural form, and ENs that do not allow such alternation. In section 3, we consider the relationship between the lexical (Vendler 1967, Verkuyl 1972, Smith 1991) or 'inner' (Borer 2005, Travis 2009) aspect of event nominals and number distribution. We show that both telic and atelic VPs may give rise to uninflected nominalisations, while number inflected ENs are either aspectually vague/ ambiguous, or correspond to nominalised forms of unaccusative verbs, unambiguously denoting achievements. In section 4, we provide some hypotheses to account for the facts observed in section 3. We suggest that an inner Aspect projection hosting a [\pm telic] feature is present in the structure of unambiguous ENs, and may co-occur with the Number projection in unaccusative nominalisations, while ambiguous ENs exhibit only a Number projection. In section 5, we examine the idea, put forward by Alexiadou et al. (2010) and Iordachioaia & Soare (2009), that nominalisations may display 'outer', i.e. [\pm perfective] aspect. Since perfective nominalisations systematically allow both singular and plural forms, while imperfective ENs are always uninflected, we suggest that the outer aspectual value is directly linked to the distribution of Number. [dernière phrase supprimée]

2. The data

French Event Nominals can be formed with several suffixes, most frequently *-age* (*jardinage* 'gardening'), *-ment* (*bombardement* 'bombing'), and *-ion* (*utilisation* 'use'). Some ENs are formed through conversion (i.e. zero affixation) of past participles (*conduite* 'driving') or verb bases (*attaque* 'attack'). In this section, we examine ENs in these morphological classes, and distinguish two patterns regarding number inflection: inflected and uninflected nominals.

2.1. Uninflected Event Nominals

This subsection is dedicated to the examination of uninflected deverbal nominals.

The first class of uninflected ENs stems from the nominalisation of intransitive verbs denoting activities (Haas & Huyghe, 2010, Huyghe & Marín 2008, Heyd & Knittel 2009)ⁱⁱ.

- (1) a. *jardiner* / du *jardinage*
 'to garden' part.art. gardening
 b. *balayer* / du *balayage*
 'to sweep' part.art. sweeping
 c. *naviguer* / de la *navigation*
 'to sail' part.art. sailing
- (2) de l' *eau*

part.art. water
'(some) water'

The above examples show that such nouns are introduced by the partitive determiner *du / de la*, which also introduces concrete mass nouns (2). These nouns do not exhibit plural marking and cannot be introduced by the singular indefinite article *un(e)* under normal conditions (in (3), but see (7-8) below).

- (3) a. *{un / des / plusieurs} jardinages(s)
 {one / IndefPl./ several} gardening(Pl)
 b. *{un / des / plusieurs} balayage(s)
 {one / IndefPl./ several} sweeping(Pl)
 c. *{une / des / plusieurs} navigation(s)
 {one / IndefPl./ several} sailing(Pl)

These nouns are frequently introduced by the light-verb *faire*, resulting in atelic sentences (Haas & Huyghe 2010, Heyd & Knittel 2009, Beuseroy & Knittel to be published).

- (4) a. Il a fait {du jardinage / du repassage} pendant deux heures.
 he has done {part.art gardening / part.art ironing} for two hours
 'He has done {(some) gardening / (some) ironing} for two hours.'
 b. Elle a fait du balayage pendant dix minutes.
 she has done part.art sweeping for ten minutes
 'She has done (some) sweeping for ten minutes.'
 c. Il a fait {du nettoyage / de la navigation} pendant deux heures.
 he has done {part.art cleaning / part.art sailing} for two hours
 'He has done {(some) cleaning / (some) sailing} for two hours.'

Some of these ENs also have transitive counterparts, which allow them to become telic when combined with quantized arguments.

- (5) a. Le nettoyage de toute la maison en deux heures m'a épuisée.
 the cleaning of all the house in two hours me-has exhausted
 'The cleaning of the whole house in two hours has exhausted me.'
 b. La lingère m'a promis le repassage de cette chemise en 15 minutes
 the maid me-has promised the ironing of this shirt in 15 minutes
 'The maid promised me the ironing of this shirt in 15 minutes.'

Finally, French also displays strictly transitive atelic verbs that give rise to uninflected ENs.

- (6) a. L'utilisation *(de la photocopieuse) pendant une journée complète
 the use *(of the copy-machine) for a day whole
 l'a endommagée.
 it-has damaged
 'The use of the copy-machine for a whole day damaged it.'
 b. La conduite (de la voiture) pendant plus de quatre heures m'a fatiguée.
 the driving (of the car) for more than four hours me-has tired
 'The driving of the car for more that four hours exhausted me.'

According to Knittel (2009, 2010), the presence of the definite article instead of the partitive is due to the fact that transitive ENs must occur as heads of possessive constructions. The possessive construction, which is necessary to legitimate the EN complements, is characterized in French by the presence of the definite article even at first mention. However, their mass character shows through two other properties. When modified, these nouns must be introduced by an indefinite article, like other mass nouns (7); they also allow a 'manner reading' when pluralized and modified, which parallels the 'subtype' reading displayed by plural mass nouns under the same conditions (8).

- (7) a. La police a sensibilisé les automobilistes aux risques
 the police have raised awareness the drivers about the risks
 d'une conduite *(dangereuse).
 of a driving *(dangerous)
 'The police have raised the drivers' awareness about the risks of driving dangerously.'
- b. J'ai bu {du vin / un vin ??(exceptionnel)}.
 I have drunk {part.art. wine / a wine ??(exceptional)}
 'I drank {(some) wine / an exceptional wine}.'
- (8) a. Les utilisations inappropriées de la machine sont interdites.
 the-Pl use-Pl inappropriate of the machine are forbidden
 'Inappropriate uses of the machine are forbidden.' (i.e. inappropriate manners of using the machine)
- b. Les vins de ce viticulteur sont exceptionnels.
 the-Pl wine-Pl of this winegrower are exceptional
 'The wines of this winegrower are exceptional' (i.e. the kinds of wine)

2.2. Inflected Event nominals

As expected, the behaviour of inflected ENs contrasts with that of uninflected ENs. Inflected ENs may freely occur in the plural, and are introduced by the indefinite article *un(e)* in their intransitive use (9).

- (9) a. envahir / {une / des / plusieurs} invasion(s)
 'to invade' {one / indef.pl. / several} invasion(Pl)
- b. bombarder / {un / des / plusieurs} bombardement(s)
 to bomb {one / indef.pl. / several} bombing(Pl)
- c. attaque / {une / des / plusieurs} attaque(s)
 to attack {one / indef.pl. / several} attack(Pl)

The following examples show that inflected ENs allow pluralisation in both transitive and intransitive uses.

- (10) a. Plusieurs invasions se sont produites au X^e siècle.
 several invasion-Pl Refl-be occurred in the 10th century
 'Several invasions have occurred in the 10th century.'
- b. Il y a eu des bombardements la semaine dernière.
 there has been IndefPl bombing-Pl the week last

'There have been bombings last week.'

- (11) a. Les invasions successives de l'Europe (par les Barbares)
 the-Pl invasion-Pl successive of the Europe (by the Barbarians)
 se sont répétées pendant des siècles.
 (Refl-be recurred for IndefPl.centuries)
 'The successive invasions of Europe (by the Barbarians) have recurred
 over centuries.'
- b. Les bombardements répétés de la ville (par les Alliés)
 the-Pl bombing-Pl repeated of the town (by the Allies)
 ont détruit toutes les habitations.
 (have destroyed all the houses) '
 'The repeated bombings of the town (by the Allies) have destroyed all the
 houses.'

A peculiarity of EN pluralisation in French is that the described event must involve repeated occurrences with respect to the patient. This is exemplified in (12-13). In (12b), the nominal counterpart of (12a), the noun *atterissage* 'landing' occurs in the plural since it refers to two landing events by the same plane. Conversely, two landing events, each of which is performed by a different plane, can only be referred to by a singular EN (12d vs. e). Similar observations hold for the examples in (13), where *bombardement* 'bombing' must occur in the singular if it refers to one bombing event, even when several patients are involved. Consequently, example (13c) can only refer to several bombing events of each of the cities in question.

- (12) a. L'avion a atterri deux fois.
 the plane has landed two times
 'The plane has landed twice.'
- = b. Les atterrissages de l'avion se sont bien passés.
 the landing-Pl of.the plane Refl-be well passed
 'The landings of the plane went well.'
- c. Les deux avions ont atterri (une fois).
 the two planes have landed (one time)
 'The two planes have landed (once).'
- = d. L'atterrissage des deux avions s'est bien passé.
 the landing of.the two planes Refl-be well passed
 'The landing of the two planes (went well).'
- ≠ e. Les atterrissages des deux avions se sont bien passés.
 the-Pl landing-Pl of.the two planes Refl-be well passed
 'The landings of the two planes went well.'
- (13) a. L'aviation a bombardé deux villes.
 the air force has bombed two cities
 'The air force bombed two cities.'
- = b. Le bombardement de deux villes a fait de nombreuses victimes.
 the bombing of two cities has made many victims
 'The bombing of two cities has made many victims.'
- ≠ c. Les bombardements de deux villes ont fait de nombreuses victimes

the-Pl bombing-Pl of two cities have made many victims.
 'The bombings of two cities have made many victims.'

Evidently, this condition only applies to inflected event nominals. Thus, an event such as *nettoyage* 'cleaning' (14) will be denoted by an uninflected nominal, regardless of the number of repetitions or the identity of the patient.

- (14) La punition de Max a été le(*s) nettoyage(*s) de la cuisine
 the punishment of Max has been the(*Pl) cleaning(*Pl) of the kitchen
 (et de la chambre) pendant un mois.
 (and of the bedroom) for one month
 'Max's punishment has been the cleaning of the kitchen (and of the bedroom)
 for one month'.

We now turn to the interaction between the aspectual properties of the nominalised events and number-inflection.

3. Number-inflection and (a)telicity

As exemplified in 2.1, most ENs that can be characterised as mass nouns describe atelic events. This observation is not unexpected, given Mourelatos' (1978) and Borer's (2005) position that only nouns referring to telic events can appear in the plural.

However, if this were indeed the case, we would expect a contrast between the telic and atelic uses of the ENs under consideration, the former exhibiting number variation, but not the latter. And yet, typically atelic ENs (such as *repassage* 'ironing' (15) or *balayage* 'sweeping' (16)) can combine with a quantized argument, resulting in a telic VP/NP (b-c), without altering the properties of the EN with respect to number inflection, as shown in (d)ⁱⁱⁱ:

- (15) a. J'ai fait du repassage pendant deux heures.
 I have done part.art. ironing for two hours
 lit. : 'I have done ironing for two hours.'
- b. Le repassage de la chemise en 15 minutes
 the ironing of the shirt in 15 minutes
 'the ironing of the shirt in 15 minutes'
- c. J'ai repassé la chemise en 15 minutes
 the ironing the shirt in 15 minutes
 'I ironed the shirt in 15 minutes'
- d. ?? Les repassage-s de la chemise (pendant 2 heures / en 15 minutes)
 the-Pl ironing-Pl of the shirt (for two hours / in 15 minutes)
- (16) a. J'ai fait du balayage pendant toute la matinée.
 I have done part.art. sweeping for all the morning
 lit. : 'I have done sweeping for the whole morning.'
- b. Le balayage de la cour en une demi-heure
 the sweeping of the courtyard in a half hour
 'the sweeping of the courtyard in half an hour'
- c. J'ai balayé la cour en une demi-heure
 I have swept the courtyard in a half hour

- 'I swept the courtyard in half an hour'
 d. ?? Les balayages de la cour (pendant toute la matinée /
 the-Pl sweeping-Pl of the courtyard (for the whole morning /
 en une heure)
 in an hour)

We can, therefore, conclude that the number properties of these ENs do not rely on their telic or atelic reading.

Let us now consider the aspectual properties of number-inflected ENs. The following examples show that achievements (*assassinat* 'assassination' (17) and *vol* 'theft' (18)) and accomplishments (*lavage* 'washing' (19) *invasion* 'invasion' (20)) give rise to nominalisations exhibiting number specification.

- (17) a. assassiner / {un / des} assassinat(s)
 to assassinate / {one / indef.pl.} assassination(Pl)
- b. L'assassinat de cet opposant politique a eu lieu à Paris.
 the assassination of this opponent political has taken place in Paris
 'The assassination of this political opponent took place in Paris.'
- c. Les assassinats d'opposants politiques sont fréquents
 the-Pl assassination-Pl of opponents political are frequent
 dans certains pays.
 in some countries
 'Assassinations of political opponents are frequent in some countries.'
- (18) a. voler / {un / des} vol(s)
 to steal / {one / indef.pl.} theft(Pl)
- b. Le vol du tableau s'est produit à minuit.
 the theft of.the painting Refl-be occurred at midnight
 'The theft of the painting has occurred at midnight.'
- c. Les vols de ce tableau en 1917 et en 1988 sont restés célèbres.
 the-Pl theft-Pl of this painting in 1917 and in 1988 have stayed famous
 lit. 'The thefts of this painting in 1917 and in 1988 are still famous.'
- (19) a. laver / {un / des} lavage(s)
 to wash / {one / indef.pl.} washing(Pl)
- b. Le lavage de la chemise en une heure n'a pas donné
 the washing of the shirt in one hour has not given
 un résultat satisfaisant.
 a result satisfactory
 'The washing of the shirt in one hour did not produce a satisfactory result.'
- c. Les lavages répétés de la chemise ont terni ses couleurs.
 the-Pl washing-Pl repeated of the shirt have tarnished its shades
 lit.: 'The repeated washings of the shirt have tarnished its shades.'
- (20) a. envahir / {une / des} invasion(s)
 to invade / {one / indef.pl.} invasion(Pl)
- b. L'invasion du pays en une semaine a été une épreuve
 the invasion of.the country in one week has been an ordeal

- pour ses habitants.
for its inhabitants
'The invasion of the country in one week has been an ordeal for its inhabitants.'
- c. Les invasions de la Gaule au V^e et au VII^e siècle
the-Pl invasion-Pl of the Gaul in.the 5th and in.the 7th centuries
ont profondément bouleversé la société.
have deeply modified the society
'The invasions of Gaul in the 5th and 7th centuries have deeply changed the society.'

The above examples illustrate the fact that ENs referring to telic events display number variation. However, as shown in examples (15-16) above, telicity does not necessarily entail number inflection. Consequently, we have to find another parameter weighing on the distribution of number.

Note, however, that the ENs in (16-20) share a common property—they are all aspectually ambiguous.

Consider the ENs in (21). The noun *invasion* 'invasion' (21a) allows aspectual modifiers introduced by *pendant* 'for', which should not be the case if it only admitted a telic interpretation. The same is true for *lavage* 'washing' (21b).

- (21) a. L'invasion du pays pendant deux ans a été une épreuve
the invasion of.the country for two years has been an ordeal
pour ses habitants.
for its inhabitants
'The invasion of the country for two years has been an ordeal for its inhabitants.'
- b. Le lavage de la chemise pendant une heure n'a pas donné
the washing of the shirt for one hour has not given
un résultat satisfaisant.
a result satisfactory
'The washing of the shirt for one hour did not given a satisfactory result.'

The noun *vol* 'theft' can be construed either as an achievement (18b), or as an accomplishment, as shown by its compatibility with *prendre X temps* 'take X time' (22a); *assassinat* 'assassination' also allows a durative reading (22b), evident in its possible combination with *pendant* (Haas et al. 2008).

- (22) a. Le vol du tableau a pris plusieurs heures.
the theft of.the painting has taken several hours
'The theft of the painting has taken several hours.'
- b. Il a été blessé pendant l'assassinat.
he has been wounded during the assassination
'He has been wounded during the assassination.'

Another ambiguity is illustrated in (23); the number inflected EN *bombardement* 'bombing' is ambiguous between a single event (i.e. the launching of one bomb) and a multiple event activity (Smith 1991: 85), consisting of the launch of several bombs.

- (23) a. Le bombardement d'Hiroshima a eu lieu à 8h15. [single event]
 'The bombing of Hiroshima took place at 8.15.'
 b. Le bombardement de Londres s'est poursuivi jusqu'en 1941
 'The bombing of London lasted until 1941.' [multiple event activity]

ENs referring to activities with an inceptive component, i.e. focussed on their initial point (Smith 1991, 48), constitute another class of number inflected ENs. For example, *cambriolage* 'burglary' involves a break-in event, followed by various events of theft. Similarly, *agression* 'aggression' implies an assault followed by various molestations. Such events display properties of both activities and achievements, evident in their compatibility both with PPs introduced by *pendant* 'for' and with those introduced by *à* 'at', the latter focusing on the initial point of the process.

- (24) a. *cambrïoler* / {un / des} *cambrïolage(s)*
 to burgle / {one / indef.pl.} burglary(Pl)
 b. Il a été blessé pendant le *cambrïolage* de sa maison.
 he has been wounded during the burglary of his house
 'He has been wounding during the burglary of his house.'
 c. Le *cambrïolage* de la maison a eu lieu à minuit.
 the burglary of the house has taken place at midnight
 'The burglary of the house occurred at midnight.' (i.e. it began at midnight)

Thus, such ENs display properties of two different aspectual classes, although they are not aspectually ambiguous, like the ENs in (21-23).

The last class of ENs allowing number variation is the unaccusatives. Like the verbs they are derived from, unaccusative nominals refer unambiguously to achievements, and may occur in either the singular or in the plural.

- (25) a. *entrer* / {une / des} *entrée(s)*
 to enter, to come in / {one / indef.pl.} entry(Pl)
 b. L'*entrée* de l'acteur a été applaudie.
 the entry of the actor has been applauded
 'The arrival of this actor has been applauded.'
 c. Les *entrées* de cet acteur sont toujours très applaudies.
 the-Pl entry-Pl of this actor are always much applauded
 'The arrivals of this actor always are much applauded.'
 (26) a. *arriver* / {une / des} *arrivée(s)*
 to arrive / {one / indef.pl.} arrival(Pl)
 b. L'*arrivée* de Paul et Marie n'est pas passée inaperçue.
 the arrival of Paul and Marie be-not passed unnoticed
 'The arrival of Paul and Mary did not go unnoticed.'
 c. Les *arrivées* de Paul et Marie ne sont pas passées inaperçues.
 the-Pl arrival-Pl of Paul and Marie be-not passed unnoticed
 'The arrivals of Paul and Mary did not go unnoticed.'

Unaccusative ENs constitute a regular correlation between telicity and number inflection. Recall that the opposite pattern was noted with uninflected atelic nominals such as *jardinage* 'gardening' (4a). Both groups, thus, fit into the correlation between telicity and plurality put forward by Mourelatos (1978) and Borer (2005).

Conversely, the other ENs described above do not exhibit such a strict co-variation between Number distribution and (a)telicity. Thus, nominals originally referring to activities do not allow pluralisation when merged with quantized objects, even though they denote telic events (15c, 16c). As for number inflected nominals, they cannot be systematically characterized as telic, but are either aspectually ambiguous or activities with an inceptive component. Our conclusion, then, is that it is not possible to establish a regular correlation between (a)telicity and the distribution of number in French.

We can now propose a syntactic account of both inflected and non-inflected French ENs.

4. NumP and AspP: some hypotheses

As argued by various authors (see in particular Alexiadou et al. 2010, Iordachioaia & Soare 2009, Brito & Sleeman 2010), the functional structure of event nominals can contain nominal projections, verbal projections or a combination of both. Among the nominal projections, number (NumP) is of particular interest here, since French ENs allow number variation. Therefore, the functional projections of number inflected ENs should contain a NumP^{iv}, as is the case for any other count noun.

As for the relevant verb structure, it has been postulated by Borer (2005) that the functional structure of ENs contains a projection of inner Aspect, AspP (see also Travis 2009). As shown above (17-24), number-inflected ENs in French are frequently aspectually ambiguous. To account for this phenomenon, we assume that they lack an inner aspect projection.

The presence of NumP and the absence of inner aspect suggest, in fact, that number-inflected nominals in French are closer in structure to nouns than to verbs. A similar view is presented by Iordachioaia & Soare (2009) for Romanian infinitive CENs that exhibit number-marking. According to their analysis, nominals of this class exhibit another peculiarity: they can establish anaphoric relations with the same demonstrative pronoun as nouns. Conversely, the other class of Romanian ENs, (uninflected) 'supine CENs', are referred to using the same pronoun as reference to clauses.

A similar contrast is also observed in French. Anaphoric reference to inflected ENs patterns with reference to other nouns while reference to uninflected ENs patterns with reference to clauses. The following examples show that the third person personal pronouns *il(s)* / *elle(s)* are preferred as anaphoric pronouns for number-inflected ENs, compared to the neuter pronoun *ça*, which is used as an anaphor for clauses:

- (27) a. Le bombardement de Londres a commencé en 1940. {Il / ?? ça} s'est poursuivi jusqu'en 1941.
'The bombing of London has begun in 1940. {It/ ??that} lasted until 1941.'
- b. L'assassinat de cet opposant politique a eu lieu à Paris. {Il / ?? ça} a malheureusement fait d'autres victimes.
'The assassination of this political opponent took place in Paris. Unfortunately, {it / ??that} has made other victims.'
- c. Ils ont été traumatisés par le cambriolage de leur maison. En effet, {il / ? ça} a duré plusieurs heures.
'They have been traumatised by the burglary of their house. Indeed, {it / ? that} lasted for several hours.'
- d. {Elles ne sont pas / ? ça n'est pas} passé(es) inaperçu(es), les arrivées de Paul et Marie !
'{They / ? that} did not go unnoticed, the arrivals of Paul and Mary!'

Uninflected ENs are referred to by the neuter pronoun *ça*, as are the corresponding VPs.

- (28) a. {Le jardinage / jardiner}, {ç' / *il} est agréable.
lit. 'The gardening / gardening}, {that / *it} is pleasant.' (i.e. 'Gardening is pleasant.')
- b. {Nettoyer / le nettoyage de} cette chambre, {ça / *il} m'a épuisée.
lit. 'Cleaning / the cleaning of} this room, {that / *it} has exhausted me.'
- c. {Conduire / la conduite de} la voiture pendant plus de quatre heures, {ça / *elle} m'a donné des maux de tête.
'{Driving / the driving of} the car for more than four hours, {that / *it} has given me headache.'

These data suggest that uninflected ENs are more 'verbal' than those which allow number marking. As a consequence, we may consider their lack of number inflection as a reflex of their more verbal characteristics.

There are other arguments supporting such an analysis. Beuseroy & Knittel (to appear) show that uninflected activity nominals do not display the usual properties of nouns. They cannot be modified by qualifying adjectives ((29), see also Heyd & Knittel 2009), suggesting that they lack some functional projection that usually dominates NPs. Moreover, the light verb *faire* 'to do' can systematically be inserted to introduce these nouns (30-31).

- (29) a. *Il fait du balayage rapide.
he does part.art. sweeping fast
lit. 'He does fast sweeping.'
- b. * La navigation calme est agréable.
the sailing quiet is pleasant'
lit. 'Quiet sailing is pleasant.'
- (30) a. La navigation requiert du sang froid.
the sailing requires part.art. blood cold
'Sailing requires cold blood.'
- = b. Faire de la navigation requiert du sang froid.
to do part.art.sailing requires part.art. blood cold

- (31) a. J'adore le jardinage.
 I love the gardening
 'I love gardening.'
 = b. J'adore faire du jardinage.
 I love to do part.art. gardening

A possible analysis, then, is that such nouns are associated with verbal projections, possibly the AspP mentioned above. Given that these nouns essentially refer to activities, we hypothesize that their structure contains an AspP projection encoding atelicity.

As noted above, these nouns can combine with quantized arguments to give rise to telic DPs, similarly to verbs (15b, 16b). The absence of number inflection in such cases, also noted above, can now be seen as a result of the absence of a NumP projection in the structure of these ENs.

Finally, let us turn to unaccusative ENs. Unlike other number-inflected ENs, unaccusative ENs (25-26) are not aspectually ambiguous, as they always denote achievements, which are clearly telic events. A possible analysis is that these ENs can be analysed as containing an Aspect projection, like activity ENs. But, the difference is that AspP in unaccusative ENs encodes a telic feature, rather than the atelicity found in activity nominals. Yet, unaccusative ENs systematically display number variation, suggesting that they are also dominated by a NumP. Consequently, unaccusative ENs display a mixed functional structure, containing both nominal and verbal categories.

The following table summarizes the observations put forward in this section:

(32)

Example :	<i>jardinage</i>	<i>bombardement</i>	<i>arrivée</i>
Number inflection	—	+	+
NumP	—	+	+
Aspectual value	-telic	ambiguous	+telic
AspP	+	—	+

We now turn to the morphological structure of French ENs.

5. A note on morphology and outer aspect

In the preceding section, we argued that activity nominals are characterized by the presence of an inner aspect projection in their functional structure and lack a Number projection. Consequently, the same unmarked form is used to refer to one or several events, as exemplified (33).

- (33) Le balayage de la cuisine {hier / pendant trois semaines}
 the sweeping of the kitchen {yesterday / for three weeks}
 'The sweeping of the kitchen {yesterday / for three weeks}'

In the above example, the adverbial *hier* 'yesterday' entails a single event reading of the string *le balayage de la cuisine* 'the sweeping of the kitchen' whereas *pendant trois semaines* 'for three weeks' is preferably construed as iterative, denoting a series of events. This assumption leads to another question: how does this plural event reading appear, in the absence of plural marking?

In the verbal domain, event plurality has been argued to be the result of a pluractional operator (see in particular Cusic 1981, Lasersohn 1995, van Geenhoven 2004, Laca 2006 a,b). The same analysis has been applied to Romanian supine CENs that do not exhibit number variation (Iordachioaia & Soare 2009). Looking back at the examples of activity nominals provided above, one can observe that most ENs are formed with the verbal derivational suffix *-age* (*balayage* 'sweeping', *nettoyage* 'cleaning', *jardinage* 'gardening', *repassage* 'ironing'). According to Ferret et al. (2010), *-age* suffixation rule conveys outer aspect with imperfective value, and, consequently, the resulting nominalisations display pluractionality effects (see also Martin 2010, Uth 2010). This analysis could be used to explain why activity nominals ending with *-age* do not require plural inflection; since *-age* suffixation already supplies a pluractional value, there is no need for any other plurality marker.

However, the correlation is not complete. On the one hand, as illustrated in (34), activity nominals may be derived by various other means besides *-age* (suffixes, past participle conversion, verb to noun conversion, see section 2).

- (34) a. ranger / rangement naviguer / navigation
 to tidy / tidying to sail / sailing
 escalader / escalade conduire / conduite
 to climb / climbing to drive / driving
- b. Faire {du rangement / de la navigation / de l'escalade /
 to do {part.art. tidying / part.art. sailing / part.art. climbing /
 de la conduite} pendant deux heures, c'est {amusant / fatigant}.
 part.art. driving} for two hours, it is {pleasant / tiring}
 '{To tidy / to sail / to do mountain-climbing / to drive} for two hours, it is
 pleasant / tiring}

On the other hand, as shown by Ferret et al. (2010), the suffix *-age* is not limited to activity nominals.

- (35) a. L'abattage de l'arbre {*pendant / en} 15 minutes
 'the cutting down of the tree {*for / in} 15 minutes'
- b. Le démontage de l'armoire {*pendant / en} une heure
 'the disassembling of the cupboard {*for / in} one hour'

Note that *-age* nominals are not incompatible with idiomatic expressions that preclude the subdivision of events, such as *en un tournemain* (lit. 'in one turn of the hand') or *en un clin d'œil* 'in one wink' (Laca 2006b).

- (36) a. L'abattage de l'arbre en un clin d'œil
 'the cutting down of the tree in one wink'

- b. Le démontage de l'armoire en un tournemain
'the disassembling of the cupboard in one turn of the hand'

Therefore, we conclude that pluractionality with activity ENs comes from the atelic interpretation of nominals in itself, that is, from the presence of inner aspect with an atelic value. The same analysis is proposed by Alexiadou et al. (2010) for Polish EN *-nie/-cie* nominalisations.

Unlike *-age* nominalisations, nouns ending with *-ée*, which are converted from past participles (Tribout 2010), are analysed as perfective by Ferret et al. (2010). However, as with *-age* nominals, things are not so simple. First, ENs derived from past participles are not always telic (e.g., *conduite* 'driving', from the past participle of *conduire* 'to drive', which refers unambiguously to an activity, (6b)). We assume that unaccusative nominals, that are generally converted from past participles (25, 26), are the exact counterpart of activity nominals in that they are necessarily telic (see section 3) and perfective. Recall, however, that they are dominated by NumP, as shown by their number inflection. Two analyses are possible here. On the one hand, we could assume that their outer aspect projection is dominated by a NumP, accounting for their count properties. On the other hand, it can be proposed that NumP in itself is responsible for their perfective interpretation.

An argument supporting the latter hypothesis is provided by nouns such as *danse* 'dance/dancing' or *marche* 'walk/walking'. As shown by various authors (Van de Velde 1995, Haas & Huyghe 2010, Haas Huyghe & Marín 2008, Heyd & Knittel 2009, Beuseroy & Knittel to appear), these nouns can be used as either mass or count nouns.

- (37) a. une danse / de la danse
a dance / part.art. dance
b. une marche / de la marche
a walk / part.art. walk

As shown in (38), these nouns can be introduced by the preposition *après* 'after' when used as count nouns (38a), but not when they are construed as mass (38c). The *après* test is proposed by Ferret et al. (2010) to distinguish perfective from imperfective nominals.

- (38) a. Après {une danse / plusieurs danses}, je bois un verre d'eau.
'After {one dance / several dances}, I drink a glass of water.'
= b. Après avoir dansé, je bois un verre d'eau.
'After having danced, I drink a glass of water.'
c. *Après {de la / beaucoup de} danse, je bois un verre d'eau.
'After {part.art. dance / a lot of dance}, I drink a glass of water.'
- (39) a. Après {une marche / les marches}, j'ai mal aux pieds.
'After {one walk / the walks }, my feet ache.'
= b. Après avoir marché, j'ai mal aux pieds.
'After having walked, my feet ache.'
c. *Après {de la / beaucoup de} marche, j'ai mal aux pieds.

'After {part.art. dance / a lot of walk}, my feet ache.'

Examples like (38) lead us to conclude that, in the case of *danse* and *marche*, number inflection is linked to perfectivity^v (see Alexiadou et al. 2010 for a cross-linguistic generalisation).

This analysis can be transposed to unaccusative nouns, which can always be combined with the preposition *après*.

- (40) a. Après l'arrivée de l'acteur, les applaudissements ont commencé.
'After {the entry of the actor}, the applaudings begun'
= b. Après que l'acteur est arrivé, les applaudissements ont commencé.
'After the actor came in, the applaudings begun'

Finally, let us consider additional number inflected ENs. Here we find greater morphological variation than with activity nominals. This was illustrated above with nouns ending in *-ion* (*invasion* 'invasion' (9a)), *-ment* (*bombardement* 'bombing' (9b)) and *-at* (*assassinat* 'assassination' (17)), as well as cases of noun-to-verb conversion (zero affixation, e.g., *vol* 'theft' (18)). Unlike uninflected nominals and unaccusatives, that display some sort of morphological regularity, number inflected ENs cannot receive a uniform analysis. In the preceding section, we have hypothesized that such nouns do not contain an inner aspect projection in their structure, in light of their aspectual ambiguity. On the other hand, we have argued that number inflection conveys perfectivity in unaccusative nouns. Extending this position to the present set of ENs, that have been defined as inflected nominals, we should expect these nominals to display perfective outer aspect. This is confirmed in (41), using the *après* test introduced in (38) above.

- (41) a. Après {le vol / l'assassinat / le cambriolage}, un suspect a été arrêté par la police.
'After {the theft / the assassination / the burglary}, a suspect has been arrested by the police.'
b. La rébellion a commencé après {l'invasion / le bombardement}.
'The rebellion begun after {the invasion / the bombing}.'

Ferret et al. (2010) propose another test of perfectivity: when used as objects of *filmer* 'to film', perfective ENs are construed as referring to events as a whole, including their initial and final endpoints. As expected, our inflected ENs reveal perfective behaviour (42).

- (42) a. J'ai filmé {le vol / l'assassinat / le cambriolage}.
'I have filmed {the theft / the assassination / the burglary}.'
b. {L'invasion / le bombardement} a été filmé.
'{The invasion / the bombing} has been filmed.'

Our conclusion is, therefore, that the perfective interpretation of these ENs is due to the presence of a Number Projection in their functional structure, as is the case with unaccusative nominals.

Since (im)perfectivity in French is conveyed by the inflectional category of Tense in the verbal domain, the fact that it is also conveyed by Number, the only inflectional category available in the nominal domain, appears to be a welcome result.

6. Conclusion

In this article, we examined the behaviour of French Event Nominals with respect to number marking.

We have shown that two types of nominals display number inflection: unaccusatives, that retain the telic feature of their base verbs, and a mixed class of aspectually vague or ambiguous ENs. Conversely, activity nominals never allow number inflection, although they may give rise to telic DPs when combined with quantized objects. We therefore conclude that number inflection does not arise from telicity.

Turning to the examination of outer aspect, we showed that unaccusatives and vague or ambiguous ENs exhibit perfective behaviour in perfectivity tests proposed by Ferret et al. (2010). Consequently, we argue that number inflection is restricted to nominals displaying a perfective interpretation, an observation with attested cross-linguistic parallels (Alexiadou et al. 2010). To account for this observation, we hypothesized that the projection of Number is responsible for the perfective interpretation of inflected nominals. This conclusion is further supported by a particular class of nouns derived from activity verbs, which allow both mass and count uses. We showed that a perfective interpretation of these nouns only arises when they are construed as count nouns, as predicted by the proposed analysis.

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ⁱⁱ Abbreviations: Pl: plural; indef.pl: indefinite plural article; part.art: partitive article; Refl: reflexive pronoun.

ⁱⁱⁱ Note that PPs introduced by *pendant* 'for' are not excluded with quantized arguments, this combination resulting in the atelic reinterpretation of the VPs/DPs:

(i) {Le repassage de la chemise / j'ai repassé la chemise} pendant 2 heures.
'{The ironing of the shirt / I have ironed the shirt} for two hours'.

(ii) {Le balayage de la cour / j'ai balayé la cour} pendant toute la matinée.
'The sweeping of the courtyard / I swept the courtyard} for the whole morning'.

^{iv} We assume that only count nouns are dominated by a Number Projection, and that the mass reading arises from the absence of NumP (see Kwon & Zribi-Hertz 2004, Knittel 2009).

^v *Après* does not influence inner aspect, since *danse* and *marche* in (37-38) are still construed as activities.