The Semantics of Eventive Suffixes in French*

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This paper examines the properties of three of the suffixes available to create eventive deverbal nouns in French, namely -age, -ment and -ion. The explored hypothesis is that these suffixes have an abstract semantical and aspectual value which contributes to explain why verbs select different suffixes in the operation of nominalisation, as well as the semantical differences between two nominalisations derived from the same verbal base with different suffixes.

1. Introduction

Eventive deverbal nouns (henceforth EDNs) can be formed with at least three suffixes in French, namely -age, -ment and -ion. The goal of this paper is to explain the distribution of these three suffixes among EDNs in contemporary French. Classically, it is generally taken for granted that there is nothing to be explained to begin with. Indeed, one often assumes that the distribution of these suffixes cannot be motivated in synchrony, since the nouns in which they enter have often been copied from the Latin ones. Therefore, the argument goes, if the distribution of the suffixes depends on the semantics of the verbal bases, it is on the Latin ones.

However, this “null” hypothesis is not completely satisfactory for several reasons.

The first counter-argument comes from neologisms. Very often, native speakers tend to choose the same suffix(es) to form new nouns from new verbs, and this reflects in corpora. For instance, the verb doper (‘dope’, born in 1903 according to Le Petit Robert) is nominalised more than 800 times in -age, 3 times in -ment, and never in -ion on Internet.\(^1\) This regularity is left unexplained if one assumes that these suffixes do not have a syntax/semantics guiding the nominalising process. Besides, it is not rare that even when a noun formed with a verbal base \(v\) and a suffix \(S_1\) already exists in French, subjects create another noun with the same base \(v\) and another suffix \(S_2\). For instance, while indignation

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\(^1\) The searches were made between December 2007 and April 2008.
already exists, one quite often finds *indignement* in corpora. One could argue that this kind of neologisms is simply the sign of a certain lexical incompetence, but then, one does not explain why *indignage* is never created.

The second counter-argument comes from *pseudo-nouns*. Pseudo-nouns are built on pseudo-verbs, that is invented, meaningless but morpho-phonologically well-formed French verbs. One observes that subjects tend to have intuitions on the semantical differences between pseudo-nouns built on the same base $v$ with different suffixes $S_1$, $S_2$...(Dumay & Martin 2008). Let us take for instance the pseudo-verb *toliner*. To the question “Imagine that the non-existing verb *toliner* describes an action. If you want to describe an action of this type which is not finished, would you rather use *tolinage* or *tolination*?”, the subjects preferably choose the -age EDN. This kind of intuitions can certainly not be explained if the semantic value of these suffixes is empty.

A third counter-argument comes from the *semantical systematicity* taking place between EDNs derived from different suffixes. Often, the semantical relation taking place between nouns built with a suffix $S_1$ and nouns build with a suffix $S_2$ is similar from base to base. For instance, the semantical difference we document below between °*miaulage* and *miaulement* (from *miauler* 'meouw') is the same as the one between *secouage* and *secouement* (from *secouer* 'shake'). Again, this cannot be explain if the semantics of these suffixes is supposed to be empty.

The alternative hypothesis explored here is that that these suffixes have an abstract semantical value, which contributes to explain

a) why verbs select different suffixes in the operation of nominalisation, given the additional premisse that the meaning of the verbal stem and the one of the suffix must match

b) the interpretation of existing EDNs, including the semantical differences of two EDNs derived from the same verbal base but with different suffixes

c) the acceptability of neologisms

For this study, two kinds of empirical data have been investigated, namely

a) existing EDNs listed in dictionaries (*Le Petit Robert*, *Le Littré* and *Le Trésor de la Langue française*),

b) existing EDNs which are present in corpora (e.g. on Internet) but not listed in dictionaries. These EDNs are prefixed with °*°*.

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2 The meaning of the symbol ° will be explained below.
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The paper is divided as follows. Firstly, I introduce a new indicator for the reading of DNs under study, namely the eventive one (section 2). Secondly, I present the results of an inquiry on the impact that the aspectual category of the verbal base might have on the choice of the suffixes. Basically, the results are pessimistic: no clear correlation emerges. However, the following sections present data suggesting that other aspectual values of the verbal base play a role here. I address successively the competition between (i) -age and -ment (section 4), (ii) -ment and -ion (section 5) and (iii) -age and -ion (section 6).

2. Selecting the eventive reading of deverbal nouns

For this preliminary study, DNs built with different suffixes will only be compared on their eventive reading. I will not try to differentiate the suffixes by the range of readings they are supposed to yield as in Lüdtke (1978), Heinold (2005) or Uth (this volume). The distribution of the suffixes will not be investigated either on the stative or referential readings of DNs. Many – if not all – of the tests which are supposed to diagnose the eventive reading of DNs raise serious problems once applied to French. For instance, Roodenburg (2006) shows that contrary to what is predicted by Grimshaw's (1990) analysis, DNs can pluralise on their eventive reading in French:

(1) Le général a filmé les désamorçages de bombes lourdes par les recrues. (Roodenburg, id.)
   The general filmed the disantlements of heavy bombs by young soldiers

   Secondly, modifiers like fréquent ('frequent') or constant ('constant') do not allow to differentiate stative and eventive readings, since they are compatible with nouns clearly denoting states, like maladie or état:

(2) C'est une maladie constante du projet républicain: il se retourne contre lui-même. (Internet)
   It is a constant illness of the republican project: it turns against itself

(3) Le bonheur est un état constant. (Internet)
   Happiness is a constant state

   Progressif ('progressive') or graduel ('gradual') have also been used as diagnostics of eventivity (cf. e.g. Meinschaefer 2005). However, even if these adjectives are indeed possibly incompatible with stative DNs, they also reject DNs like effarement ('bemusement') which have an eventive reading, but denote an event which is so quick that it is not easy to emphasize its development, as it is arguably required by these two modifiers, cf. (3).

(3) #L'effarement progressif de Pierre
   The progressive bemusement of Pierre
Given the confusion that might be caused by the use of these tests, I propose to introduce another construction as a diagnostic of eventivity, namely the predicate *assister à* (‘to witness/to attend’). Contrary to the perception verb *voir* (‘see’) which imposes much less restrictions on its object, the verb *assister à* robustly rejects objects denoting individuals, states or facts and exclusively selects events:

(4) *J'ai assisté au livre.*  
I witnessed the book

(5) ??*J'ai assisté au fait qu'il était parti.*  
I witnessed the fact that he was gone

(6) ??*J'ai assisté à son état.*  
I witnessed his state

Besides, contrary to *progressif* or *graduel*, it accepts any kind of eventive DNs, including the ones like *effarement* denoting a very short event:

(7) *J'ai assisté à l’effarement de Pierre.*  
I witnessed the bemusement of Pierre

In line with traditional analyses of perception reports (e.g. Vlach 1983), I will assume that the DN denotes the event which has to be witnessed for the sentence to be true, and only this event. For instance, according to this principle, *soins* (‘treatment’) only denotes the action of the doctor, cf. (8), while *guérison* (‘curing’) only denotes the change of state of the patient, cf. (9):

(8) *J'ai assisté aux soins.*  
I witnessed the treatment

(9) *J'ai assisté à la guérison.*  
I witnessed the curing

If we assume, besides, that modifiers are predicates of the event denoted by the DN, we generally point to the same conclusion with regard to the denotation of the DN. For instance, for (10) to be true, the action of the doctor only has to be quick (the curing itself can be slow), and for (11) to be true, the change of state of the Patient only has to verify this property (the treatment itself can be slow):

(10) *Des soins rapides ont eu lieu.*  
A quick treatment occurred

(11) *Une guérison rapide a eu lieu.*  
A quick curing occurred

In the next section, I show that there is no clear correlation between the distribution of the suffixes in EDNs and the (a)ticity of it verbal base.
3. No impact of the (a)telicity of the verb on the choice of the suffix

A robust difference between eventive suffixes under study is that they do not manifest the same preferences for determiners. For instance, while mass DPs built with *du, de la or des* (French equivalents of bare nouns) are very frequent with *-age*, they are comparatively much less common with *-ment*:

(12) C'est du déchiffage. (434 occurrences on Internet)  
It is 'du' deciphering
(13) C'est du déchiffrement. (2 occurrences on Internet)  
(14) C'est 'du' gribouillage (930 occurrences on Internet)  
It is du scribbling
(15) ?C'est du gribouilllement. (0 occurrence on Internet)  
It is 'du' scribbling

This fact certainly underlies the intuition that *-age* EDNs are “more massive”. Let us combine this observation with an old hypothesis of Mourelatos (1978), namely that count nouns are derived from telic verbs, while mass nouns are derived from atelic ones. The prediction which naturally follows from this combination is that the (a)telicity of the verbal base may partly play a role in the choice of the suffix. For instance, if Mourelatos is right, given that *-age* DNs are more frequent with mass nouns, we would expect that *-age* DNs will preferably be derived from atelic verbs.

To check whether the (a)telicity of the verb can indeed partly drive the choice of the eventive suffix, I tested 300 causative psychological verbs with regard to this aspectual value. For this test, I always selected the same kind of object, namely a bounded one ([+SQA] in the terminology of Verkuyl 1972). For instance, according to the traditional adverbial tests, *embêter* ('to tease') has the atelic reading only, cf. (16), while *séduire* ('to seduce') has an atelic or a telic reading, cf. (17):

(16) J'ai embêté Pierre en dix minutes/pendant dix minutes.  
I teased Pierre in ten minutes/for ten minutes
(17) J'ai séduit Pierre en dix minutes/pendant dix minutes.  
I seduced Pierre in ten minutes/for ten minutes

To each of these verbs were associated

a) The existent DN(s) (e.g. *embrasement* 'enthusiasm' for the psych-verb *embrasser*, 'to thrill')

b) The available (telic and/or atelic) reading(s) (tested with a [+SQA] object)

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3 With a non-bounded object, the yielded VP would invariably be atelic.
The other meaning(s) this verb might have (e.g. the physical verb *emballer* 'to wrap' was linked to the psych-verb *emballer*) and, again, the available telic/atelic reading for this new sense

d) The available DN(s) for the other sense(s) (e.g. *emballage* 'wrapping' was linked to the physical verb *emballer*)

The results of the inquiry are summarised in Table 1 (a fourth suffix –*erie* was also taken into account for the inquiry). I gave the results for atelic and telic readings because for some verbs, none of the two is acceptable. The number of DNs containing a certain suffix is put in parenthesis. As the same verb may have different aspectual value on its different readings, the DN is counted twice if it nominalises two different readings.

<table>
<thead>
<tr>
<th></th>
<th>-ment (194)</th>
<th>-ion (146)</th>
<th>-age (49)</th>
<th>-erie (16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telic r. of the verb OK</td>
<td>48,2%(95)</td>
<td>56,8%(83)</td>
<td>59,1(29)</td>
<td>31,2(5)</td>
</tr>
<tr>
<td>Atelic r. of the verb OK</td>
<td>70,5%(139)</td>
<td>71,6%(104)</td>
<td>77,5%(39)</td>
<td>93,7%(15)</td>
</tr>
<tr>
<td>No telic r. for the verb</td>
<td>50,2%(99)</td>
<td>41%(60)</td>
<td>36,7%(18)</td>
<td>62,5%(10)</td>
</tr>
<tr>
<td>No atelic r. for the verb</td>
<td>23,8%(47)</td>
<td>21,9%(32)</td>
<td>18,3%(9)</td>
<td>6,2%(1)</td>
</tr>
</tbody>
</table>

Table 1

As one can see, no clear correlation emerges between the choice of the suffixes and the aspectual value of the verbal base. The results then indirectly falsify the Mourelatos hypothesis. The –*erie* suffix is the only one to exhibit a clearly different pattern, but the number of corresponding nominalisations is so low that some cautiousness seems in order here. Note that according to A. Fabregas (p.c.), the (a)telicity of the verbal stem seems irrelevant for the choice of the suffix in Spanish too.

These negative results are not very surprising in view of the fact that quite a few verbs have inverse aspectual values under two different readings, but nominalise the same way:

(18) L’éponge a absorbé la flaque en/??pendant dix minutes. (>absorption)
The sponge absorbed the puddle in/for ten minutes
(19) Pierre m’a absorbé ??en/pendant dix minutes. (>absorption)
Pierre absorbed me in/for ten minutes

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4 “Other” meanings should not be interpreted as “derived” or “secondary” meanings. In the case of psych-verbs, the physical reading is of course very often the first one (of which the psychological reading is derived).

5 Note that a finer typology of atelic readings may change the results; for the test, no distinction was made between the case where the durative adverbial scopes over the event and the one where it scopes over the resultant state.
However, we will see in the following sections that other aspectual values of the verbal stem play a role in the distribution of suffixes.

4. -age versus -ment

4.1 Two previous claims

Two previous claims have been made about the rivalry between the suffixes -age and -ment. According to Dubois (1962) and Dubois & Dubois-Charlier (1999), -age is selected by transitive verbs, and -ment by intransitive ones. Verbs like siffler ('whistle', 'blow') or froisser ('crease') confirm this generalisation, since they nominalise with -age on their transitive reading and with -ment on their intransitive one:

(20) L’arbitre a sifflé le joueur. > Le sifflage de la sifflage du joueur par l’arbitre
The referee blow the player The blowing of the player by the referee
(21) Pierre siffle en travaillant. > Le sifflement de le siffle de Pierre
Pierre whistled while working The whistling of Pierre
(22) J’ai froissé ma jupe. > Le froissage de la jupe
I creased my skirt The creasing of my skirt

However, this rule also suffers counter-examples. Firstly, some transitive verbs can nominalise in -ment, cf. (23):

(23) J’ai froissé ma jupe > Le froissement de la jupe
I creased my skirt The creasing of my skirt

Sometimes, they even must do so. For instance, on its psychological transitive reading, froisser 'offend/bruise' cannot nominalise in -age, but only in -ment. Secondly, some intransitive verbs cannot nominalise in -ment (cf. arriver, 'to arrive' > arrivage, 'arrival/delivery'; ?arrivement does not exist anymore) or select both suffixes (cf. miauler, 'to meow' > 'mialage, miaulement 'meowing').

Kelling (2004) admits that -ment can be selected by transitive verbs. However, according to her, the two suffixes still differ then in that -age is supposed to be selected when the subject of the transitive verb is an Agent, while -ment is selected in other cases:

(24) x a gonflé y
x inflated y
If x is an Agent: > le gonflage de y
The inflating of y
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If $x$ is not an Agent: > le gonfl*ement* de $y$
The inflating of $y$

But this generalisation also suffers counter-examples. As already noted by Heinold (2005), transitive verbs can nominalise in -*ment* even when the context indicates that the subject is clearly agentive. In fact, I would add that they even sometimes prefer -*ment* to -*age*, as in this example:

(25) Le gonfl*ement*/?le gonflage des chiffres par certaines sociétés. (Heinold, *id.)*
The inflating of figures by certain companies

4.2 A multi-feature analysis

Given these counter-examples to the two previous claims, I will here admit that in principle, -*ment* and -*age* can both nominalise transitive or intransitive verbs. But the preferences observed by the authors are certainly correct, and should be captured by the analysis as well as their exceptions. However, these exceptions also suggest that it is hopeless to try to capture the difference between two kinds of nominalisations by one feature only.

In what follows, I distinguish -*ment* and corresponding -*age* EDNs by four properties $P_1$, $P_2$, $P_3$ and $P_4$. In the *paradigmatic*al case (arguably the one targeted by previous authors), the two competing nouns derived from the same base differ from each other by each of these four properties. However, in some cases, the verbal base itself “neutralises” some of these properties, because its semantics does not allow to exploit it (see below). In this case, the other properties still allow to differentiate the two competing EDNs.

This analysis presupposes a more fine-grained classification of verbal bases than in previous work, because one should be able to identify the “active” or “neutralised” properties in the nominalisation process. In sum, the relevant properties concern (i) the length of the denoted eventive chain (section 4.2.1), (ii) the degree of agentivity of the subject (section 4.2.2), (iii) the incremental relation between the event and the Theme (section 4.2.3), and (iv) the ontological domain to which the denoted eventive chain pertains (section 4.2.4).

4.2.1 Property $P_1$: length of the eventive chain

The first relevant property concerns the mereological relation between the two events $e_{ment}$ and $e_{age}$ respectively denoted by an -*ment* EDN and the corresponding -*age* EDN. This property is ‘active’ with verbal bases which present a certain type of semantical underspecification, namely bases which can denote longer or shorter eventive chains. Firstly, this is the case of verbal bases of which are derived verbs enduring the causative/inchoative alternation. At least, these bases are assumed to
be underspecified in the “Y-model” proposed by Piñón (2001a), where both the transitive and intransitive version of causative/inchoative verbs are derived from a same (underspecified) base, itself being derived from the adjective (see Figure 1 below). Piñón offers a lot of cross-linguistic empirical arguments showing that this model is to be preferred to the alternative ones, where the causative verb is supposed to be derived from the inchoative one (traditional model), or the inchoative one from the causative one (Levin & Rappaport 1994’s model).

![Figure 1: the Y-model](image)

Secondly, it is also the case of bases from which are derived transitive (ex: *shake*) or intransitive (ex: *meouw*) verbs which can either denote a single event or an iteration of it.

I propose that with underspecified bases of this kind, *-age* selects the longer reading, while *-ment* selects the shorter one. Basically, with these bases, $e_{\text{ment}}$ is always a (proper) subpart of $e_{\text{age}}$ ($e_{\text{age}} \supset e_{\text{ment}}$). Let us first examine the case of causative/inchoative bases.

**Causative/inchoative verbal bases.** With verbs enduring the causative/inchoative alternation, the witness test presented above allows to show that while *-age* EDNs denote the full causation, the corresponding *-ment* ones denote the change of state of the object only:

(26) Pierre a assisté au gonflage des ballons.  
Pierre witnessed the inflating of the balloons  
$\text{Pierre witnessed the whole causation}$

(27) Pierre a assisté au gonflement des ballons.  
Pierre witnessed the inflation of the balloons  
$\text{Pierre witnessed the change of state only}$

$e_{\text{ment}}$ is then clearly a subpart of the corresponding $e_{\text{age}}$. Recall however that as already noted above (cf. (25)), *-ment* EDNs can be used with a *par*-phrase denoting the Agent. In this case, the whole causation must be denoted by the

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6 Funnily, at least two of the informants to which I present some of the relevant *-ment/-age* pairs seem to justify “phonologically” their choice in saying that “*-aaaaage* is longer”. Maybe some iconic effect between semantics and phonology is at play here (either *-age* has a better phonology to denote longer events, or subjects perceive *-age* nominals as denoting longer events and try to justify their intuition phonologically).
Noun Phrase, exactly as with -age EDNs. This is confirmed by the witness test; while in (27), Pierre only witnessed the change of state, in (28), he has to attend the whole causation:

(28) Pierre a assisté au gonflement des ballons par X.
    Pierre witnessed the inflation of the balloons by X
    \textit{Pierre witnessed the whole causation}

However, even if (26) and (28) have the same truth conditions, they can still differ compositionally. While in (26), the deverbal noun itself is responsible for the denotation of the causing event, in (28), the interpretation of this event results from the composition of the deverbal noun denoting a change of state with the by-phrase denoting an Agent of an event causing this change of state. As the by-phrase is responsible for the interpretation of the causing event, this event does not have to be interpreted in absence of this adjunct PP.\footnote{An interesting parallel can be made with the combination of durch-phrases with causative and non-causative changes of state predicates studied by Solstad 2007:}

\begin{enumerate}[(i)]
  \item Ein Polizist wurde durch einen Schuss aus der eigenen Dienstwaffe getötet. (Solstad, \textit{id.})
  A policeman was killed \textit{by a shot} from his own service weapon
  \item Ohnesorg starb durch einen gezielten Schuss. (\textit{ibid.})
  Ohnesorg died \textit{through an accurate shot}
\end{enumerate}

As Solstad argues, even if we have a causative predicate in (i) and an inchoative one in (ii), it seems that the semantic representation assigned in (i) and (ii) after composition with durch would be similar, in the sense that both sentences include a causing event and a specification of this causing event. However, while it is the causative predicate which is responsible for the introduction of the cause component in (i), it is the durch phrase which performs this job in (ii).

Of course, the durch-phrase differs from our par-phrase in that the latter denotes the Agent of the (implicit) cause component, while the latter directly denotes the cause component itself.\footnote{According to A. Fabregas (p.c.), Spanish suffixes also differ from each other on this point: sacudimiento denotes an iteration of shaking (for example, if the house shakes for a while as an}

The fact that with these verbal bases, -age EDNs target the causative reading of the base while -ment EDNs select the inchoative one accounts for the previously noticed preference of -age EDNs (vs -ment ones) for transitive verbs (vs intransitive ones).

\textbf{Verbal bases with an iterative/non-iterative reading.} With intransitive verbs like miauler ('meouw') and transitive ones like secouer ('shake'), the verbal stem can also denote a longer or shorter event in the sense they can denote a single event or an iteration of it. And again, with these bases, -age EDNs select the longer reading (the iterative one), while -ment ones select the shorter one (the single-event one). For instance, while miaulement and secouement denote only one production of sound/ one movement, \textit{mialage} or \textit{secouage} entail an iteration of them.\footnote{According to A. Fabregas (p.c.), Spanish suffixes also differ from each other on this point: sacudimiento denotes an iteration of shaking (for example, if the house shakes for a while as an} So again, the relation $e_{\text{age}} \cdot e_{\text{ment}}$ is verified, although in a
different way. In favour of this analysis, note that when headed by a noun like *session* which selects the iterative reading, the -ment EDNs must bear the plural morphology, which is not the case of the -age ones:

(29) Une session de miaulement/secouement
A shaking/meouwing session

(30) *Une session de miaulement/secouement
A shaking/meouwing session

(31) Une session de miaulements/secouements
A shaking/meouwing session

Besides, subjects tend to find (32) more natural than (33):

(32) Plusieurs miaulements (secouements) font ensemble un miaulage (secouage).
Several meow-ments (shake-ment) make together a meow-age (shake-age)

(33) ?Plusieurs miaulages (secouages) font ensemble un miaulement (secouement).
Several meow-ages (shake-ages) make together a meow-ment (shake-ment).

The idea that -age has an iterative value with some verbs is not entirely new. It was already proposed by Bally (1965). For Old French, Uth (2007) argues that non-eventive -age nouns (more precisely nouns denoting a non-eventive entity) systematically denote groups or kinds (which are necessarily instantiated by non-singular entity, cf. Chierchia 1998). This suggests that -age has this iterative value in eventive and non-eventive nouns.

**Verbal bases neutralising $P_1$.** As already mentioned, a property differenting two competing EDNs can be neutralised with some verbal bases. We will show here that $P_1$ is neutralised with verbs having a transitive and an intransitive reading (henceforth TIVs), but without enduring the causative/inchoative or iterative/non-iterative alternations. This is for instance the case of *pousser.*

Recall that among TIVs, most of them, like *gonfler* ('inflate') display the causative/inchoative alternation, ie entail a causation on their transitive use, cf. (34), and a change of state on their intransitive one. However, verbs like *pousser* 'push' or *tirer* 'pull' are not causative on their transitive use. They only entail an effect of an earthquake), and *sacudida* denotes a single instance of shaking (for example, if a bull hits a car only once, that is a *sacudida*). As this example already shows, there is no correspondence between the French -ment and the Spanish -miento. See Fabregas (2007) for an analysis of affix rivalry in Spanish.
event performed by the subject, but no change of state, cf. (35) (cf. Jackendoff 1990 on *push*, Stein 2007 on *pousser*):

(34) J’ai gonflé le ballon, mais il n’a pas gonflé
    I inflated the balloon, but it didn’t inflate
(35) J’ai poussé la voiture, OK mais elle n’a pas bougé (Stein 2007)
    I pushed the car, but it didn’t move

It would be weird to assume that on one of its reading, the verbal stem of these verbs denotes a change of state e’, since the verb itself does not entail it. In fact, it is more natural to assume that contrary to *gonfl*-stems, *pouss*-stems univocally denote the event e performed by the subject x, and never the change of state e’ (possibly) endured by y. Then, once combined with *-ment*, the resulting EDN corresponds naturally to the event e’ involving x. *Poussement* is indeed defined as the “action of pousser” in the dictionary *Le Littré*. As we just saw, this interpretation is available with *gonfler*-verbs when a *par*-phrase is implicated only:

(36) J’ai assisté au poussement
    >the event involving x **must** be seen
(37) J’ai assisté au gonflement
    >the event involving x **can** be seen

Given the fact that with *pousser*-verbs, bases do not exhibit the relevant underspecification (they do not have a “shorter” or “longer” reading), the *-age* DNs do not denote a longer event as the corresponding *-ment* ones as in the previous case. The property $P_1$ is then “neutralised”. *-ment* EDNs denote the same kind of eventive chain than corresponding *-age* ones.

### 4.2.2 Property $P_2$: agentivity

In the previous section, I show that *-age* and *-ment* EDNs can differ by the length of the denoted eventive chain. I will now address one of the other features differentiating the two suffixes, including when the first one is neutralised, as for *pousser*-verbs.

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9 One could wonder what exactly denote *pousser*-bases and how many of them we have to assume. In fact, it is very likely that *pousser*-bases invariably denote the performance of x, x corresponding to the subject of the transitive or the intransitive verb. In both readings, this performance can be defined the action of exerting a force in a direction that goes away from x. For instance, the event denoted in (38a) can be described as a pressure performed by Pierre away from Pierre, and the one denoted in (38b) as the pressure exerted by the tooth and away from the tooth:

(38) a. Pierre pousse la table.
    Pierre is pushing the table
b. La dent pousse.
    The tooth is growing
The first of them concerns the thematic role of the subject. As already suggested by Kelling (2004), -age EDNs are more agentive than -ment ones. My claim goes in the same direction, but differs from hers on three points. Firstly, instead of stating that -ment EDNs cannot be agentive while -age EDN must (which cannot explain the acceptability of (25)), I will assume that while -age EDNs must be agentive, -ment ones tolerate this reading without imposing it. This first claim is illustrated by the contrast above:

(39) Le décoll\_men\_t des tuiles par le vent/par l'ouvrier
\textit{The unsticking/removal of the tiles by the wind/by the worker}

(40) Le décoll\_age des tuiles par #le vent/par l'ouvrier
\textit{The unsticking/removing of the tiles by the wind/by the worker}

For instance, native speakers accept the -age version in (40) only in a context where a fictive intention is attributed to the wind.

Secondly, I will not assume with Kelling that for an EDN to be agentive, it has to attribute the role Agent to the subject, nor that EDNs derived from intransitive verbs cannot be agentive. This would impede us to explain why some unaccusative or unergative verbs like \textit{arriver} or \textit{miauler} nominalise in -age. Instead, I will assume that -age EDNs are “agentive” in the following way: \textit{the eventive chain denoted by an -age EDN must begin with an action, or must have been triggered by an action (not denoted by the noun itself)}. So in two words, -age says “look for an intention”, either inside the denoted eventive chain, or outside it. With verbs like \textit{décoller} (cf. (40)) or \textit{miauler}, this constraint is very simply translated in identifying the event denoted by the EDN itself with the required action. For instance, it explains why (41) is only accepted by native speakers in a magical context where doors intentionally make noise:

(41) Le miaule\_men\_t/#miaul\_age d'une porte qui grince
\textit{The meow-ing of a squealing door}

In the same way, poussage differs from pouss\_em\_ent in that it suggests that \textit{x} is a real Agent. This explains why pouss\_age is often used to describe a (shipping) technique, as this technique 'intrinsically' implies an Agent endowed with intention, while pouss\_em\_ent is preferred to nominalise the normally non-intentional process denoted by the intransitive reading translated with grow in English:

(42) La dent pouss\_e > le pouss\_em\_ent/#pouss\_age de la dent
\textit{The tooth is growing > the growing of the tooth.}
But sometimes, the intransitive *pousser* can also be used agentively in the relevant sense:

(43) **Poussage** de poils [title of the mail in a forum]. Svp, comment faire pour que les poils poussent sur le torse? (Internet)
Growing of hair. Please, how to proceed for hair to grow on the chest?

Crucially, (43) does not require a personification of the hair to be acceptable. Rather, the choice of *-age* is here justified by the (non default) context where the hair growing process (denoted by the noun) is intentionally triggered upstream through an action. This action is *not* denoted by the noun; as is confirmed by the witness test, cf. (44), but also by the fact that these EDNs nominalising the intransitive reading do not accept a *par*-phrase, cf. (45). This incompatibility is unexpected if the noun itself denotes the action performed by the referent of the *par*-phrase.

(44) J’ai assisté au poussage de ses poils.
I witnessed the growing of his hair
*I do not necessarily witnessed the action causing the growing event*

(45) *Le poussage des poils par X*
The growing of the hair by X.

The same way, (41) could also be appropriate in a context where somebody plays with the door in order to provoke its meowing squealing. And again, the witness test and the distribution of the *by*-phrase suggests that this action cannot be denoted by the noun itself.

The *-age* EDN derived from the intrantive verb *arriver* must also be agentive in our sense. Indeed, contrary to *arrivée, arrivage* is “agentive” in that it implies that the change of state *e’* denoted by *arriver* is caused by an action *e* (not denoted by the noun). This is the reason why (47) is weird on the *-age* version: contrary to normal assumptions, it suggests that the arrival of meteorites was caused by an action.

(46) L’arrivée/arrivage de légumes
The arrival of vegetables

(47) L’arrivée/arrivage de météorites

However, according to the witness test, *arrivage* only denotes a change of state *e’*, just as *gonflement*:

(48) J’ai assisté à l’arrivage des légumes.
I witnessed the arrival of vegetables
*I witnessed the change of state only*
Besides, data show that the Agent of the action $e$ who must have caused $e'$ cannot be expressed by a *par*-phrase:

\[(49) \quad *\text{L'arriv}^a\text{age des légumes par les ouvriers}\]
The arrival of vegetables by the workers

In conclusion, *-age* EDNs are more agentive than *-ment* EDNs not because they impose the role Agent to the subject, but because they systematically signal the existence of an (intentional) action, either at the beginning of the denoted eventive chain, or upstream.

### 4.2.3 Property $P_3$: incrementality

An interesting fact which cannot be accounted for by $P_1$ and $P_2$ is illustrated by the contrast below, where two different senses of the same verb are used:

\[(50) \quad \text{Marie a intentionnellement plissé sa jupe} > \text{Le plissement/plissage de la jupe} \]
Marie intentionally pleated her skirt

\[(51) \quad \text{Marie a intentionnellement plissé les yeux} > \text{Le plissement/\#plissage des yeux} \]
Marie intentionally squinted her eyes

If only $P_1$ and $P_2$ are taken into account, *plissage* is expected to nominalise (51) as well as (50) (in both cases, the causative reading is selected, and the adverb *intentionally* signals the presence of an intentional action). The contrast (50)–(51) is due to the third relevant property $P_3$, which has to do with the relation taking place between the denoted event and its Theme. More precisely, the hypothesis is that for *-age* to be acceptable, a (loose) incremental relation has to be conceivable between the event $e$ and the Theme $x$: for every (relevant) proper part $y$ of the Theme $x$, $y$ stands in the relation $\theta$ denoted by the verb to some proper part $e'$ of $e$ (cf. the property (46) of Krifka 1998, called *mapping to subevents*). This relation can easily be satisfied in (50) (every (relevant) part of the skirt can be the Theme of a pleating subevent), but not in (51) (it does not make sense to say that every (relevant) part of the eyes is the Theme of a squinting subevent).\[^{10}\]

\[^{10}\] The relation we need is looser than the Krifkean one (cf. Krifka 1998) because it allows the same part $y$ of the Theme $x$ to be the Theme of different subevents $e', e''...$ of $e$. For instance, VPs like *iron the skirt* satisfy our incremental relation, even if for some parts $e'$ and $e''$ of the whole ironing $e$, $e'$ and $e''$ can have the same subpart of the skirt as a Theme (e.g., the same part of the
Note that $P_3$ is neutralised with Themeless verbs like unergative ones, since these cannot be concerned by the Theme-event relation.

$P_3$ also accounts for the contrast between (53) (perfectly normal) and (54) (which is very scabrous, even when the intention to injure is taken for granted):

(52) Pierre a écrasé la banane/ le piéton
    Pierre crushed the banana/ ran over the pedestrian
(53) L’écrasage de la banane
    The crushing of the banana
(54) #L’écrasage du piéton
    The running over of the pedestrian
(55) OK L’écrasement du piéton
    The running over of the pedestrian

If (54) is scabrous, it is because in order to fulfill $P_3$, the interpreter has to evoke a scene where to different parts of the subject's action corresponds different parts of the pedestrian, ending up with a bloody scenario.

$P_3$ also accounts for the fact that sometimes, -age EDNs are better with a plural Theme. Indeed, a Theme made of a plurality of entities is an alternative way to satisfy the incremental relation when it cannot be fulfilled with one entity only:  

(56) Le tuage des mouches
    The kill-age of the flies
(57) #Le tuage de la mouche
    The kill-age of the fly
(58) L’arrivage des légumes/#d’un légume
    The arriv-age of the vegetables/of one vegetable
(59) OK L’arrivée d’un légume
    The arrival of one vegetable

4.2.4 Property $P_4$: ontological domains

The last property driving the competition between -ment and -age concerns the ontological domain to which pertains the denoted eventive chain. The proposed

\[\text{skirt can be ironed twice). In other words, we admit here that an incremental relation takes place between the event and the Theme even if the property (47) of Krifka 1998 (uniqueness of events) is not satisfied.}

\[\text{11 There are some exceptions to this picture though. For instance, poussage used to denote a shipping technique does not seem to require a plural Theme to be acceptable. I do not have an explanation for this.} \]
hypothesis is that -age is marked for a specific domain, namely the physical one, while -ment is ontologically unmarked.

A first prediction of this hypothesis is that -age will not be selected by verbs which do not have a physical reading. This is the case of a subset of psych-verbs, like penser 'think', préoccuper 'preoccupy', effrayer 'to frighten', or imaginer 'imagine'. And indeed, the -age EDNs of these verbs appear odd to native speakers (cf. pensage, préoccupage, effrayage, imaginage). However, one finds from time to time occurrences of them, but they seem to involve a metaphor: the psychological interaction is depicted as a physical one. For instance, effrayage is slightly present in corpora, but it denotes the (physical) event by which one triggers fear on the Experiencer (and, as expected given $P_2$, this causing event is conceived as an intentional action).

Another prediction of the hypothesis is that when the base is underspecified wrt to the ontological domain of the denoted event (like gonfler 'inflate', which can denote a physical event or an abstract one depending on the nature of the Theme), -age will select the physical reading, and -ment the other ones. This is indeed the case, cf. (60). And again, when an abstract event is denoted with the help of an -age EDNs as in (61), a metaphor seems to be involved in the interpretation:

(60) Le gonflement des prix / le gonflage du ballon
   The inflating of the prices [abstract Theme]/ the inflating of the balloon [physical Theme]
(61) Le gonflage des prix (metaphorical)
   The inflating of the prices

$P_4$ is less coercitive than properties $P_1$-$P_3$, since it often seems possible to accommodate it with a metaphorical reading.

5. -ment versus -ion

This section is dedicated to the differences between the suffixes -ment and -ion. The competition between these two suffixes represents a much more difficult area than the previous one, maybe because -ion and -ment are supposed to be quite unproductive in modern French -- although not totally, while -age is very productive, cf. Heinold (2007)\(^{12}\). Indeed, the relative difficulty to create

\(^{12}\) For instance, in a corpus of the newspaper Le Monde extending on several years, Heinold found 65 neologisms in -age, 10 in -ment and 20 in -ion. It should be noted, however, that in less formal corpora, one finds quite often neologisms in -ment and -ion. Of course, these productions can be analysed as results of lexical incompetence. But then, as already said in the introduction, the question remains of why some neologisms never show up in any corpora.
neologisms in -ion and -ment obliges to play with verbs who actually have the two nominalisations.

Dubois 1962 assumes that -ment and -ion are synonymous and come from the same syntactical structures. He only notes that two competing nominalisations select different readings of the same verb, the -ion ones being “more technical or more recent” (id., p.28). In what follows, I will show that there are more systematical differences between -ion and -ment than suggested in previous literature.

5.1 Property \( P_1 \): length of the eventive chain

Roughly, as far as \( P_1 \) is concerned, there seem to exist some similarities between -age and -tion in the way they compete with -ment.\(^{13}\)

Firstly, with bases of causative/inchoative verbs, -ion EDNs tend to be underspecified: they can target either the 'longer' or the 'shorter' reading (while, as we saw before, -ment selects the shorter one). More precisely, -ion can either denote the whole causation, or the change of state only, while -ment denotes the change of state, but not the whole causation.\(^ {14}\) This is illustrated here:

(62) L’isolement de la maison
The house’s isolation
   i. the isolated (change of) state of the house
   ii. #the action of isolating the house

(63) L’isolation de la maison
The house’s isolation
   i. the isolated (change of) state of the house
   ii. the action of isolating the house

(64) Le dénaturement de la presse
The denaturation of the press
   i. the press alters by itself
   ii. #an external event triggers the alteration\(^ {15}\)

\(^{13}\) I should add that some of the native speakers I consulted do not have intuitions about the distinctions made in this sub-section, which seems to suggest, as Dubois (id.) proposes, that -ion and -ment tend to be used as synonyms in modern French. However, some other speakers do recognise them, and we will see that they also receive some diachronical and syntactical support.

\(^{14}\) It is interesting to see that this hypothesis is confirmed by some dictionaries, but not all. For instance, Le Littre defines dénivellement (deleveling) as the result of the process denoted by dénivellation (deleveling). But Le Trésor de la Langue française defines dénivellement as denoting an action.

\(^{15}\) Of course, this reading is acceptable for (64) as soon as a par-phrase is added (cf. the discussion above about (27)-(28). But the point here is that it is not available in absence of such a PP.
The Semantics of Eventive Suffixes in French

(65) La dénaturat\textsuperscript{ion} de la presse
   The denaturation of the press
      i. the press alters by itself
      ii. an external event triggers the alteration

   With some alternating bases, -ion EDNs only access the long reading. This
   confirms that -ion is more 'causation' oriented while -ment is more 'result' -
   oriented. For instance, finition 'finishing' cannot denote the change of state only,
   and must denote an event triggering it upstream. This explains the unacceptability
   in (67b), since the ending of the autumn cannot be caused by an event of which it
   would be the Theme.

(66) Le finisse\textsuperscript{ment} de l'automne
   The ending of the autumn.

(67) a. La finition du poème
       The finishing of the poem
   b. #la finition de l'automne
       The finishing of the autumn

(68) La voiture s'est déportée sur la gauche.  (inchoative reading)
   The car swerved to the left

(69) Le déporte\textsuperscript{ment}/#la déportat\textsuperscript{ion} de la voiture
   The swerving of the car

(70) Les Nazis ont déporté des millions de Juifs. (causative reading)
   Nazis sent millions of Jews in concentration camps

(71) Le #déporte\textsuperscript{ment}/la déportat\textsuperscript{ion} des Juifs
   The deportation of the Jews

   As with causative/inchoative bases, -ment EDNs tend to denote the change
   of state only, it is harder to adjunct them a par-object than with -ion EDNs:

(72) L'oppression/l'excitation des enfants par Paul
       The oppression/excitation of the children by Paul

(73) L'oppr\textsuperscript{essient}/l'excit\textsuperscript{ement} des enfants #par Paul
       The oppressment/excitement of the children by Paul

   Causative bases without inchoative readings (ie, obliged to denote the entire
   causation on all their uses) also confirm that -ion denotes longer eventive chains
   than -ment. Indeed, such bases have more difficulty to combine with -ment than
   with -ion. On the other hand, -ment neologisms are not rare with causative verbal
   bases having an inchoative reading (if the -ment noun does not already exist in the
   lexicon). This can be illustrated through a difference between two types of
   causative psych-verbs, namely indigner-verbs (which have an inchoative reading,
   cf. (75)–(76) below), and s\textsuperscript{éduire}-ones (which do not exhibit the inchoative
   reading, cf. (77)–(78)). With s\textsuperscript{éduire}-verbs, the pronoun se is always interpreted
as a reflexive pronoun (while the interpretation of *se* with the inchoative reading is of course not reflexive):

(75) a. Paul s'est indigné.
   i. Paul got indignant (inchoative reading)\(^{16}\)
   ii. Paul did something which made him indignant (causative reading)
   b. Indignation (listed in dictionaries), °indignement (184 occ. in corpora)

(76) a. Paul s'est irrité de ma réponse. (inchoat. r.)/ Paul s'est irrité lui-même. (causative r.)
   Paul got angry about my answer / Paul irritated himself
   b. Irritation (listed in dictionaries), °irritement (133 occ. in corpora)

(77) a. Paul s'est séduit.
   i. Paul seduced himself (causative reading)
   ii. no inchoative reading
   b. Séduction, *séduisement* (0 occ. in corpora)\(^{17}\)

(78) a. Paul s'est humilié.
   i. Paul humiliated himself (causative reading)
   ii. no inchoative reading
   b. Humiliation, *humilient* (2 occ. in corpora)\(^{18}\)

Note that the Latin suffix -tio was already more ‘causative’ than the Latin suffix -men(tum). The following pairs taken from Gaffiot (1934) shows that -io nominalisations tend to denote the causation or the result of it, while -men(tum) corresponding ones denote either the result of the action or one of its reifications:\(^{19}\)

(79) a. motio, -onis: action of moving, movement, impulsion
   b. momentum (movimentum): movement, impulsion

(80) a. fractio, -onis: action of breaking
   b. fragment: fragment, broken pieces

(81) a. argutio, -onis: action of blaming
   b. argumentum: argument, evidence

---

\(^{16}\) Under this reading, the verb often takes a *de*-object indicating the Theme of the denoted emotion (*Il s'est indigné de son arrivée, ’He got indignant about his arrival’*), cf. also the inchoative reading in (76a). This *de*-object is not acceptable with *séduire*-verbs in presence of the pronoun *se*.

\(^{17}\) In fact, I found one occurrence of it, but it was clearly a typo for the present participle *séduisant*.

\(^{18}\) In one case, humilient is irrelevantly used as an adverb. The second occurrence is from the dictionary *Le Littré*, who notes that *humilient* existed in the past.

\(^{19}\) Note that some precaution is in order with this kind of etymological arguments, since, as underlined by Merk (1970), the correspondence between French and Latin suffixes is far from perfect. For instance, -tio nouns have given -ion but also -ance and -ment nouns.
As for intransitive verbs denoting a single event or an iteration of it, $P_1$ does not seem to play any role in the competition between -ment and -ion. Sometimes, -ion seems to target either the short or the long reading, while -ment selects only the short one (for instance, it is more natural to conceive a suffocation as an iteration of suffoquements than the reverse). But this does not seem to be a general tendency, and it does not clearly reflect in the plural/singular morphology. Besides, $P_1$ does not make any prediction about intransitive verbs which do not have an iterative and a non-iterative reading, nor about causative verbs who systematically denote the whole causation (ie without a inchoative reading) and for which the nominalisation in -ment and in -ion are both available in the lexicon. Indeed, as with such verbs, any nominalisation denotes the whole causation, one cannot say anymore that -ion ones only target the long reading.

5.2 Property $P_4$: ontological domains

However, other features allow to differentiate the two suffixes with all these classes of verbs. Very often, when comparing semantically their -ment EDN and the corresponding -ion one, one finds that the latter one roughly corresponds to the first one, but augmented with adjuncts specifying further some properties of the process:

(82) a. agenouillement: action of kneeling or its result (TLF)
    b. génuflexion: action of kneeling in sign of respect or submission (id.)
(83) a. crucifiement: action of crucifying (Le Petit Robert)
    b. crucifixion: “crucifiement de Jésus-Christ” (id.), ie “crucifixion of Jesus-Christ”

The same way, a ‘renonciation’ could be defined as a ‘renoncement’ made public (which explains why one can sign a renonciation, but not a renoncement, or why déclaration de renonciation is fine, while déclaration de renoncement is strange).

Very often, the specification carried out by -ion triggers a change in the ontological domain to which pertains the denoted event: while an agenouillement can be a simple physical event, génuflexion compulsorily denotes a social, ethical event. Of course, the target domain can vary from nouns to nouns, but in many cases, -ion transfers the event denoted by the corresponding -ment noun in an abstract domain.

20 Note that crucifier ‘crucify’ does not endure that causative/inchoative alternation. In that case, -ment EDNs do no denote the change of state only, since the verbal base is not underspecified in the relevant way.
Note that there is a common point behind the properties $P_1$ and $P_4$ in the way they differentiate the two suffixes, namely that in both cases, -ion has a richer, more complex meaning than the corresponding -ment one.

5.3 $P_5$: discontinuity

Another intuition about the difference between -ment and -ion is that -ion is more 'prototypically telic' than -ment. Firstly, note in table 1 above that even if -ment take bases of verbs having a telic reading, it is less often the case than -ion (46% versus 57%). Secondly, the bases selected by -ion resemble more the prototypical eat a sandwich VPs than the ones selected by -ment. Indeed, with verbs denoting an event $e_1$ and a change of state $e_2$, -ion EDNs seem to require that the event $e_1$ can be conceived as performed in several discontinuous steps $e_1', e_1'', e_1'''$... (subevent/subresult, pause, subevent/subresult, pause...). I will assume that the verb satisfies this requirement when it can be modified by *en plusieurs étapes 'in several steps'. On the contrary, -ment seems to preferably select bases denoting an event conceived by default as taking place "in one shot". This difference is illustrated below:

<table>
<thead>
<tr>
<th></th>
<th>French</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>(84) a.</td>
<td>J'ai éclaté le ballon #en plusieurs étapes.</td>
<td>I exploded the balloon in several steps</td>
</tr>
<tr>
<td></td>
<td>b. éclatement/*éclatation</td>
<td></td>
</tr>
<tr>
<td>(85) a.</td>
<td>Samira a alphabétisé Pierre en plusieurs étapes.</td>
<td>Samira alphabetised Pierre in several steps</td>
</tr>
<tr>
<td></td>
<td>b. alphabétisation/*alphabétissement</td>
<td></td>
</tr>
<tr>
<td>(86) a.</td>
<td>Il m'a étonné/affolé #en plusieurs étapes.</td>
<td>He astonished/threw me into panic in several steps</td>
</tr>
<tr>
<td></td>
<td>b. étonnement, affollement/*étonnation, *affolation</td>
<td></td>
</tr>
<tr>
<td>(87) a.</td>
<td>Il m'a séduit/humilié en plusieurs étapes.</td>
<td>He seduced/humiliated me in several steps</td>
</tr>
<tr>
<td></td>
<td>b. séduction, humiliation/ *séduisement, *humiliement</td>
<td></td>
</tr>
</tbody>
</table>

There are counter-examples to this correlation (for instance, gonfler is acceptable with *en plusieurs étapes but cannot nominalise in -ion), but until now, I found more nouns confirming it than the reverse. Dumay & Martin (2008) try to test it through experiments on pseudo-verbs.

6. -age versus -ion

Several predictions about the differences between -age and -ion derive from what has been proposed in the sections 4 and 5. Firstly, we expect -age and -ion to preferably denote events from different ontological domains when attached to the same bases. This is confirmed by the following data:
The Semantics of Eventive Suffixes in French

(88) a. un cassage de doigt, #une cassation de doigt (physical event)
    a breaking of a finger
b. la cassation d'une décision juridique, #le cassage d'une décision juridique (jur. event)
    the canceling of a juridical decision

(89) a. le fixage d'un tableau (non metaphorical)
    The fastening of a painting
b. le fixage des prix (metaphorical) vs la fixation des prix (non metaphorical)
    The setting of the prices

Note however that -ion can sporadically denote physical events too. For instance, fixation would be acceptable in (89a) without involving any metaphor (whereas it is not possible in (88a)). But this does not undermine the claim that -age and -ion differ in their preference for specific domains.

Another expected difference is that contrary to -age which always implies the presence of an action (cf. P2), making it difficult to use to denote pure change of state (ie not caused by the action of an entity upstream), -ion can denote such pure changes of state. Take again the verb fixer when it translate the intransitive settle (as said above, this inchoative reading often requires the use of the pronoun se)

(90) a. La tribu s'est fixée dans cette région.
    The tribe settled in this region
b. La fixation de la tribu/#le fixage de la tribu
    The settling of the tribe

On this use of fixer, -age cannot be used, except if the speaker wants to signal the existence of an action upstream of which the settling is the result.21

Dessaler also only nominalises in -ion in its inchoative reading (examples taken from Dubois 1972, p.28):22

(91) a. On dessale l'eau de mer. Le dessalage de l'eau de mer
    We remove the salt from seawater The removing of the salt from seawater

21 Note that because of the incrementality constraint imposed by -age (cf. P3), (90b) in the -age version would also require in this agentive context that the Agent acted on different parts of the tribe to get it settled in the region.
22 Dubois only states that -age and -ion select different readings of the verb. For the same syntactical frame, the only difference he seems to make between -age and -ion is that -ion selects the more technical reading of the verb. This criteria does not apply to (91), where the two meanings are equally technical.
b. L'équipage du canoé a dessalé. La dessalaison\textsuperscript{23}/le dessalage de l'équipage

The crew of the canoe capsized The capsizing of the crew

The same way, (92), but not (93), automatically suggests the existence of an action upstream triggering the Theme's change of state (which makes e.g. the earth version of (92b) odd, except if we admit that the Earth's glaciation was triggered by a divine action).

(92) a. Le dispers\textit{age} des cendres (no 'by themselves' reading)
The dispersion of the ashes
b. Le glaç\textit{age} du gâteau/ #le glaç\textit{age} de la terre
The glazing of the cake/the glaciation of the Earth (intended reading)
c. Le perfor\textit{age} du mur/#le perfor\textit{age} de l'intestin
The perforation of the wall/the perforation of the intestine.

(93) a. La dispers\textit{ion} des cendres ('by themselves' reading OK)
The dispersion of the ashes
b. La glaciation de la terre ('by itself' reading OK)
The glaciation of the Earth
c. La perforation de l'intestin ('by itself' reading OK)
The perforation of the intestine.

(95) Le °dispers\textit{age} des cendres a abouti à leur dispers\textit{ion}.
The 'dispers\textit{age}' of the ashes resulted in their dispersion

(96) #La dispersion des cendres a abouti à leur °dispers\textit{age}.
The dispersion of the ashes resulted in their 'dispers\textit{age}'

(97) Le °désinfect\textit{age} de la plaie a abouti à sa désinfection.
The 'disinfect\textit{age}' of the wound resulted in its disinfection

(98) #La désinfection de la plaie a abouti à son °désinfect\textit{age}.
The 'disinfect\textit{age}' of the wound resulted in its disinfection

\textsuperscript{23} Some verbs like \textit{dessaler} nominalise in –aison and not in –(at)ion, but this suffix –aison is the same as the –ion one under study here.

\textsuperscript{24} This is for instance corroborated by the acceptability of a sentence like \textit{La vente d'un objet aboutit au transfert de sa propriété} 'the selling of an object results in the transfer of its property' (since the property transfer corresponds to the last part of the eventive chain denoted by \textit{the selling}).
As expected, (96) and (98) are unappropriate because -age necessarily denotes the whole causation. This forces to end up either with an interpretation where a whole causation \( C \) results in itself (if the –ion EDN denotes the whole causation \( C \) too), or with an interpretation where the result of a causation \( C \) results in the causation \( C \) (if the –ion EDN denotes the result only).

A last prediction is that -ion will be ceteris paribus preferred to -age when the incremental relation between the event and the Theme imposed by -age cannot be satisfied (cf. \( P_2 \)). This is supported by the following contrasts:

(99) Le codifi\textit{age} d'un texte/?d'un nombre  
The codifying of a text/of a number
(100) La codification d'un texte/d'un nombre  
The codification of a text/a number
(101) Le numérot\textit{age} d'une rue/?d'une voiture  
The numbering of a street/of a car
(102) La numérotation d'une rue/d'une voiture  
The numbering of a street/of a car
(103) Le modifi\textit{age} d'une image/?d'un chiffre  
The modifying of an image/of a figure
(104) La modification d'une image/d'un chiffre  
The modification of an image/of a figure

7. Conclusions

Table 2 below summarises the differences made in sections 4-6 between the three suffixes under study on their eventive reading.

<table>
<thead>
<tr>
<th></th>
<th>-age</th>
<th>-ment</th>
<th>-ion</th>
</tr>
</thead>
<tbody>
<tr>
<td>( P_1 )</td>
<td>long reading with underspecified verbal bases</td>
<td>short reading with underspecified verbal bases</td>
<td>long or short readings with underspecified verbal bases</td>
</tr>
<tr>
<td>( P_2 )</td>
<td>[+AGENTIVE]</td>
<td>[+AGENTIVE]</td>
<td>[+AGENTIVE]</td>
</tr>
<tr>
<td>( P_3 )</td>
<td>incrementality between event and Theme</td>
<td>unmarked</td>
<td>unmarked</td>
</tr>
<tr>
<td>( P_4 )</td>
<td>physical domain</td>
<td>all domains</td>
<td>preference for the abstract domain</td>
</tr>
<tr>
<td>( P_5 )</td>
<td>[-DISCONTINUITY]</td>
<td>[+DISCONTINUITY]</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: semantical/aspectual differences between the three eventive suffixes under study
In sum, I hope to have made clear that these three suffixes are semantically rich and seem to function as aspectual markers similar to verbal ones. However, contrary to verbal markers, nominalising suffixes often give rise to specific lexicalisations and are not equally productive. Hence, the competition between them is harder to modelise, and diachronical factors arguably play a bigger role than suggested here. But clearly, the choice of the suffix in the nominalising process does not only depend on historical accidents, as it is traditionally often assumed.

References

The Semantics of Eventive Suffixes in French

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