A corpus-based view on the (aspectual-)semantics of Modern English nominalizations

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0. Abstract

In this response article, I will challenge some of the claims presented by Iordachioaia & Werner by suggesting that English ing-nominals were not prevented from completing the ‘cycle of categorial shift’, and questioning the actual impact of the competition with Romance derived nominals on the specialization of ing-nominals with event denotation (i.e. nominal gerunds). The response is based on a detailed corpus-based analysis of Penn corpora of Modern English (PPCEME & PPCMBE, time span: 1500-1920), and consists of three components: (i) a summary of a recent study by Fonteyn & Hartmann (2016), in which it is argued that nominal gerunds do complete the full nominalization cycle from eventive to concrete object meanings, (ii) a more fine-grained aspectual-semantic analysis of eventive ing-nominals (or nominal gerunds), and (iii) a detailed comparison between ing-nominals and Romance derived nominals in -age, -al, -ance, -ion, and -ment, mapping out the areas of overlap and the effect of competition on the semantic development of the different nominalization strategies. In the conclusion, it is argued that the intriguingly versatile usage profile of English ing-nominals in Modern English is shaped by a constant diachronic interaction with their neighbouring constructions.

1. Introduction

In their explorative theoretical study, Iordachioaia & Werner (this volume) set out the hypothesis that the semantic differences between English ing-nominals (to be understood here as a cover term for all nominal ing-forms in English excluding verbal gerunds) and German ung-nominals attested in the present-day variants of the languages can be explained through the fact that they underwent diverging diachronic developments. The main topic they address is the aspectual-semantic difference between the two forms, i.e. the different ways in which the internal temporal constituency and boundaries of the situations they express is viewed (Comrie 1976; Smith 1997: 3; Lyons 1977: 710-711; Sasse 2002: 201). The aspectual difference Iordachioaia & Werner describe is one of ‘process’ versus ‘result’ semantics, which corresponds to a dichotomy between situations that are construed without boundaries, and situations which include a ‘natural’ endpoint and result state, also called ‘telos’; cf. Janda 2008). More specifically, Iordachioaia & Werner suggest that English ing-nominals remained processual because a series of nominalization strategies borrowed from French prevented them from acquiring result-oriented or telic semantics, which is related to the loss of grammatical gender in English occasioned an increase in mass semantics in English.

An interesting claim that emerges from Iordachioaia & Werner’s discussion is that the proposed aspectual-semantic distinction between Present-day English ing-nominals – which are said to refer to processes – and the more ‘result-oriented’ German ung-nominals reflects a (semantic) difference in categoriality. Thus, some of Iordachioaia & Werner’s claims echo the programmatic claim made by functional and cognitive linguists that there is a notional or functional basis underlying grammatical categories such as ‘noun’ and ‘verb’ (e.g.
Hopper & Thompson 1985; Langacker 1987; Croft 1991; Taylor 1995). Accounts that argue in favour of such a ‘notional’ definition of nouns and verbs generally argue two things: first, that grammatical categories, like everyday categories, are centred around a conceptual prototype and comprise typical and untypical members, and second, that it is possible to set out a abstract schematic definition or template that generalises over and captures all members of the category (e.g. Langacker 1987). Despite the undeniable diversity of the concepts denoted by the grammatical category ‘noun’ and ‘verb’, the idea has been put forward that nouns are essentially stable containers of information, while verbs are transitory or sequential relational concepts (e.g. Sapir 1921: 117-119; Bolinger 1980: 27; Gentner 1981: 176; Hopper & Thompson 1984; Langacker 1987, 2008a, 2008b; Croft 1991, 2000, 2001; Schmid 1999: 221-222; Mihatsch 2009; also see Fonteyn 2016 and the discussion in Hartmann: this volume). These abstract characterisations of ‘noun’ and ‘verb’ are considered to be maximally opposite (Langacker 1987), as they are centred around the two maximally opposite conceptual prototypes of concrete object with distinctive shape/boundaries/delineation (or ‘THING’ for nouns) and physical actions (or ‘PROCESS’ for verbs) (e.g. Lyons 1968: 318; Hopper & Thompson 1985; Bates & MacWhinney 1982). Generalising over all specific occurrences of English V-ing and German V-ung, Iordachaia & Werner argue that the concepts denoted by formations with English -ing like beating, walking, and destroying closely adhere to the verbal conceptual prototype of ongoing dynamic action, while formations with German -ung such as Wertung and Zerstörung typically involve reference to a result state or telos and are thus more delineated and less processual (implying that such delineation is a nominal trait; for a similar discussion see, among others, Hartmann (2014) and Demske (this volume)). Similarly, it has been argued that in general process readings of German ung-nominals are rather marked whereas concrete object readings are common (Erich & Rapp 2000), which is supposedly not the case for English ing-nominals (Demske 2002; Bauer, Lieber & Plag 2013; Borer 2013).

Turning to the question how this categoriality difference between the two historically related suffixes -ing and -ung came about, Iordachaia & Werner suggest that German ung-nominals fully completed the so-called “cycle of categorial shift” from a processual verb-noun hybrid to a more prototypical nominal, while English ing-nominals were prevented from doing so. Diachronically, there appears to be an interesting and cross-linguistically well-attested tendency for untypical nouns to be attracted towards typical core nouns. While processes of semantic change are often unpredictable and idiosyncratic (cf. Hartmann 2014: 8), Mihatsch (2009: 83) explains that such untypical nouns quite frequently develop along a pathway “of unconscious reification triggered by the conceptual noun schema”, which is “not caused exclusively by any external factors such as cultural influences (although

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1 In Cognitive Grammar, these abstract templates have been linked to how nouns and verbs are processed and conceptualized by language users: nouns are conceptually independent entities which are summarily scanned (i.e. conceived of as stable discourse units), while verbs are scanned sequentially (Langacker 2008b).

2 It is crucial to note here that these conceptual prototypes are not considered as conditions for or determinants of morphosyntactic categoriality, meaning that it is certainly not claimed that ball and man are in any way ‘better’ nouns than war and birth. I have argued elsewhere that prototypical nominality on the functional-semantic level is most likely a cluster concept comprising of intersecting semantic and discourse-functional properties (Fonteyn 2016, extension of the ideas presented in Croft (2001) and Langacker (2008a)), and it still remains to be empirically verified if morphosyntactic and functional-semantic prototypicality can be alligned. For reasons of brevity, and because the present study merely deals with semantic change (and hence no claims are made about morphosyntactic categoriality), I will not go into detail here.

3 For an overview of psycholinguistic research supporting that nouns are associated with the conceptual prototype THING, see the discussion in Mihartsch (2009).
extralinguistic information provides the semantic material). One such recurring pathway involves deverbal nominalizations, which tend to undergo “categorial change of meaning (…) for which the term ‘drift’ (…) seems convenient” (Panagl 1987: 146). It is suggested that this semantic attraction to the nominal prototype occurs gradually, and “tends to proceed through the level of resultative noun (nomen acti) and in many cases reaches the level of concrete noun (interpretable as instrumental or local)” (Panagl 1987: 146). It is this ‘drift’ in denotational properties of nominalization patterns – going from processual meaning to a more delineated resulting product – that is said to have affected German unq-nominals, but not English ing-nominals. Bauer, Lieber & Plag (2013: 208), for instance, conclude that nominalizations in -ing “characteristically display eventive [i.e. verb-like] readings and are less prone to (…) semantic drift” than other nominalization strategies in English such as zero-affixation, and related patterns in other languages, like German unq-nominalization (see also Demske 2002).

In this response article, I would like to question the proposed characterisation of English ing-nominals by pointing out that (i) it might not be the case that English ing-nominals were prevented from completing cycle of categorial shift, and (ii) the overall diachronic impact of the specialization of ing-nominals with event denotation (also called nominal gerunds), which Iordachioaia & Werner suggest was evoked by their competition with Romance derived nominals, might have been limited. First, I will go over some methodological issues that are crucial to the semantic study of aspect in Present-day as well as historical languages (Section 2). Subsequently, I will map out the different uses of English ing-nominals as they were attested in the Penn corpora of Modern English (covering the time span between 1500-1920) in Section 3. This section consists of three components. Section 3.1 provides a summary of a recent study by Fonteyn & Hartmann (2016), in which it is argued that ing-nominals do increasingly refer to concrete objects. Subsequently, I will take a more fine-grained perspective on eventive ing-nominals (or nominal gerunds). In Section 3.2, I will setting out the different aspectual types nominal gerunds express, and show that they are neither limited to nor specialised in presenting atelic processes. This also becomes evident in Section 3.3, where the usage profile of English ing-nominals is compared to that of Romance derived nominals in -age, -al, -ance, -ion, and -ment. In section 4, finally, I will conclude this response by arguing that, in usage, English ing-nominals are intriguingly semantically versatile due to a constant diachronic interaction with their neighbouring constructions.

2. Aspect and nominalization in Present-day English: a methodological note

Regarding the aspectual features of nominal gerunds in Present-day English, Iordachioaia & Werner (this volume) suggest that “ing exhibits a preference for atelic verbs and the nominal it derives highlights process readings”. In other words, there is a selected set of verbs available in the lexicon (preferably atelic ones such as run, work, read, etc.) that is allowed to be used in the ing-nominal construction, and, when used in this construction, the base verb will be transformed in such a way that it is ultimately read as a process (that is ongoing), rather than as the resulting state of that process. While Iordachioaia & Werner seem to regard the aspectual selection of base verbs as related to (even causing) its processual semantics, I believe that they do in fact touch two different levels of analysis: one regarding the combinatory potential of nominal gerunds (which base verbs can be used in the construction), and another one regarding the aspectual semantics of the nominal gerund construction. This
becomes evident when Iordachioaia & Werner (this volume) state that “ing is not excluded with result/telic verbs (…), but ing does emphasize the process part of an event”, suggesting that the nominal gerund projects a specific ‘processual’ construal on the verbs that occur in it. In this respect their claims are reminiscent of Brinton (1998: 48), who proposes that English ing-nominalizations do not preserve the aspectual features of their base verb, but “convert a situation into an activity, (…) making the situation durative, atelic, and dynamic”. Thus, even though arriving is in principle a telic verb, a sentence like *His arriving occurred at 5:00 is considered ungrammatical because the ing-nominal yields an atelic process.

The issue I would like to raise before moving on to the analysis of nominalization in Modern English is that it is perhaps more difficult to verify and uphold such claims than it might initially seem. The assumption that lies at the heart of the hypothesis presented by Iordachioaia & Werner is that it is possible to tease out the basic or ‘default’ aspectual type of a verb out of its linguistic context, and subsequently contrast it with the aspectual output of the contexts in which it occurs. Yet, in a wide range of aspectual studies, it is argued that the semantic distinction of telicity/atelicity can be ascribed to a wide variety of (complex) expressions, ranging from lexical verbs to verb phrases and even full sentences (cf. e.g. Verkuyl 1972; Dowty 1979: 61-65; Nordenfelt 1977: 34-36; Mittwoch 1980: 206-211; Mourelatos 1981: 196-197; Moens 1987: 150-151; Mommer 1986: 61-62; Brinton 1988: 26, 45-50; Shi 1990: 48-50; Binnick 1991: 191; Smith 1991; Depaerete 1995: 4; Croft 2012: 31ff., 69). For instance, whether or not wrote has an endpoint depends on whether it combines with a single count noun object (making it telic) or a bare plural or abstract/mass object noun (resulting in an atelic activity):

(1) I wrote a postcard. [telic]
(2) I wrote postcards/poetry. [atelic]

Similarly, contextual factors like adverbs can determine whether the action expressed by the verb should be interpreted as instantaneous or ‘punctual’, or whether it is ‘durative’ and lasts for a certain stretch of time:

(3) Denise touched the water with her finger (quickly / for a few minutes).

As such, the aspectual meaning “is carried by the interaction of various linguistic features” (Freed 1979: 12-14) and is not confined to verb lexemes. Due to the wide range of factors that affect the aspectual semantics of verb lexemes and the constructions they occur in, we find that, in practice, that many verb predicates in English acquire different meanings as they are used in different contexts, allowing “at least two or three [aspectual] construals” (Croft 2012: 84). To tease out the aspectual import of such contextual factors, it is assumed that each verb lexeme has a basic ‘lexicalised’ aspectual type (Rappaport Hovav & Levin 2010), which can then be transformed into or recategorized as another type by adding additional elements. For instance, we can analyse the lexeme read as an activity, which is turned into an accomplishment when the direct object a book is added (cf. Poutsma 1926: 291; Vlach 1981: 274; Moens & Steedman 1988; Herweg 1991: 363). Similarly, a lexeme like destroy is assumed to be inherently telic, but it is recategorized as an (atelic, ongoing) activity (or in some models, as a state: cf. Parsons 1990; Michaelis 2004) when used in the progressive he is destroying our lives. To verify the hypothesis that nominal gerunds preferably combine with atelic verbs and construe situations as processual, then, the researcher has to assume an ‘inherent’ or basic aspectual type for all verb lexemes.
One problem here is to decide how we can (or should) determine the basic or ‘default’ aspectual type of a verb lexeme. A point that has been raised is that it is in fact problematic that, in more theoretical approaches to aspectual semantics, it is simply assumed that the analyst can easily distinguish the default aspectual type of a verb lexeme from the aspectual construal that is imposed on it through contextual features, by decontextualizing it, or using it in a ‘neutral aspectual context’. Yet, it has been argued that this might not be as straightforward as it appears, as “every occurrence of a verb is in a definite context, and there is no obvious way of determining what a ‘neutral aspectual context’ would be like” (Dahl 1985: 26-27). Moreover, it is possible to think of cases where one simply cannot depend on intuition to determine a verb lexeme’s default aspectual type: while it seems highly likely that the default interpretation of a verb like *die* is telic (as it implies a telos, i.e. death), it is much harder to intuitively characterize a verb like *touch* as inherently punctual or durative.

Keeping in mind the issues raised here, I believe there are a few ways to empirically verify the hypothesis presented by Iordachioaia & Werner. The first would be to determine which verb lexemes (or predicates) occur as *ing*-nominals through a more data-driven approach, using either systematically elicited (questionnaire) data or found data from a corpus (or a combination of both). With a considerably large data set, the analyst can make somewhat more ‘objective’ claims about the relative ‘acceptability’ of word formations by determining their token frequency, and comparing it to the token frequency of their base verb elsewhere in the data (e.g. testing whether particular lexemes are attracted or repelled by a construction by means of a collostructional analysis (Gries & Stefanowitsch 2004)). Similarly, the analyst can aim attest the number of aspectual construals (state, activity, etc.) for each verb lexeme (e.g. *read*) or predicate (e.g. *read the*/*this*/*that*/*a* book), as well as the relative frequency of each construal. This allows the analyst to determine whether the lexeme has a default aspectual sense, which can then be compared to the (preferred) occurrence of that lexeme as it occurs in nominal gerunds or other types of nominalization strategies. As such, there should be less danger of depending on arbitrary judgements of default aspectual semantics (see also Brinton 1988: 31). Another way to approach the issue is by assuming only one level of analysis, focussing on the aspectual semantics of nominal gerunds as it emerges in their full usage contexts. For present-day English gerunds, this approach has been applied by Heyvaert, Maekelberghe & Buyle (this volume). Using a sample of 500 nominal gerunds (and 500 verbal gerunds), they quantitatively mapped out the aspectual-semantic profile of the construction, considering the various contexts in which it is used simultaneously. From their analysis, it emerged that the a substantial number of nominal gerunds construed the situation as telic, leading them to conclude that the nominal gerund construction might well be aspectually neutral rather than ‘processual’ (also see De Smet & Heyvaert 2011).

The remarks presented here have mainly focussed on some issues arising in the literature on aspectual semantics in present-day language, but they are critical for the analysis of historical data as well. In particular, while it might be up for discussion whether the analyst can rely on introspective judgements of native speakers to determine the default aspectual-semantics of decontextualized base verbs in Present-day language, it seems much more evident that they cannot do so in the analysis of historical languages (as there are no native speakers of 17th century English currently alive to provide us with such judgements). The implications this has for the analysis presented below are as follows: if the analyst wishes to make any claims on the meaning of a given construction in a historical variant of a language, they must draw conclusions from explicit contextual cues that highlight one reading over another. Thus, because the analyst as a necessity has to rely on the linguistic contexts in
which the constructions are used to make a calculated guess at their aspectual semantics, it becomes impossible to assume two different levels of analysis in which one discusses the default semantics of the base verbs and another discusses the construal imposed on those default semantics. Thus, I will take an approach similar to that of Heyvaert, Maekelberghe & Buyle (this volume) and refrain from making claims about the meaning of the attested ing-nominals (and derived nominals with a Romance suffix) without taking their usage context into account.

3. Diachronic development in Modern English ing-nominals

3.1 Ing-nominals shifting from events to objects

The claim that ing-nominals – unlike their German counterparts in -ung – convey processual semantics is quite common in the existing literature. In her elaborate corpus-based study of German ung-nominalization, Demske (2000, 2002) is the first set out the workings of a semantic drift from process to object in German ung-nominals, which she calls ‘nominalization in the literal sense’. Demske argues that, for instance, the -ung-nominalization Heizung in Present-Day German commonly refers to a concrete object (i.e. a ‘heating installation’), while reference to the ‘process of heating’ with Heizung would be marked (also see Erich & Rapp 2000). Similarly, Lesung (from lesen ‘(to) read’) in Present-Day German does not typically refer to the ‘process of reading’, but rather to a kind of formal event or lecture. In older stages of German, however, ung-nominalizations were productively used to refer to processes (or events), and over the course of the centuries they gradually acquired new meanings through the semantic extension mechanisms of metaphor and metonymy (Hartmann 2014; cf. Panther & Thornburg 2001; Booij 2010: 78). These new meanings comprise resulting states, but also objects (e.g. Heizung) and even agents involved in the situation expressed by the base verb (e.g. Bedienung) (Hartmann 2014). During the 18th century, the word-formation pattern’s productivity decreased as the more verb-like uses of ung-nominals started to decline (possibly through competition with German Nominalised Infinitives, see Hartmann (2014) and Iordachioaia & Werner (this volume)), resulting in increased denotational ‘nouniness’ of the ung-nominalization pattern. What is argued by Demske (2002: 88), then, is that “no such nominalization process is attested with ing-nouns in the history of English”.

Yet, it has been pointed out that if a clear distinction is made between verbal gerunds, which have clausal internal syntax (e.g. My family was against me having a baby), and other ing-nominals with nominal internal syntax, it is possible to detect a semantic shift in the latter group (Fonteyn & Hartmann 2016). Figure 1 illustrates this with data taken from Fonteyn & Hartmann (2016): when we map out the relative frequency of ing-nominals referring to events (e.g. the sending of the Money [1571, PPCEME]) versus ing-nominals referring to non-eventive concepts such as bounded regions in space (locations) or time (festivities, etc.) (e.g. I came to a lodging in the Lard of Eggels Land [1630, PPCEME]; at this wedding was as plentifull as Beere or Ale [1597, PPCEME]), concrete objects (e.g. Noah remoued the couering of the Arke [1611, PPCEME]; your clothing is not so warme [1597, PPCEME]), it appears that ing-nominals increasingly associate with non-eventive meanings.
The bar plot labels show the normalised frequency of eventive and non-eventive -ing-nominals over 10,000 words.

Importantly, the observed increase in frequency of non-eventive -ing-forms might not simply be due to a few lexicalised forms that are high in token frequency (as suggested by Iordachioaia & Werner (this volume)): Fonteyn & Hartmann (2016) also point out that the potential productivity of non-eventive -ing (i.e. the number of hapax legomena divided by the total number of tokens instantiating the construction in question; Baayen 1992) increases throughout the Modern English period. This all suggests that it is perhaps an overstatement to claim that English -ing-nominals are prevented from undergoing a similar shift from verby ‘processual’ semantics to resulting states, objects, and so on.

The results presented by Fonteyn & Hartmann, however, only make a distinction between ‘eventive’ and ‘non-eventive’ semantics. In other words, they argue that for all nominal -ing-forms, the [V-ing] pattern diachronically becomes increasingly associated with object-like semantics, but within the group of ‘eventive’ -ing-forms, no distinction is made between atelic or ‘processual’ readings, where the nominalized construction construes the event as the process of V-ing, and telic or ‘result state’ readings, where the nominalized construction includes reference to the resulting state of V-ing. In what follows, then, I will further address the issues raised here by presenting a corpus-based study of eventive -ing-nominals (or nominal gerunds).

3.2 Aspectual features of eventive -ing-nominals (nominal gerunds) in Modern English

As Iordachioaia & Werner (this volume) already indicate by stating that they data they use is “selected from previous studies that document nominalizations at different language stages”, they are not the first to address the thorny issue of aspectual-semantic properties of different nominalization strategies. For English nominal gerunds alone, a range of opposing claims has been made over the past decades. The point on which there seems to be most agreement is that, in Middle English, nominal gerunds exhibited no aspectual restrictions, expressing activities as well as achievements, accomplishments, and even states (Zbierska-Sawala 1993; Iordachioaia & Werner this volume):
When it comes to developments that subsequently affected the aspectual-semantic profile of nominal gerunds, opinions start to diverge. First, Iordachioaia & Werner claim that some aspectual constraints were gradually imposed on the nominal gerund. These restrictions, it is argued, are most obvious when we compare the aspectual versatility of Old and Middle English nominal gerunds to the ones illustrated in studies on present-day nominal gerunds, of which it is said that they do not allow non-action predicates (e.g. *the/Kim’s having of a bad feeling, *the/my being of a housewife; Marchand 1969: 302; Lees 1968: 64-65; Fraser 1970; Borer 2013) and are claimed to be incompatible with telic bases (Alexiadou, Iordachaia & Schäfer 2011; Borer 2005). Other studies, however, suggest that nominal gerunds do not necessarily exhibit such aspectual limitations to ‘actions’ in Present-day English (see, for instance, Bauer, Lieber & Plag (2013: 207-208) as well as Heyvaert, Maekelberghe & Buyle (this volume)).

In the remainder of this section, I will present a corpus analysis of Modern English nominal gerunds in order to get a clearer view of the historical development of their aspectual-semantic profile. The analysis presented here was based on corpus data from the Early and Late Modern period. A random sample of nominal gerunds was extracted from the Penn Parsed Corpus of Early Modern English (PPCEME) and the Penn Parsed Corpus of Modern British English (PPCMBE), comprising 296 nominal gerunds occurring between 1570 and 1710, and 277 occurring between 1780 and 1914. The aspectual classification adopted here is based on Croft (2012), who develops a two-dimensional t/q model, which results in a classification of aspectual construals and distinctions that largely corresponds to the original four-way classification of aspectual types proposed by Vendler (1967). Following Smith (1991), Depraetere (1995) and Declerck (2006), an additional category of so-called semelfactives (or ‘cyclic achievements’ in Croft’s terminology) has been distinguished, yielding five distinct aspectual categories.

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Table 1 - Properties of the five aspectual categories

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For a more elaborate discussion and overview, I refer to Croft (2012) as well as Fonteyn (2016: Ch. 6).
The distinction that is of interest to the present study is that of telic and atelic situations. Telic situations, i.e. accomplishments and achievements, are profiled in such a way that their endpoint and resulting state (or ‘telos’) are included in the situation. For instance, the Writing of the former part of this Essay implies an endpoint, i.e. when the said part of the essay is finished (cf. Section 2). The difference between (5a-b) and (5c) is that, while the writing of (...) this essay implies a durative effort before the endpoint was reached (accomplishment), the breaking of his trainer’s imposed fast in liquids and winning of a castle expresses a more instantaneous reaching of a result state (achievement):

(5) a. (...) all because of his fatal addiction to the breaking of his trainer's imposed fast in liquids on the night before the battle. (1895, PPCMBE)

b. Some newes of landing of certayne Spanyardes in Irland and of winning of a castle when they shold have taken M=r=Denny a prisoner. (1587-1589, PPCEME)

c. (...) and since the Writing of the former part of this Essay, (...), observ’d. (...) that the Colour of their Hair and Skin was far less Whitish than the Danes (...) (1593, PPCEME)

Accomplishments and Achievements are also different from activities, which are not construed with any sort of ‘natural’ endpoint and resulting state. Conceptually, this means that states, such as not having in (6), and activities, such as preaching in (7), can in principle continue infinitely, while the nominal gerunds in (5) naturally finish once their endpoint is reached.

(6) (...) they shall find that the not having of a peace lies on his side (1666-7, PPCEME)

(7) (...) such as shall with Herod heare the preaching of John Baptist to day, and to morrow condescende to haue him beheaded (1614, PPCEME)

Activities can also be made up of an iterative series of actions (multiple leaps, multiple trembles), as in example (8) (cf. Section 2):

(8) a. (...) my Limbs were made for leaping of Ditches (1707, PPCEME)

b. Emotional causes, such as rage or fear, will cause trembling of the muscles. (1876, PPCMBE)

Another way of looking at the distinction between (telic) accomplishments and (atelic) activities is that atelic events are cumulative: every subpart of preaching or leaping ditches is an event of preaching or leaping ditches in itself. This is said to underlie the fact that the progressive use of atelic situations, e.g. John was preaching, entails that John preached (Smith 1991: 32). This is not true for telic situations like write the essay, as we cannot conclude from he was writing the essay that he wrote the essay occurred successfully.

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In some models, achievements and semelfactives are distinguished not through telicity, but in terms of ‘transitionality’. In these models, a distinction is made between the telos or ‘natural endpoint’ of the situation, and whether or not the situation transitions into a result state. In that case, semelfactives would be non-transitional, and achievements would be transitional (see Heyvaert, Buyle, Maekelbergh (this volume)). Following the target article, I take telicity to be the combination of a natural endpoint and resulting state here.
Finally, some authors argue that achievements, which are punctual and telic, should also be distinguished from situations that are punctual and atelic, called semelfactives. While achievements mark the instantaneous transition to a result state (as for instance closing > being closed in example (9a), and wounding > being wounded (9b)), semelfactives are considered to be "single-stage events with no result or outcome" (Smith 1991: 29). This is the case for hitting in example (9c), which merely refers to a single instantaneous moment in time that can, in principle, immediately be repeated without any reversal of the result state.

(9) a. These marshes are at last terminated by the sudden closing of the valley at St. Maurice (1835, PPCMBE)

b. (...) then some of our Co–pany told them of al the intended treacheries with the losse of two of our men, and wounding of the third (1612, PPCEME)

c. Now there are five organs or instruments of speech, in the right hitting of which, as the breath moveth from within, through the mouth, a true pronunciation of every letter is mad. (1660, PPCEME)

The results of the aspectual-semantic analysis of nominal gerunds in Late Modern English are presented in Figure 2.

![Figure 2 - Relative frequency of telic and atelic aspectual types in Early Modern English (EmodE; 1570-1710) and Late Modern English (LmodE; 1780-1920).]

The lion’s share of nominal gerunds in Early Modern English are activities (49.7%), i.e. a dynamic, durative and atelic event/process. The second largest group of nominal gerunds, however, is that of accomplishments (21.3%), followed by achievements (16.6%), which are both telic. The smallest groups are semelfactive and stative nominal gerunds, constituting only 2% and 5.7% of all cases respectively. In Late Modern English, activities represent 54.5% of all cases, accomplishments and achievements adding up to 12.3% and 23.5% respectively. Again, semelfactive and stative nominal gerunds remain the smallest group

\[ \text{Note that Croft (2012) considers semelfactives as a subtype of the category of achievements called \textit{`cyclic achievements'}. This is because Croft considers all aspectual types that lack temporal duration are naturally telic. As will be pointed out below, the total number of semelfactive nominal gerunds is quite small (cf. Figure 2), and thus the decision to category semelfactives as telic or atelic does not significantly impact the results.} \]
(2.2% and 4.3%). In sum, then, as much as 37.8% of all nominal gerunds in Early Modern English and 35.7% in Late Modern English are telic. It appears, then, is that the distribution of aspect types in both periods is strikingly similar (apparent decrease of telic situations is small ($\phi = 0.053$) and not significant ($p = 0.24$))\(^7\), and it cannot be confirmed that nominal gerunds gradually specialize to the functional domain of atelicity in the Modern English period.

### 3.3 Competition with Romance derived nominals in -age, -al, -ance, -ion, and -ment

At first sight, the aspectual-semantic analysis of nominal gerunds in Modern English presented in Section 3.2 does not seem to confirm the hypothesis of Iordachioaia & Werner, who suggest that nominal gerunds gradually developed a preference for expressing atelic situations due to competition with Romance suffixes in the Modern English period. The concept of ‘competition’ should be understood as “the struggle among alternative forms during the retrieval process” (Berg 2014: 344). As in theory the language user can only opt for one way of nominalizing a verb at one given point in time, competition implies that in retrieval there is always a winning nominalization strategy (the one that is uttered) and one or more losing strategies (the ones that are not uttered). If it then happens that language users over time start to opt for one possible variant recurrently and consistently in a particular context, competition can lead to linguistic change. Thus, by arguing that competition with Romance suffixes led English -ing to specialize to processual meanings, Iordachioaia & Werner suggest that something along the following lines occurred: first, an innovative set of Romance suffixes became available alongside the ing-suffix to speakers of English at a given point in time. Then, as time passed, language users increasingly selected those new Romance forms over the alternative nominal gerund to express or nominalize telic events, eventually leaving ing-nominals to be selected only when an atelic event was to be expressed (or in other words, leading ing-nominals to ‘specialise’ to process-oriented readings). In the present section, I will suggest that the lack of observable specialization toward atelicity (or process-orientation) in the nominal gerund can possibly be attributed to the fact that (i) the area of competition between Romance derived nominals and nominal gerunds (i.e. the verb types that can be nominalised by two or more suffixes) is rather limited, and (ii) even within areas of competition we do not witness a rise of a clear semantic distinction between ing-nominals and their derived nominal counterparts.

As the main interest of the final part of this analysis are evventive nominalizations, only nominalizations of which the subject or direct object participant is expressed (in an of-phrase, e.g. the barking of the dogs, the destruction of the city) were considered. The corpus was automatically searched for words ending in -age, -al, -ance, -ion, -ing and -ment (followed by of). Subsequently all hits were manually checked for event reference, excluding forms that are not based on a $[V + \text{suffix}]_N \leftrightarrow \text{event or action of V}$ word formation schema (such as stage, moral, elegance, station, evening, and basement). The total token frequencies of each of the different nominalization patterns are listed in Table 2 (normalised frequency over 100,000 words between brackets).

---

\(^7\) If semelfactive nominal gerunds are considered to be telic due to their lack of temporal duration (cf. Croft 2012), 39.8% of all nominal gerunds in Early Modern English and 38.9% of all nominal gerunds in late Modern English would be telic. In that case, the effect size of the apparent decrease is even smaller ($\phi = 0.027$), and also not significant ($p = 0.58$).
<table>
<thead>
<tr>
<th></th>
<th>1500-1569</th>
<th>1570-1639</th>
<th>1640-1709</th>
<th>1710-1779</th>
<th>1780-1849</th>
<th>1850-1920</th>
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<tr>
<td></td>
<td>e1</td>
<td>e2</td>
<td>e3</td>
<td>t1</td>
<td>t2</td>
<td>t3</td>
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<tr>
<td><strong>-age</strong></td>
<td>23 (4)</td>
<td>32 (5)</td>
<td>41 (7)</td>
<td>21 (7)</td>
<td>41 (11)</td>
<td>21 (7)</td>
</tr>
<tr>
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<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td><strong>-al</strong></td>
<td>9 (2)</td>
<td>13 (2)</td>
<td>22 (4)</td>
<td>32 (11)</td>
<td>34 (9)</td>
<td>31 (11)</td>
</tr>
<tr>
<td><strong>types</strong></td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>11</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td><strong>-ance</strong></td>
<td>36 (6)</td>
<td>106 (16)</td>
<td>118 (21)</td>
<td>104 (35)</td>
<td>91 (25)</td>
<td>70 (25)</td>
</tr>
<tr>
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<td>32</td>
<td>27</td>
<td>27</td>
<td>33</td>
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<tr>
<td><strong>-ion</strong></td>
<td>392 (68)</td>
<td>598 (92)</td>
<td>636 (113)</td>
<td>525 (176)</td>
<td>645 (175)</td>
<td>523 (186)</td>
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<td>218</td>
<td>178</td>
<td>233</td>
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<tr>
<td><strong>-ing</strong></td>
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<td>774 (119)</td>
<td>400 (71)</td>
<td>175 (59)</td>
<td>178 (48)</td>
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<td>213</td>
<td>92</td>
<td>75</td>
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</tr>
<tr>
<td><strong>-ment</strong></td>
<td>122 (21)</td>
<td>137 (21)</td>
<td>144 (26)</td>
<td>117 (39)</td>
<td>124 (34)</td>
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<td>40</td>
<td>47</td>
<td>40</td>
<td>38</td>
<td>40</td>
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<tr>
<td><strong>total</strong></td>
<td>1260 (222)</td>
<td>1660 (264)</td>
<td>1361 (251)</td>
<td>974 (326)</td>
<td>1114 (302)</td>
<td>960 (341)</td>
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<tr>
<td><strong>types</strong></td>
<td>486</td>
<td>555</td>
<td>486</td>
<td>341</td>
<td>388</td>
<td>409</td>
</tr>
</tbody>
</table>

*Table 2 – Absolute token frequency and type frequency of the different nominalization strategies in Early Modern English. The Normalized frequency of each suffix over 100,000 words is added between brackets.*

The token frequencies listed in Table 2 are visualised in Figure 3. Overall, in terms of token frequency (as well as type frequency), the main strategies in the PPCEME appear to be -ing and -ion, followed by -ment and -ance, while -al and -age are fairly infrequent at the period under investigation. The figures also suggest that word formation products with Romance suffixes become increasingly popular as the Modern English period progresses while nominal gerunds decrease in token frequency, but only the former tendency seems to be significant (Romance: $\tau = 0.87$, $p = 0.02$; Nominal Gerund: $\tau = -0.6$, $p = 0.14$).
In terms of the number of different verb lexemes attested as nominalizations for each period, type frequencies fluctuate between 341 and 555 unique verbs, without any clear upward or downward trend being detectable. Interestingly, despite the substantial type frequencies attested in the corpus for each of the construction under investigation, only a very small share of them (2%-10%) occurs in two or more of the nominalization patterns investigated here. The proportions are illustrated in Figure 4:

**Figure 3 – Normalised token frequency over 100,000 words for each suffix per period.**

**Figure 4 – Number of different verb types occurring as either nominal gerunds, or derived nominals in -ion, -ment, -al, -age, or -ance (unique) in the PPCEME and PPCMBE. The verb types in the group ‘overlap’ occurred in at least two of the listed nominalization patterns, while the ones marked ‘unique’ only occurred in one.**
Being confronted with these figures, a few observations can be made. First, it should be noted that the Penn corpus only represents a (smallish) sample of the Modern English language, and many of the verb lexemes could potentially be nominalized by means of more than one the suffixes under investigation (see, for instance, the various nominalizations of move in (10)).

(10)  
a. The pain he feels upon any motion of the limb, is intolerably severe. (1807, PPCMBE)

b. (...) in case the movement of his troops became necessary (1815, PPCMBE)

c. In these lay great multitude of infirm persons, of blind, lame, withered, looking for the moving of the water. (1796, PPCMBE)

Still, while the absence of alternative nominalization strategies in the Penn corpus does not mean that the formation of them was entirely impossible in Modern English, it does indicate that the alternatives were possibly not common enough to occur in the sample of Modern English that the PPCEME and PPCMBE offer.

The relative small degree of overlap attested in the sample, then, can be linked to Iordachioaia & Werner observation that the Romance suffixes most commonly combine with Latinate verbs, while nominal gerunds are formed more freely with native English verbs (e.g. Marchand 1969; Dalton-Puffer 1996). What is important here is the relatively large number of telic situations expressed by nominal gerunds attested in Section 3.2 is therefore not incompatible with this claim, and can possibly be explained to nominal gerunds formed with originally Common Germanic verbs like drown, kill or break off (11):

(11)  
a. Here dined with me also Mrs.  Batters, poor woman, now left a sad widow by the drowning of her husband the other day. (1666-7, PPCEME)

b. (...) both of them concluding, that the Trumpet & Vial was now powering out; and my L. S. Asaph attributing the Killing of the two Witnesses, to the utter destruction of the Cevenes Protestants (1688-1689, PPCEME)

c. Next, we may also as plainly see the reason of its shining quality and that is from the even breaking off of the stick. (1665, PPCME)

However, in the contexts where they do compete (i.e. where a nominalization can be formed with -ing or a Romance suffix), Iordachioaia & Werner suggest that Romance derived nominals were able to cause a specialization of English ing-nominals: using the classic example of the destroying/destruction alternation pair, they argue that “the derived nominal expresses the result reading, while -ing yields a process interpretation” (Iordachioaia & Werner this volume). To shed some more light on the exact workings of the competition between Romance derived nominals and nominal gerunds in Modern English, the final part of the analysis will make a more in-depth comparison of the alternating forms found in the PPCEME and PPCMBE by considering them in their full usage context.

A quick glance at the alternating pairs in Early Modern English immediately reveals that all nominalization patterns under investigation here pattern quite similarly and are often used in coordination, as evidenced by examples such as (12a-c):
(12)  a. For as saith Iacobs Ruffus that to the perfection and accomplishing of the foresaid Cure called, The Euill by the King, or Queene Cured he doth reduce it into sixe Intentions Chirurgicall, as followeth. (1602, PPCEME)

b. they pretended nothing against the alleageance nor fidelitie which they ought to the King, neyther to gather to any other ende an armie, but only for the sauing of their persons, and for the better gouernement of the common wealth (1580, PPCEME)

c. (...) and all such Exportation Transportation carrying or conveying of any the Goods Wares or Comodities in this Act mentioned is hereby declared and adjudged to be a common and publicke Nusance (1660, PPCEME)

In some texts, we even find that the linguistic contexts in which Romance derived nominals and nominal gerunds are used is nearly identical. This is the case in the examples in (13), which are reminiscent of mirrored examples we would find in a linguistic questionnaire.

(13)  a. (...) aiding abetting or assisting in ... Exportation of Wooll or any other of the Co~modities as (1690, PPCEME)

b. (...) aiding abetting or assisting in ... exporting of them or any of them (1690, PPCEME)

What is interesting about examples such as the ones in (13) is that they quite prominently confront us with the difficulty of claiming that the nominal gerund exporting of them has a process-focussed or atelic meaning, whereas the derived nominal Exportation expresses (or at least additionally allows) a result-focussed or telic reading. Similarly, given the absence of native speaker intuitions and acceptability judgements, it seems impossible to convincingly argue that the nominal gerund refusing in (14a) is more process-focussed than the derived nominal refusal in (14b):

(14)  a. (...) the Kingses Highnes wolde as they saide take displeasure inough towarde me for the only refusal of the oth. (1529, PPCEME)

b. (...) both that peryll and all other that myght put my bodie in peryll of death by the refusing of this othe. (1533-5, PPCEME)

Still, it is not impossible to investigate whether a nominalization in Modern English has process- or result-focussed semantics: the analyst can look for cues in the linguistic context that trigger one reading (or exclude another). For instance, the processual semantics of determination in (15a) are highlighted by the predicate extending, which implies that the determination of the fault is an (ongoing, unfinished) process. Similarly, in (15b), prosecution and advancement are construed as a process that has not yet reached completion, as it has been diverted and interrupted.

(15)  a. the Judges may use their Equitie, extending the determinacion of the fault as they thinke good: (1554, PPCEME)

b. (...) that diuerteth and interrupteth the prosecution and aduauncement of knowledge (1605, PPCEME)
The processual semantics of the nominalization can also be marked by means of adjectives, as for instance *continual* in (16):

(16)  The first is, that the *continual* mouing of the hard bone might not be done in a iuncture (1548, PPCEME)

Finally, it is equally possible for adjectives to highlight the resulting state of the process rather than the process itself. In (17), for instance, the adjective *perfect* modifies the state of completion of the nominal gerund, in which case a result state reading becomes more likely (also see adjective *even* in example (11c)):

(17)  And for the better Discoverie of the Offences aforesaide and the more *p~fecte* accomplisshing of the p~misses, it may be also enacted, That (…) (1590, PPCEME)

It is such contextual cues that I have taken to support a processual or a result state reading in the analysis presented here. If no such explicit contextual cues are present, the example has been annotated as ‘unmarked’. This would be the case for the examples in (18), as well as for the examples in (19) below. Due to the lack of contextual cues either emphasising a resulting state or highlighting processual meanings, we cannot with absolute certainty decide that *continuing* in (18a) or *electing* in (19a) refer to processes only, while *continuation* in (18b) and *election* in (19b) refer more to their resulting states:

(18)  a. a *continuing* of the war must undo us (1666-7, PPCEME)

    b. Lastly remembering my humble duty with a *continuation* of your good favor towards me I commit yow etc. (1587-9, PPCEME)

(19)  a. (…) to bee directed for the *electing* of the Knights Citizens Barons and Burgesses (1640, PPCEME)

    b. (…) shall forthwith without further Warrant or direction proceed to the *Election* of such Knight or Knights Citizen or Citizens Burgesse (1640, PPCEME)

Finally, if we wish to compare nominal gerunds with their equivalent Romance derived nominal counterparts, we need to be aware that some of the attestations are in fact ‘false pairs’. The nominal gerund in (20) is based on the base verb *compass*, which is a loan from French (*compasse-*r, cf. OED) meaning to plan, or to devise (OED, entry *compass*, v.1). The derived nominal *compassion* in (21), on the other hand, was borrowed from French in its entirety, and expresses an entirely different meaning, i.e. a feeling of sympathy.

(20)  (…) and this was judged Treason, and a *compassing* of the King's Death. (1571, PPCEME)

(21)  (…) but by such as themselves beemones & takes *compassion* of, as tho they wold bring the sick (1593, PPCEME)

Because of their different meanings, a pair such as *compassing-compassion* will not serve to illustrate whether nominal gerund and derived nominals impose different (i.e. process-focussed vs. result-focussed) construals. As such, these kinds of pairs have been excluded from the analysis.
The results of the semantic analysis of nominal gerunds and their derived nominal counterparts are visualised in Figure 5 and Figure 6 respectively. Given the relatively low number of observations analysed in the Late Modern period, we should be cautious of drawing strong conclusions based on these findings; but there are a few diachronic trends that I wish to draw attention to. What is perhaps most evident from the results in Figure 5 and 6 is that, with the exception of the first period under investigation, the majority of nominal gerunds (48%-74%) and Romance derived nominals (50%-78%) occurs in unmarked contexts, in which neither readings is entirely ruled out. In the first period (1500-1570), exclusively processual readings are the most frequent for ing-nominals (62%), whereas their derived nominal counterparts are predominantly result-oriented (50%), which would be in line with the hypothesis presented by Iordachioaia & Werner. However, the overall trend we observe does not seem to be one in which nominal gerunds gradually specialize to explicit processual readings. Instead, while the overall usage profile of -age, -al, -ance, -ion and -ment appears to remain fairly stable in the sample (the observed decrease of result and process readings being non-significant, \( \tau = -0.07 \) and \( p = 1 \) and \( \tau = -0.55, p = 0.126 \) respectively), there does appear to be a significant decrease of nominal gerunds (\( \tau = -0.87, p = 0.017 \)) with explicitly process-focused readings (and a strong, yet non-significant increase of nominal gerunds with result-oriented readings: \( \tau = 0.73, p = 0.056 \)).

In sum, then, the data seem to confirm Iordachioaia & Werner hypothesis that the language user has distinct preferences for which lexemes are nominals with nominal gerunds or Romance derived nominals. However, their suggestion that an aspectual-semantic distinction develops between nominal gerunds (expressing process meaning) and derived nominals (expressing result meaning) in the areas where they do overlap is not supported by the data, and there are no clear indications that the language user develops a preference for either strategies in the suggested aspectual niches.

![Figure 5](image-url)  
*Figure 5 – Relative frequency (%) of process-oriented, result-oriented, and unmarked readings in Modern English nominal gerunds*
Figure 6 – Relative frequency (%) of process-oriented, result-oriented, and unmarked readings in Modern English Romance derived nominals.

4. Conclusion

Bringing together the various corpus-based observations presented in this response, we can now map out the (aspectual-)semantic profile of English *ing*-nominals in Modern English (Figure 7).

Figure 7 – A conceptual-semantic network for *ing*-nominals (inspired by Hartmann 2014, Figure 4)
What is perhaps most striking is that the data indicate that it is not entirely true that English *ing*-nominals specialised to predominantly processual meanings. Rather, the semantics of *ing*-nominals appear to be intriguingly versatile: not only are they used with non-eventive meanings (Section 3.1; also Fonteyn & Hartmann 2016), they are also quite commonly used to express result-oriented (telic) as well as processual (atelic) situations (Section 3.2).

The versatility of *ing*-nominals of course varies between specific forms: a form such as *building* covers several eventive (telic and atelic) and non-eventive (object-like) meanings (e.g. *building houses*, *building a house*, *that old building*), while a form such as for instance *exercising* does not. In their discussion, Iordachioaia & Werner explain the fact that various *ing*-nominals are conceived as exclusively processual can be related to the fact that *ing*-forms started to compete with Romance derived nominals in -*age*, -*al*, -*ance*, -*ion*, and -*ment* in the course of the Modern English period. However, the data analysis in Section 3.3 indicated that there is only a relatively small amount of overlap between English *ing*-nominals and Romance derived nominals, suggesting that the actual area of competition between these two nominalization types might have been rather limited. Moreover, the analysis did not provide any clear support for the hypothesis that Romance derived nominals caused a specialization of *ing*-nominals to processual semantics. In sum, the diachronic trends revealed in the present response point not to specialisation but to an extension or retention of the conceptual network expressed by English *ing*-nominals: there is a growing proportion of non-eventive *ing*-nominals in Modern English, and within the eventive group the proportion of process-oriented (or atelic) and result oriented (or telic) nominal gerunds remains relatively stable over time. Overall, I think we require a larger dataset to make more definite claims on the subject, but I wish to make at least one suggestion of why it could be the case that English *ing*-nominals simultaneously seem to become more delineated and non-eventive (like German *ung*-nominals) while also retaining their ties to their processual uses (unlike German *ung*-nominals; cf. Iordachioaia & Werner, and also the contributions of Demske & Hartmann in this volume).

One important factor that has influenced the development of English *ing*-nominals that has been largely overlooked in the theoretical study of Iordachioaia & Werner is that Romance derived nominals are not the only functional competitor of English *ing*-nominals. In fact, *ing*-nominals also compete with zero-derived nominals (Fonteyn & Maekelberghe ms.) and – perhaps most importantly – with verbal gerunds (e.g. De Smet 2008, 2013). Competition between alternative forms can be weaker or stronger depending on the phonological and semantic similarity between a form and its competitor (Fay & Cutler 1977), and the frequency of the competitor (Vitevitch 1997). Given the high frequency of verbal gerunds in Present-day and Modern English (Maekelberghe 2017; De Smet 2013) and the formal identity of the *ing*-suffix, we cannot underestimate the effects of the competition with verbal gerunds on the intriguingly complex diachronic development of nominal gerunds (e.g. De Smet 2008; Fonteyn 2016). From the present response article, it should become clear that it is hardly possible to accurately capture such complex developments without digging into the data vertically – to gather varied and representative sample – but also horizontally – to consider the observed stability or change against the background of a wide range of phonologically and semantically related constructions.
References


Fonteyn, L. & C. Maekelbergh (ms.). *Competing motivations in the diachronic nominalization of English gerunds*.


