

The Semantic Factor for the Use of the Premodifying *-Ing* Form in English

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Abstract

There have been numerous previous studies presented on the semantics of adjectival premodifying *-ing* forms, and the traditional approaches among them give a similar view that premodifying *-ing* forms usually express some more permanent or characteristic property of the referent of the modified noun. In addition, recent noteworthy studies conducted by De Smet & Heyvaert (2011) and Vartiainen (2012) put forward semantic features of the target construction, “simultaneity and time-stability” and “atelicity”, respectively. However, our corpus investigation finds counterexamples of these views, and thus we need to make a more nuanced and reasonable generalisation of the semantics of *-ing* premodifiers. The aim of this paper is to provide a corpus-based full and valid explication of semantic and pragmatic mechanisms of the diversity of meanings expressed by the English premodifying *-ing* forms and shed light on the crucial semantic factor for the use of this modifying system. The present research will classify the situation types expressed originally by the lexical verbs in the form of the premodifying *-ing* into the five types, i.e. statives, activities, accomplishments, achievements, and semelfactives. And we will explore the decisive factor that enables its use through the examination of the context in which the target construction occurs.

1. Introduction

This paper aims to elucidate semantic and pragmatic mechanisms of the diversity of meanings expressed by the English premodifying *-ing* forms and shed light on the crucial semantic factor for the use of this modifying system (e.g. As a product liability attorney, Turchin also filed one of the first known lawsuits against Honda and Takata alleging a vehicle driver injured by *an exploding airbag*, which helped lead to the largest consumer recall in United States history. (NOW)).¹⁾ Linguists have conducted a number of descriptive and theoretical studies of the semantics of premodifying *-ing* forms (e.g. Akiyama (1998), De Smet and Heyvaert (2011), Huddleston and

¹⁾ Hereafter, italics in corpus sentences quoted from the NOW corpus are inserted to highlight relevant parts of the example.

Pullum (2002), Meltzer-Asscher (2010), Quirk et al. (1985), Vartiainen (2012)), but none of them, as far as I can determine, seems to provide a unified and valid explanation of meanings expressed by the premodifying *-ing* form. In what follows, of particular concern in this research is where the listener's viewpoint is placed in the interpretation of the meaning expressed by the premodifying *-ing* form, and how such a viewpoint is placed in relation to the context. The present study takes a corpus-based empirical approach. Our corpus investigation throughout this paper is conducted using the News on the Web corpus (henceforth referred to as the NOW corpus). This corpus is somewhat limited in terms of text genres, but the number of recorded words is remarkably large (consisting of approximately fifteen billion words) among existing corpora, and the NOW is judged to be optimal for this research approach based on actual examples.

The organisation of this paper is as follows. Section 2 gives a close examination of previous research on the premodifying participle. We will critically scrutinise the two significant analyses conducted by De Smet & Heyvaert (2011) and Vartiainen (2012) and point out the inadequacies of their arguments. Section 3 establishes our theoretical perspectives for the following studies. I will first of all give a clear specification of the target construction, because premodifying *-ing* forms are traditionally classified into the three categories of gerunds, participles and adjectives. Here, I will lay special emphasis on the importance of integrating and analysing these three grammatical categories for the unified explanation of the target construction. Furthermore, I will also mention atemporality of the premodifying *-ing* forms and the validity of the notion of cognitive salience put forward by Cognitive Grammar. Section 4 conducts a corpus-based approach to survey the semantics of the premodifying *-ing* forms. Here the verbs that are based upon the pre-modifying *-ing* form are classified into five types according to the situation types denoted by them. We will see empirically that the pre-modifier *-ing* forms can express many different meanings depending on the context. Section 5 concludes this paper with a brief summary.

2. Previous Analyses

There have been numerous previous studies presented on the semantics of prepositional adjectival *-ing* forms, and the traditional approaches among them give a similar view on the semantic properties of this grammatical usage. Ando (2005), Quirk et al. (1985), Swan (1980), and Yasui et al. (1975) hold a similar view that premodifying participles usually express some more “permanent or characteristic property” of the referent of the modified noun. This view can be exemplified by collocations like *a revolving door*, *a flying saucer*, *a wandering minstrel*, and *oil-producing countries*. The more the *-ing* premodifiers express permanent or characteristic features, the more highly likely

it is that their meanings specify the firm property of the referent of the noun. And in this case, the *-ing* form will be parsed as a lexical adjective rather than a gerund-participle. However, our corpus investigation easily finds counterexamples of this traditional view, such as *the approaching typhoon*, *the running man*, *the escaping oil*, *the responding policeman*, all of which signify temporary events concerning the referents rather than permanent or characteristic features.²⁾ Therefore, we need to make a more nuanced generalisation of the semantics of the *-ing* premodifiers. As a preliminary step of our analysis, we will examine two noteworthy previous analyses of premodifying *-ing* forms.

2.1. De Smet & Heyvaert (2011)

De Smet & Heyvaert (henceforth, D&H) (2011) give a comprehensive and detailed description of the semantic flexibility of English present participles in the adjectival usage on the basis of a large number of examples. Their analysis basically assumes that “the meaning of participles can be best understood against the background of the syntactic slot they fill” (D&H 2011: 475). Their thorough analyses of present participles fall into the four-type usages of present participles; (a) premodification, (b) postmodification, (c) supplementive, and (d) complement of perception verbs.³⁾ Among these, analysis of the semantics of premodifying participles is conducted through in-depth empirical linguistic data observations. Along with the discussion by Givón (1984) and Croft (2001), they argue that premodifying *-ing* participles are “simultaneous and time-stable in the sense that the participle denotes a state that can perpetuate without change for some time and that holds at some contextually implied temporal reference point” (D&H 2011: 483).⁴⁾ Here, the notion simultaneity is applied to the relationship between the time the predicate verb of the sentence refers to and the time the participle signifies. Time-stability designates an unchanging situation over some period. For instance, a sentence like “*survivors were pulled from the sinking vessel* is a prototypical example as the sinking in this example must be ongoing at the time of the rescue and stable for some time” (D&H 2011: 483). And the situation where *survivors were pulled* and the other situation of *the sinking vessel* co-occur simultaneously.

Furthermore, D&H (2011: 484) claim that “the past noteworthy events” can also be another property for the use of premodifying *-ing* participles. They exemplify the mechanism by which this usage can be triggered with the participle *disappearing* in the following example.

²⁾ The traditional approaches do not specify clearly what the permanent or characteristic features are, however.

³⁾ As an example of the supplementive usage of present participles, D&H (2011: 490) provide an example: ‘He’s only doing his best to please us,’ I said, *biting into a slice of toast and honey*.

⁴⁾ Akiyama (1998) and Meltzer-Asscher (2007) put forward a notion of “duration” or “stativity” , respectively, to describe the crucial factor for the use of the premodifying adjectival *-ing* form. Their ideas are similar to De Smet & Heyvaerts’ time-stability.

- (1) The *disappearing* mayor of the French Riviera resort of Nice, Honore Bailet, 73, made his first public appearance in five weeks yesterday by turning out to vote in the first round of France's parliamentary elections, AFP reports from Nice. (De Smet & Heyvaert 2011: 484)

Disappearing in (1) achieves no time-stability but “evokes a single specific bounded event whose actualization is seen as completed” (D&H 2011: 484). D&H argues that *disappearing* in (1) can be acceptable because “the process denoted by the participle is somehow noteworthy enough to remain discursively prominent, allowing the participial process to be interpreted as permanently accessible common knowledge” (D&H 2011: 484-5). D&H go so far as to say that this noteworthy event violates the simultaneity and time-stability principle, but can be explained as a semantic extension from progressives with the notion of sloppy simultaneity. Sloppy simultaneity was originally introduced by Declerck (1991: 132-4).⁵⁾ The noteworthy event construal “goes one step further in that the laxness of event boundaries is exploited to the point that no pretence of simultaneity is maintained and an event is presented as so impactful that it reverberates even after termination” (D&H 2011: 485). To summarise, D&H's analyses of the usage of premodifying *-ing* participles are boiled down to simultaneity and time stability. The present study agrees with the importance of time-stability, but argues that noteworthy events, which are excluded from the stability, should not always be linked to (sloppy) simultaneity. Rather, we aim to clarify the mechanism by which cognitive salience, a notion put forward by Langacker (1996), is a crucial factor to use premodifying *-ing* participles. Our clarification of this argument will be endorsed using the linguistic data extracted from the NOW corpus. We will treat this problem further in section 3 and 4.

2.2. Vartiainen (2012)

Vartiainen (2012) gives a fine-grained empirical semantic analysis of the premodifying *-ing* participle in English on the basis of the British National Corpus. He puts forward a hypothesis that “the use of verbal participles is best explained by semantic underdeterminacy with a strong preference to interpret the participles' meaning as atelic descriptions” (Vartiainen 2012: 217). Here the telic situation is described as having the end-point of the situation, and the atelic situation not. He adopts the following four lexical situation types: (a) states (e.g. *know somebody*), (b) activities (e.g.

⁵⁾ Sloppy simultaneity refers to the relationship of the two situations expressed by the main clause and the subordinate clause which do not overlap but follow each other. In an example “(Be careful about what you tell her.) She will report everything you say to the police., the tense used in the subordinate clause is each time the tense that is typically used to express simultaneity, not anteriority” (Declerck 1991: 132). Compare this example with (Be careful about what you tell her.) She will report everything you have said to the police.

push a cart), (c) accomplishments (e.g. *paint a picture*), and (d) achievements (e.g. *find a book*). These classes were originally introduced by Vendler (1957). Vartiainen also applies Rothstein's (2004: 12) two binary temporal features [\pm stage] and [\pm telic] to these four lexical aspectualities so as to categorise them into two types. Vartiainen insists that "activities and accomplishments are [+stage] whereas states and achievements are [-stage]" (Vartiainen 2012: 224). Activities and accomplishments are analysed as having a feature [+stage]. This is because "in the event of *playing the piano* (activity) or *building a house* (accomplishment), there are clearly identifiable stages in the described events" (Vartiainen 2012: 225). On the other hand, states are [-stage] because they describe "eventualities that do not have distinguishable parts", and achievements are also [-stage] because "they are perceived to happen instantaneously (i.e. they are punctual)" (Vartiainen 2012: 225). Moreover, with regard to the [\pm telic] feature, states and activities are recognised as having the [-telic] feature, and accomplishments and achievements [+telic]. This means that the descriptions *know somebody* (state) and *push a cart* (activity) do not express a set end point, whereas *paint a picture* (accomplishment) and *find a book* (achievement) do.

Vartiainen's analysis utilises these binary temporal features [\pm stage] and [\pm telic] in the semantics of premodifying participles. He exemplifies the [-telic] (i.e. atelic) feature expressed by *-ing* participles with the phrase *the running man* (activity; atelic) and *house-building firms* (accomplishment; atelic). The meanings of these two phrases do not include a particular terminal point of activities but signify ongoing or continuous activities. Here the inference of *house-building firms* is "*the firms build houses* (possibly including being built at the moment), not that *the firms have built a house*" (Vartiainen 2012: 226). Moreover, he points out the invalidity of the phrase ?*the mile-running man* (accomplishment; telic) and ?*a/the home-running man* (accomplishment; telic), in which either *mile-* or *home-* restricts the length of the running distance, and in other words signifies the terminal point of running. And this telic interpretation leads to the invalidity of these phrases. As for the state aspectuality, this is "atelic by default" (Vartiainen 2012: 226) and thus is left out of consideration.

The main problem of Vartiainen's analysis seems to lie in the treatment of achievement verbs. He took up three kinds of aspectual interpretations of the phrase *the winning team*, i.e. (a) completed (past) action, (b) future action, and (c) an extended (repetitive) achievement, all of which do not allow telic construals. On the basis of this data, his analysis tries to verify that "premodifying *-ing* participles do not describe the punctual change-of state that is inherent in achievements, but they rather focus on the end-state of the achievement or express extended actions (e.g. don't change a winning team)" (Vartiainen 2012: 230). However, my corpus findings falsify the validity of this hypothesis, as in:

- (2) a. The car company confirmed yet another death linked to *an exploding airbag* earlier this week, taking the total number of fatalities in America alone to 12 in addition to several others worldwide. (NOW)
- b. And *a popping balloon* may sound like *a firing gun*. (NOW)
- c. Memphis Depay celebrates scoring *his team's winning goal* in the final minute of a game. (NOW)

All the *-ing* modifiers in (2a-c) refer to a punctual time at which a particular event just happens. *An exploding airbag* in (2a), for example, expresses the instantaneous event at which an airbag of a car accidentally exploded, which gave rise to a customer's death. *Popping* and *firing* in (2b) and *winning* in (2c) also designate a momentary event while the grammatical form is *-ing* participle. Those empirical data show the construal flexibility of the *-ing* modification of nouns. And Vartiainen's analysis of *-ing* participles of achievement verbs only deals with one present participle, *winning*, so his data sets seem too small to bear out his empirical claims.

3. Theoretical Perspectives

3.1. Specifying the Target Construction

Before embarking on our analysis of the semantic mechanism by which premodifying *-ing* forms are used, we need to establish our theoretical perspectives for the following studies. We will first of all need to give a clear specification of the target construction. The traditional grammar of the English language distributes the *-ing* forms into at least three categories, i.e. the gerund, the present participle, and the lexical adjective. Huddleston and Pullum (2002: 82), however, abandon a distinction between the gerund and present participle, because “[h]istorically the gerund and present participle of traditional grammar have different sources, but in Modern English the forms are identical”. They then set up “principles for deciding how much two or more forms of lexeme are identical” (Huddleston and Pullum 2002: 76) on the basis of inflexional distinctions, and conclude by “reject[ing] an analysis that has gerund and present participle as different forms syncretised throughout the class of verbs” (Huddleston and Pullum 2002: 82). Their view is very convincing regarding the semantic explication of the premodifying *-ing* forms and thus the present study adopts their approach and does not differentiate between the gerund and the present participle for further study.

Moreover, dictionaries' descriptions of the *-ing* forms sometimes show fluctuations in the part-

of-speech classification of *-ing* forms. For instance, the *-ing* form *winning* of a highly frequent collocation *a winning streak* is classified as lexical adjective in *Oxford Dictionary of English* (henceforth, *ODE*), but as present-participle in *Longman Dictionary of Contemporary English* (*LDOCE*). The *ODE* defines the adjective *winning* as “gaining, resulting in, or relating to victory in a contest or competition”. This definition designates the word *winning* as an adjective, but admits at least three situation types, i.e. the process leading up to the moment of winning, the moment of victory, and the event or states which bring about victory. So, it will be reasonable to state that even if a premodifying *-ing* form can be parsed as a lexical adjective, the word necessarily refers to a particular situation type according to the context in which they are used. One of the main purposes of this study is to scrutinise the semantic and pragmatic mechanism of the interpretive focus on the situation described by premodifying *-ing* forms. As for the word *winning*, this paper thus does not divide the *-ing* form into present participles and adjectives, but integrates them as the premodifying *-ing* form. To summarise, there is no clear and coherent syntactic or semantic criteria distinguishing the gerund, the present participle, and the lexical adjective in the premodifying usage of nouns. Therefore, the present paper decides to synchronise these three grammatical categories in the form of *-ing* into adjectival premodifying *-ing* forms as long as the *-ing* form expresses the situation the original verb essentially describes.

It will be crucial to point out here that this integrational treatment of the grammatical categories of the gerund, the present participle, lexical adjective in the form of *-ing* never means that they are regarded as having the same function. Our unified approach to adjectival premodifying *-ing* forms is adopted not only because these three traditional categories cannot be clearly distinguished with some principles, but also because this study aims to implement a comprehensive and in-depth analysis of the semantics of the target modifying system in English.⁶⁾

3.2. Noun Modifiers and Atemporality

As mentioned in section two, linguists have pointed out that one of the essential tendencies in English for premodifying *-ing* is that premodifiers specify a permanent or characteristic property. This strong tendency will be induced simply by the basic function of adjectives; “it is likewise prototypical ... for adjectives to specify properties (*blue, tall, intelligent*)” (Langacker 2008: 95). The specification of properties concerning the referent of the modified noun is the adjective’s main function. Langacker (2008) and De Smet and Heyvaert (2011) make a strong argument that “the formation of the present participle has the effect of atemporalizing the process designated by the

⁶⁾ With respect to the adjectivization of the participle constructions, see Vartiainen (2016).

verb it derives from” (Langacker 2008: 122). In other words, since the present participle has the atemporalizing effect, the interpretation of the situation denoted by the participle *through time* is backgrounded or not in focus. Langacker (2008: 123) affirms that “the kinds of elements able to modify nouns are just those described as profiling nonprocessual relationships”.⁷⁾ Furthermore, Evans and Green (2006: 568) argue that “[t]he fact that participles are not non-finite means that they can only occur without an auxiliary verb in subordinate clauses, where they often perform a modifying function”. Present participles are always atemporal unless they are combined with tensed predicative verbs (e.g. *is, have*). The present research also takes the same view as Cognitive Grammar, and assumes that premodifying *-ing* forms including present participles represent atemporality.

However, our research strongly places emphasis on the argument that the meaning of the premodifying *-ing* form is subject to the context in which they occur even if it has the atemporalizing effect. As De Smet & Heyvaert (2011: 486) correctly point out, the premodifying *winning* expresses a wide variety of meanings. They highlight three types of examples in which the premodifying *winning* receives different interpretations: “noteworthy event/sloppy simultaneity in (3a), progressive in (3b), habitual/progressive in (3c)” (De Smet & Heyvaert 2011: 486), as in:

- (3) a. The *winning* team received a bronze copy of the tournament mascot.
 b. The *winning* team is leading by five points.
 c. Never change a *winning* team. (De Smet & Heyvaert 2011: 486)

These linguistic facts lead us to expect that the premodifying *-ing* forms can designate many types of situations according to their usage. At first glance, this flexibility of meaning denoted by *-ing* forms may seem to have a high degree of freedom in their usage, but it is also true that there are restrictions on how it can be used.

In section 4, we will classify situation types denoted by the *-ing* premodifier into five groups and scrutinise the semantic and pragmatic mechanism by which the interpretive focus on the situation denoted by the premodifying *-ing* form is put in accordance with the contextual information.

⁷⁾ Here Cognitive Grammar’s term *profile* is “[t]he entity or relation designated by a word. The profile functions by highlighting a substructure within a larger unit known as the base. Take the example *hypotenuse*. This word profiles the longest side in a right-angled triangle, while the base is the entire triangle, including all three of its sides. Without the base, the profile would be meaningless: there is no hypotenuse without a right-angled triangle. Hence the word *hypotenuse* designates a particular substructure within a larger conceptual structure” (Evans 2007: 171).

3.3. The Notion of Saliency

The present study emphasises the validity of the notion of “saliency” as a key factor for the use of premodifying *-ing* forms. This concept seems to have been first introduced by Langacker (1991) when describing the reference point in human cognition, as in:

“The world is conceived as being populated by countless objects of diverse character. These objects vary greatly in their saliency to a given observer; like stars in a nighttime sky, some are immediately apparent to the viewer, whereas others become apparent only if special effort is devoted to seeking them out. Salient objects serve as reference points for this purpose: if the viewer knows that a non-salient object lies near a salient one, he can find it by directing his attention to the latter and searching in its vicinity.” (Langacker 1991: 170)

Of importance here is that the thing that is perceived as salient tends to attract attention and to be utilised when we try to interpret the things or situations in detail. Langacker (1999: 200) argues that “[v]arious kinds of factors can make an entity sufficiently salient to serve as a metonymic reference point”. And he also argues that “[u]nless overridden by other considerations, certain principles of cognitive saliency generally hold, among them human > non-human, whole > part, concrete > abstract, and visible > non-visible” (Langacker 1999: 200).⁸⁾ This principle will be used in our explanation of the semantic or pragmatic mechanism for the use of premodifying *-ing* forms.

Premodifying *-ing* forms function as adjectives which specify the property of the referent of nouns. So the concept symbolised directly by the *-ing* premodifier needs to be salient enough to characterise the feature of the referent of the noun. Otherwise the *-ing* form would not function as a modifier. Here we will compare the difference of the validity among the following expressions.

- (4) a. a thinking person
b. ? a supposing person
c. It turns out that we humans just aren’t used to a stranger engaging us in conversation, suddenly emerging as *a speaking, thinking person* rather than just another body squeezed into a train carriage. (NOW)
d. I think he’s emerged from this as *a more intelligent and thinking person* than many had perhaps assumed. (NOW)

⁸⁾ However, Langacker (2008: 66) admits that “[t]he terms prominence and saliency (used here interchangeably) are not self-explanatory. Because something can be salient in many different ways, describing it as such is not an adequate characterization but only a starting point for analysis.”

Our corpus survey using the NOW corpus tells us that the collocation *thinking person* gets 1,445 hits, but the expression *supposing person* receives no examples in the corpus. And the phrase *a supposing person* is unlikely to sound natural in English. The premodifying *-ing* form of *thinking* in a *thinking person* can sometimes designate a person who thinks or is thinking in a particular context. In the sentence (4c), *a speaking, thinking person* is described in comparison with *just another body squeezed into a train carriage*. With this comparison, *thinking* can be interpreted as being salient enough to specify the feature of the referent of the noun *person* in the particular context. And the mental activity of “thinking” tends to be objectively observable and visible from other people. In this respect, the premodifier *thinking* adheres to the principle of cognitive salience. Moreover, as (4d) illustrates, the *-ing* form *thinking* extends meaning metonymically from the meaning of *thinking* in (4c). In *a more intelligent and thinking person* in (4d), the *-ing* form *thinking* explains “intelligent and able to think seriously” (*OALD*). With this metonymic meaning extension, the *-ing* form *thinking* in (4d) is more likely to be salient enough to characterise the person in question. And the invalidity of *a supposing person* is also concerned with the notion of salience. We will examine the reason why this expression is unacceptable in detail in the following section.

4. A Corpus-based Analysis

Now that we have presented the necessary theoretical perspective, let us proceed to shed light on the interpretive focus on the situation expressed by premodifying *-ing* forms in English. Our approach also aims to provide vital empirical evidence using examples extracted from the NOW corpus. And the present research classifies the situation types expressed originally by the lexical verbs which can take the form of the premodifying *-ing* into the five types, i.e. statives, activities, accomplishments, achievements, and semelfactives, along with the argument made by Smith (1995: 37-64).

4.1. Statives

The stative situation can be defined as “static, unchanging eventualities, which do not result in the creation, change of state or change of location of any of their participants” (Meltzer-Asscher 2007: 180). Stative verbs include “concrete and abstract properties of all kinds, possession, location, belief and other mental states, dispositions, habits, etc” (Smith 1995: 38). The examples of stative verbs are to “*believe, belong, contain, consist, fear, hope, intend, know, like, love, matter, own, remain,*

remember, suppose, think, understand, want, wish, and wonder,” most of which consist of transitive verbs (see Dixon 1991: 307-9; Huddleston and Pullum 2002: 168ff). I conducted a corpus-based analysis of premodifying *-ing* forms which derive from stative verbs. For the purpose of extracting examples of “article + *-ing* form + noun” (e.g. *the remaining members*) and “article + any word + - (hyphen) + *-ing* form + noun” (e.g. *the time-remaining estimate*), I used a tag sequence of “ART *-ing* NOUN” and “ART **-ing* NOUN” respectively. The grammatical tag ART stands for (in)definite articles and *-ing* stands for *-ing* forms.⁹⁾ Among the 20 types of *-ing* forms, most frequently occurring ones such as *remaining, loving, thinking, knowing, and understanding* are categorised into premodifying lexical adjectives in the *ODE* and *LDOCE*. The result of the frequency investigation is depicted in Table 1, and some examples are shown in (5).

Table 1. Colligation patterns of prenominal *-ing* forms derived from stative verbs

<i>-ing</i>	ART <i>-ing</i> NOUN	ART * <i>-ing</i> NOUN	Total	<i>-ing</i>	ART <i>-ing</i> NOUN	ART * <i>-ing</i> NOUN	Total
remaining	86,747	147	86,894	wanting	134	8	142
loving	29,661	4,309	33,970	wondering	136	0	136
thinking	5,503	1,835	7,338	liking	120	7	127
knowing	2,665	303	2,968	remembering	122	5	127
intending	1,756	12	1,768	belonging	75	47	122
owning	643	763	1,406	hoping	48	15	63
understanding	1,151	29	1,180	assuming	45	16	61
wishing	976	65	1,041	consisting	5	0	5
fearing	19	957	976	mattering	1	1	2
containing	194	518	712	supposing	0	0	0

- (5) a. The list of *the remaining members* of the new government will be known later this week. (NOW)
 b. MacDonald can now sit back with *a knowing smile*. (NOW)
 c. She went on to appear ... as Lucy Fearing on the adventure series *The Fearing Mind*. (NOW)
 d. Otile Brown said he is *a God-fearing man* who doesn't even know how to con people. (NOW)

All the root form verbs of the *-ing* premodifiers in (5a-d) are stative. The collocation of *the remaining members* in (5a), for example, seems to refer to the people who have not been announced yet as a member of the new government. In comparison with the other (i.e. the already-announced) members, the *-ing* form *remaining* has enough salience to specify the (unknown) *members'* social

⁹⁾ The search expression “ART **ing* NOUN” gives rise to a problem that the tag ART picks up demonstrative pronouns. Therefore, the examples having demonstrative pronouns were manually excluded from the calculation in Table 1.

property or status at the speech time, and the high frequency of occurrence makes this *-ing* form classified as a lexical adjective in dictionaries. The semantic relationship between *knowing* and *smile* in (5b) is intriguing to point out, because *smile* is not an experiencer of *knowing*, while *members* are experiencers of *remaining* in (5a).¹⁰ The *ODE* defines the adjective *knowing* as “showing and suggesting that one has knowledge or awareness that is secret or known to only a few people”. So *a knowing smile* designates a smile that suggests that the person knows something secret. Smiling itself is a short moment event, but as long as a knowing smile appears on somebody’s face, the situation expressed by *knowing* is stative and cognitively salient enough to specify the feature of the smile, which can differentiate from the other types of smiles (e.g. *a big smile*). The *-ing* form *fearing*, which will be parsed as a participle rather than a lexical adjective, in (5c) and (5d), on the other hand, is another valuable example to examine. As Table 1 shows, *fearing* is less likely to be used as a premodifying *-ing* form alone, but as a compound word such as *God-fearing* which is more likely to be used in the premodifying usage. The ratio between when used alone and when used as a compound word is about 1 to 51 as Table 1 shows. *Fearing* itself has a temporary but enough time-stability in the expression *The Fearing Mind*, a title of a TV drama. This expression, however, lacks the object of fear and thus expresses ambiguity as an English expression, which would lead to the low frequency for using premodifying *fearing*. On the other hand, the compound word *God-fearing* is highly likely to be used. Our corpus investigation clarifies that out of the 100 types of the colligation pattern “article (or demonstrative pronoun) + any word-*fearing* (as a compound word) + noun”, 91 types include *God-fearing*.¹¹

As we have seen in section 2.1, De Smet & Heyvaert (2011) argue that the crucial semantic factors for the usage of premodifying *-ing* participles are simultaneity and time-stability. However, as Table 1 shows, the frequencies of some *-ing* forms such as *consisting*, *mattering* and *supposing* are very low although these premodifiers may clearly express time-stabilities, as in:

- (6) a. Ganguly, who had been taken to a Kasba hospital on Wednesday continued to complain of pain in his eye. On Thursday morning, alarmed with *the consisting pain*, his son Kaustav took him to National Medical College. (NOW)
- b. Okay, that’s a stretch, but take music as an example. It is, as theorist Lawrence Grossman terms it, part of *the mattering maps* which pinpoint our journey through life; now it’s a

¹⁰ Here the term *experiencer* refers to a semantic role in the sentence which functions as a person or thing that experience of the situation the verb designates (in this case *knowing*).

¹¹ Other types include expressions like *a tax-fearing*, *the inflation-fearing*, *the light-fearing*, and *the virus-fearing*.

solitary and less inclusive activity.¹²⁾ (NOW)

(7) consist in: to have something as the main or only part or feature (*ODE*)

consist of: to be formed from the people or things mentioned (*ODE*)

First of all, *the consisting pain* in (6a) could be paraphrased by *the persistent pain*, and the original meanings in the verb *to consist* which is defined in (7) seems to be backgrounded in this premodifying usage. As the definitions in (7) show, the verb *to consist* has different meanings depending on the difference in the prepositions that follow it (i.e. *of* and *in*). The premodifying use of *consisting* necessarily cannot take these prepositions and thus gives ambiguity in meaning. And this meaning ambiguity does not lead to enough cognitive salience to specify the feature of the referent of the noun. Thus, the frequency for the use of *consisting* will be low in the premodifying usage, while it expresses time-stability. However, *consisting* in (6a) refers to persistence, and in this case this *-ing* form succeeds to describe the state of the pain in the context. In addition, *mattering* also shows a low frequency. This is simply because to matter means “to be important or significant” and thus unless there is a positive reason to use *mattering* instead of the adjective *important* or *significant*, this participle will never be used.

Furthermore, with respect to the colligation pattern “article + *supposing* + noun”, there are no examples found in the NOW corpus. It looks strange, on the other hand, that the *-ing* form *assuming* receives 45 hits as a single premodifying word and 16 hits as a compound pattern, while *to assume* is very similar to *to suppose* in meaning. The following definitions are quoted from the *OALD*, as in:

(8) a. assume: to think or accept that something is true but without having proof of it

b. suppose: to think or believe that something is true or possible (based on the knowledge that you have)

The definitions shown in (8a-b) suggest that premodifying use of *assuming* and *supposing* will express time-stability. A close examination of corpus data, however, reveals that examples extracted from the NOW corpus may be archaic and do not sound natural in current English, as in:

¹²⁾ According to Loewenstein and Moen (2006:154), a mattering map is “a “projection” ... of how different things are valued in different social settings. It highlights the fact that different social groups value different things, and, because people are inherently social and naturally adopt the attitude toward themselves that others adopt toward them, what people value in themselves, and their feelings of personal worth, often undergo radical changes when they shift from one social context to another” .

- (9) a. 'Coupled with that she is a fantastic footballer and her attitude is brilliant so when you add all those things together she has been a revelation for us really, and such *an assuming character* too.' (NOW)
- b. Within the terracotta brick walls exists *an assuming cafe-gallery*. (NOW)
- c. Milton Soares lived *an assuming life* in an end terrace house, but secretly he was an international drug facilitator travelling regularly to South America and Europe. (NOW)

Therefore, this paper concludes that both *supposing* and *assuming* are unlikely to be used as a premodifier of nouns. This is because, unlike *thinking* in (5c-d), these *-ing* forms represent a human's inner psychological activities that are difficult to identify clearly from others. These objectively invisible activities do not lead to cognitive salience. And this will be the reason why *supposing* and *assuming* are not used as a premodifiers.

On the other hand, Table 1 shows that *intending* is highly likely to be used as a premodifying *-ing* form, although *to intend* also means psychological activities, as in:

- (10) a. to intend: have (a course of action) as one's purpose or intention; plan (*ODE*)
- b. Recognition of *the Intending Parents* as the birth parents from birth would have made this entire process so much easier and baby could have easily been born here without so much accommodation and outcomes having to be planned for. (NOW)
- c. I am sure that at the appropriate time, *the intending candidates* would signify their interest to run. (NOW)

As the dictionary's definition represents, *to intend* refers to a psychological state, which basically cannot be observable. However, examples (10b) and (10c) show that *intending* functions properly as a premodifier of nouns. This is because the premodifier *intending* expresses planning to take some particular action and having already made it more or less public. In this respect, this *-ing* form is salient enough to specify the property of the noun. Furthermore, *the intending parents* in (10b), for example, is described in comparison with *the birth parents* in the context. This comparison also makes this premodifier more prominent in the interpretation. To summarise, *-ing* premodifiers of nouns derived from stative verbs have time-stability, but this semantic factor cannot be a necessary-sufficient condition for the use of them. Rather our corpus research endorses that cognitive salience is the crucial semantic factor for the use of this construction.

4.2. Activities and Accomplishments

The situation type of activities can be defined as “processes that involve physical or mental activity, and consist entirely in the process. Some typical activities are [stroll in the park], [laugh], [revolve], [think about], [eat cherries]. Such events have no goal, culmination or natural final point: their termination is merely the cessation of activity” (Smith 1991: 44-5). One of the comprehensive properties of activity verbs is that they are highly likely to take progressive forms. My NOW corpus investigation tells us that the twenty most frequently occurring active verbs in the form of progressive (*be* verbs + *-ing*) are (in order of frequency): *go, do, look, work, try, use, come, take, make, plan, degrade, talk, run, play, see, grow, ask, speak, offer, say*. These twenty activity verbs are examined to investigate how they are used as a premodifier. Table 2 shows the frequencies of two types of colligation patterns of prenominal *-ing* forms derived from active verbs.

Table 2. Colligation patterns of prenominal *-ing* forms derived from active verbs

<i>-ing</i>	ART <i>-ing</i> NOUN	ART * <i>-ing</i> NOUN	Total	<i>-ing</i>	ART <i>-ing</i> NOUN	ART * <i>-ing</i> NOUN	Total
coming	617,803	4,034	621,837	asking	20,463	34	20,497
growing	297,873	27,007	324,880	struggling	14,043	291	14,334
working	145,063	8,930	153,993	speaking	5,906	8,255	14,161
running	108,662	22,206	130,868	taking	1,336	4,973	6,309
playing	95,556	6,995	102,551	trying	5,652	62	5,714
looking	2,554	96,623	99,177	offering	4,981	218	5,199
planning	74,516	1,241	75,757	doing	1,745	237	1,982
making	122	27,587	27,709	seeing	573	732	1,305
going	13,577	10,671	24,248	degrading	814	130	944
talking	20,272	1,152	21,424	using	163	312	475

As this table clearly represents, verbs of activities are more highly likely to be used as *-ing* premodifiers than verbs of stativity shown in Table 1. This is simply because active situations, which basically involve movement, will lead to a more cognitively salient description of the scene than stative situations, and thus are likely to be suitable to specify the feature of the referent of the noun. And most of the *-ing* forms listed in this table are classified as adjectives or nouns by the *ODE* (i.e. *coming, working, running, planning, making, going, talking, speaking, taking, trying, offering, doing, seeing, and degrading*). *Coming*, for example, is by far the most frequently occurring *-ing* premodifier among the other types. Most of the examples retrieved from the corpus refer to the future time (e.g. *the coming month/ weeks/ days/ years/ decades*) or the future events (e.g. *the coming elections/ apocalypse/ polls/ campaign*). Out of 100 types of the colligation patterns of article + *coming* + noun, only two examples are concerned with spatial movement (e.g. *the coming*

storm and *the coming team*). This *-ing* form classified as an adjective serves to limit the range of referents of the noun, which has an originally vague meaning (e.g. *year* and *the coming year*). As for the colligation patterns of article + a word-*ing* premodifiers + noun, the compounding *-ing* premodifiers fall into two types, a) adverb + *-ing* form or b) object + *-ing* forms, as in:

- (11) a. “Also, to show appreciation to our customers on *an on-going basis*,” he said. (NOW)
 b. The company disclaims any obligation or intention to update *the forward-looking statements* made on this call. (NOW)
 c. There’s a lot of confusion around using the app on an iPhone, which is a problem when almost 54 percent of *the mobile-using population* uses iOS. (NOW)
 d. Meta has no visibility of the entries or involvement in *the decision-making process*. (NOW)

Activity verbs can be considered verbs of accomplishment when they take a specific object and represent an end point. Accomplishment verbs represent “durative events with natural endpoints” (Smith 1991: 51ff.), which is illustrated in (12a) and (12c). And as Vartiainen (2012: 228) correctly points out, *-ing* premodifiers derived from accomplishment verbs do not refer to the endpoint as illustrated in (12b) and (12d).

- (12) a. Health department *has made a policy* on study leave for its non-gazetted staff. (NOW)
 b. If we as users want those rights then we need to engage in *the policy-making process*. (NOW)
 c. Instead, she *has slowly built confidence*, learned the tricks of the trade and developed into a consistent competitor. (NOW)
 d. Long-term commitments will be needed to realise the benefits of the centre as *a confidence-building measure*. (NOW)

Examples (12b) and (12d) show that both *policy-making* and *confidence-building* do not imply an endpoint of the situation but give a salient specification of the scope of the referents of “process” and “means”, respectively.

4.4. Achievements

Here attention is directed to the fourth situation type, i.e. achievements, which is illustrated by, for example, *burst*, *die*, *explode*, *leave*, *pop*, *reach*, *recognise*, and *win*. Achievements are “instantaneous events that result in a change of state such as [break], [reach the top], [leave], [recognize Aunt Jane]” (Smith 1995: 58). “Achievements are dynamic and telic; they are

instantaneous events, often with a preliminary process which is detachable from the event itself” (Smith 1995: 62). However, premodifying *-ing* forms make this interpretative situation much more flexible according to the context where they occur. In what follows, we will examine how the context has an effect on the construal of this type of verbs in the form of premodifying *-ing*.

Table 3. Colligation patterns of prenominal *-ing* forms derived from achievement verbs

Verbs	ART <i>-ing</i> NOUN	ART * <i>-ing</i> NOUN	Total	Verbs	ART <i>-ing</i> NOUN	ART * <i>-ing</i> NOUN	Total
winning	161,521	68,367	229,888	reaching	335	5,314	5,649
starting	197,957	274	198,231	stopping	1,628	1,731	3,359
dying	36,097	261	36,358	bursting	561	243	804
leaving	14,216	383	14,599	exploding	216	5	221
finding	637	9,240	9,877	recognizing	24	29	53

First of all, we will observe the frequency distribution of the interpretative situation of premodifying *-ing* forms derived from achievement verbs. Table 3 represents that *winning* and *starting* are by far the most frequently occurring among the types of prenominal *-ing* forms derived from achievement verbs in the NOW corpus. On the other hand, *recognizing* is the least frequent type in the achievement verb class. This fact seems to be related to the low frequency of the premodifier *supposing* derived from stative verbs. *Recognizing* represents a change in human psychology (i.e. from nonrecognition to recognition of something), but it is difficult to objectively perceive this situational (i.e. psychological) change (e.g. ? *a recognizing person*). In other words, the premodifying use of *recognizing* seems to be restricted to referring to the situations where the events are objectively observable, as in (13a-b).

- (13) a. The mind must approach the problem of death with a totally new awareness in which the familiar, *the recognizing process*, is absent. (NOW)
 b. Ten years into the deep-learning revolution, neural nets and *their pattern-recognizing abilities* have colonized every nook of daily life. (NOW)
 c. Sam Meier and her colleague Kelly Phillips began combing through *the finding aid*, which indicated the presence of several portraits of Hamre and her husband. (NOW)
 d. He asked if *a fact-finding committee* was formed to determine the causes of such loss. (NOW)

The expressions of *the recognizing process* in (13a) and *their pattern-recognizing abilities* in (13b) are found in the NOW corpus, but these phrases seem to be peculiar to a particular context and thus less frequent. However, regarding the other side — i.e. *the finding aid* in (13c) and *a fact-finding*

committee in (13d) — while *finding* is semantically somewhat concerned with recognition, it nevertheless appears frequently in the corpus. This is probably because the premodifier *finding* in these phrases involves the action of searching and this action is cognitively prominent enough to specify the referents of the nouns (i.e. *aid* in (13c) and *committee* in (13d)).

4.4.1. Winning

The *-ing* form *winning* will be one of the most elusive cases to generalise the premodifying usage in *-ing* forms. As we have seen in section 3.2., De Smet & Heyvaert (2011: 486) point out that this *-ing* form receives three types of interpretations. My corpus investigation reveals that the premodifying *winning* denotes a wider variety of meanings. The following sentences exemplify the great flexibility of the interpretations of the premodifying *winning* in question, all of which will be categorised as lexical adjectives, however.

- (14) a. Miami is on a three-game *winning streak*, improving to 32-36. (NOW)
 b. Memphis Depay celebrates scoring his team's *winning goal* in the final minute of a game. (NOW)
 c. Certainly we want to get back on the *winning ways* as well. So it's a double effort from my side. (NOW)
 d. Our *winning edge* is to provide better services. Free services do not mean cheap services. (NOW)
 e. ..., Bob walked over to his boy and told him to enjoy his *winning walk* up to the green. (NOW)

All the examples of *winning* in (14a)-(14e) will be categorised as lexical adjectives rather than present participles. A close examination of these examples, however, uncovers different implications of the meanings among them. The collocation of *winning streak* in (14a), which is by far the most frequently occurring expression in the colligation of *winning* plus a noun in the NOW corpus, designates the continuity of the event. The typical predicate verbs of the sentence that take the collocation in question as their object are to *extend, hold, stretch, end, break, bring, ride, go on*, all of which assume that the event expressed by the *winning streak* has already existed and is likely to continue. Therefore, the situation denoted by *winning* here is continuous. And the speaker's point of view on the victory is likely to be directed from the past to the present, and then continuously moved into the future. *Winning goal* in (14b) is another intuiting example in its interpretation. This adjective refers to the moment at which one goal determines the victory. The adjective *winning* here thus can be interpreted as referring to a moment rather than continuity.

In (14c), the collocation of *the winning ways* reflects the speaker's special point of view. My corpus investigation indicates that this collocation is highly likely to be preceded by verbal phrases such as *get back to*, *get back on*, *return to*, *continue*, *put back to*, *regain*, *restore*, all of which assume the situation of what already exists/existed before. The sentence (14c) describes that the speaker desires to regain the situation of a series of past victories. In other words, the speaker's point of view in the phrase *the winning ways* is directed to the path of victory that he/she has followed so far, not the future path that he/she will open up. The meaning denoted by *winning* in this collocation can be described as *continuous* but should be distinguished from the one implied by *winning streak* in (14a), in that the speakers' points of view are different from each other. *The winning edge* in (14d) can be simply described as competitive advantage. Here the adjective *winning* seems to clearly express homogeneity. This phrase will be paraphrased as the edge for winning. In (14e), *the winning walk* has a very peculiar event. This collocation refers to the situation in which the winner goes past the stands next to the green and responds to the audience after his/her victory. And thus, *winning* is interpreted as referring to the situation after he/she wins the game. All the examples we have observed signify that the premodifiers *winning* are salient to describe the property of the referent of the noun it modifies.

4.4.2. Bursting/exploding

The colligation pattern *bursting* + noun is fascinating in that this construction also indicates the diversity of senses expressed by this *-ing* form. The verb *to burst* basically refers to the instantaneous situation where things "break open or apart suddenly and violently, especially as a result of an impact or internal pressure" (*ODE*). The meaning of this momentary change of the situation can be referred from physical situations to abstract concepts. My corpus survey makes it clear that *bursting* + noun is often used to express more abstract concepts rather than physical phenomena. Physical phenomena which can be expressed by *bursting* + noun are included by the collocations such as (*lung-*)*bursting run*, *bursting blossoms*, *bursting bubbles* and *bursting pipes*, as in:¹³⁾

- (15) a. When he came back, with two minutes left he made a *bursting run* forward, having his shot saved. (NOW)
 b. For example, marine aerosols created by *bursting bubbles* behave like champagne's *bursting bubbles*... (NOW)

¹³⁾ Most of the collocation of *bursting bubbles* in the NOW corpus, however, refer to some more abstract concepts (e.g. a bursting housing bubble), which will be explained in the next subsection.

- c. With the freeze lasting days, *bursting pipes* caused countless floods in homes and businesses across the region, leaving behind billions of dollars in damage. (NOW)
- d. The weather for the day featured clear skies with temperatures in the 60s, perfect conditions for observing and photographing the *bursting blossoms*. (NOW)

All the *-ing* forms *bursting* exemplified by (15a-d) make a reference to physical situations, but they denote three different kinds of interpretive focus. A *bursting run* in (15a) designates a very hard running activity in which his lung is about to burst. In this case, the present participle metaphorically refers to the pre-rupture stage of the runner's lung. In other words, the interpretive focus on the meaning denoted by *bursting lung* can be said as a preliminary state (i.e. *bursting*). Analogous comments hold for the collocations of *bursting trophy vessels* and *bursting prison*, in which the situations concerning trophy vessels and the prison are reaching the containment limit. Another collocation, *bursting bubbles* in (15b), is connected to repetitive momentary situations in which balls of gas in liquid burst in quick succession. Here the situation denoted by the *-ing* form is recognized as being durative. A similar comment holds for the collocations of *bursting applause*, which also indicate the durative situation but in this case the interpretive focus will be at the beginning of the applause. *Bursting pipes* in (15c) indicates the situation of the momentary events of *bursting* and its resultant states. Actually, our corpus findings suggest that the collocation *bursting pipes* is more likely to co-occur with the noun *flood*, which expresses the resultant state after pipes burst. To summarise, the physical situations denoted by *bursting* + noun receive at least three different interpretive focuses such as a preliminary state in (15a), a momentary repetitive event in (15b), and the moment and resultant state of the target situation in (15c) and (15d). However, all these premodifiers are salient enough to characterise the property of the referent of the nouns.

The colligation *bursting* + noun also indicates more abstract concepts rather than physical situations. Typical examples are:

- (16) a. We are at *bursting point* with regards to trying to find pitches for these kids to play games. (NOW)
- b. The program was well attended with youthful smiles, *bursting energy* and unmatched joy. (NOW)
- c. Ever since national house prices started their extraordinary mid-pandemic boom, expert and amateur property punters have been predicting everything from a “slow down” to a “*bursting bubble*”. (NOW)

More abstract meanings denoted by *bursting* seem to arise through a metaphorical mapping from its physical concrete meaning. *Bursting point* in (16a) refers to the situation in which the degree of something is about to reach its limit. This example sentence describes the scene where the speakers' efforts to find pitches comes close to the limit. In other words, the speakers tried their best and found no other way to solve the problem. What is intriguing here is that the modified noun *point* does not refer to the experiencer/patient of the event of *bursting* (e.g. *bursting buds/pipes*), but to the level at which someone reaches the limit of their efforts. This difference in the semantic relationship between the premodifying *-ing* form and its modified noun reflects the flexibility of the usage of this colligation pattern. *Bursting energy* in (16b) is another metaphorical usage which should be mentioned. In this example, *energy* is not concerned with physical power but refers to the strength and vitality emerging from young people. Actually, the expression *bursting energy* is more likely to co-occur with the noun *youth* in sentences. The semantic role of *energy* in this collocation will be recognised as patient, and a similar comment holds for other collocations like *bursting pride* and *bursting pressure*. The *bursting bubble* in (16c), of which meaning is differentiated from that of (15b), concerns a conceptual meaning, i.e. "used for saying that a very successful or happy period of time suddenly ends" (*LDOCE*). Along with this metaphorical interpretation of *bubble*, the premodifying participle *bursting* does not refer to a momentary event where something suddenly breaks like (15b) but to a state which is very full and almost breaks open.

The premodifying *-ing* form *exploding* is another target for our analysis because this participle is similar to *bursting* in its meaning but has different collocational patterns from *bursting*. The ODE defines *to explode* as "to burst or shatter violently and noisily as a result of rapid combustion, excessive internal pressure, or other process". This definition admits that *to explode* represents a greater degree of rupture than *to burst*. This greater degree of rupture denoted by *exploding* gives rise to extended interpretation of momentary scenes. Our corpus investigation tells that the frequency of momentary situations denoted by premodifying *bursting* is very low. On the other hand, premodifying *exploding* is more likely to be used to express momentary scenes, but the scene of explosion seems to be construed much longer, as in:

- (17) a. The story starts with an *exploding spaceship*, in a prelude set before life on Earth began (and the serial is famously hazy on the dates there) before smoothly segueing to Paris in 1979. (NOW)
- b. You should really never get too close to an actively *exploding volcano*, but the same rule doesn't seem to apply for drones. (NOW)
- c. The car company confirmed yet another death linked to an *exploding airbag* earlier this

week, taking the total number of fatalities in America alone to 12 in addition to several others worldwide. (NOW)

- d. California hospitals are battling to find beds to house patients amid fears that the *exploding coronavirus infection rate* will exhaust resources and health care workers. (NOW)

All the situations depicted by the colligation pattern *exploding* + noun illustrated in (17a)-(17d) contain the moment of explosion as their profile. Unlike another colligation pattern *bursting* + noun (e.g. *bursting bubbles in* (15b)), *exploding* + noun is highly likely to express the scene of which profile is the moment of explosion. On the basis of our corpus-based investigation of the context in which *exploding* + noun occurs, it will be reasonable to assume that this frequency difference between premodifying *bursting* and *exploding* will be caused by the degree of violence of the break-out scene. The degree of the break-up designated by *to explode* is usually greater than that represented by *to burst*. In (17a), for example, the expression *an exploding spaceship* in movies refers to a sequence of scenes that begins with a flash of light, followed by a spread of flames, and a cloud of smoke as a visual effect. These explosion processes are interpreted collectively (or in a summary scanning in Cognitive Grammar) but bring about enough cognitive salience and time-stability of *exploding* to specify the property of the spaceship.

The interpretive focus on the *-ing* form *exploding* in *an actively exploding volcano* in (17b) will be different from that of *an exploding spaceship* in that this *-ing* form does not seem to designate one sequential different event. Rather, the focal point of this expression will be the repetition of the events of lava eruption of which degree will not be so huge. The repetition of *exploding* guarantees a time-stability and cognitive salience as a premodifying participle. *An exploding airbag* in (17c) seems to receive another type of interpretation. The *exploding* here designates a particular momentary event which leads to a victim's death due to the impact of the rupture of the airbag. In this case, the participle *exploding* is unlikely to denote a time-stability of the situation, but express a cognitive salience enough to specify the property that can characterise the referent of the noun (i.e. *airbag*). In other words, *exploding* in (17c) not only refers to the rupture of an airbag, but also has a clear implication of the cause of the victim's death. In this sense, *exploding* here has a sufficient salience to express as a premodifying *-ing* form. *The exploding coronavirus infection rate* in (17d) refers to a more abstract situation where something is increasing, rather than a physical rupture event. This expression metaphorically depicts a very rapid increase in the infection rate of the coronavirus. A similar metaphorical use of this participle holds for *the exploding population/ demand/ popularity/ market/ growth/ debt/ costs/ interest/ industry*, all of which seem to represent a sudden increase with some kind of trigger. And these

expressions indicate cognitive salience enough to be used as a premodifying *-ing* form.

4.5. Semelfactives

The semelfactive, which was originally put forward by Smith (1995), is another type of verb category of which the construal focus of the described situation is punctual or a single stage of event but “do[es] not have preliminary stages, nor resultant stages: they are perhaps the simplest type of event” (Smith 1995: 55). Semelfactive verbs are similar to achievement verbs in that both of them put the focal point in meaning on punctuality, but semelfactives “do not require a plural subject for an iterative interpretation” (Katalin 2011: 123). Evans (2007: 174) also points out that “[t]he verb *cough* encodes a punctual event, and thus encodes the semelfactive aspect which has uniplex structure.”

Classification of Semelfactive Verbs (Katalin 2011: 123)

1. Bodily events: *blink, cough, burp, sneeze, wink, glimpse, jump, skip, spring, jerk, fart*
2. Internal events: *flicker, flash (lights), gleam, ring, spurt, squirt, spew*
3. Punctual actions involving movement: *tap, peck, scratch, kick, hammer a nail (once), pound on the table (once), pop (the gun), hit, slap, thump, thwack, smack, clap, shake, knock*
4. Punctual verbs of perception: *cry out (in pain), call out, shout out*

Table 4. Colligation patterns of prenominal *-ing* forms derived from semelfactive verbs.

Verbs	ART <i>-ing</i> NOUN	ART * <i>-ing</i> NOUN	Total	Verbs	ART <i>-ing</i> NOUN	ART * <i>-ing</i> NOUN	Total
kicking	8,217	507	8,724	blinking	772	31	803
flashing	3,088	120	3,208	scratching	439	363	802
jumping	2,530	402	2,932	smacking	149	540	689
flickering	1845	7	1,852	coughing	563	6	569
tapping	327	498	825	crying-out	3	0	414

Katalin (2011: 122) indicates that the difference between achievement verbs and semelfactive verbs lies in the semantic tendency that “[g]enerally semelfactives differ from achievements in lacking a result state, and this is seen in their inability to be used as adjectival modifiers expressing a result state, e.g. *the shattered window* vs. **the flashed light*”. Van Valin (2006: 156) gives an analogous comment and similar examples like *the shattered window* vs. **the flashed light, a burst blood vessel* vs. **a glimpsed person*. Katalin’s and Van Valin’s explanations suggest that semelfactive verbs do not express a resultant state and thus do not represent a time-stability in the adjectival past participle use, which leads to their invalidity in this usage. On the other hand, as Table 4 shows,

semelfactive verbs are actually used as adjectival modifiers in the form of *-ing*, as in:

- (18) a. You can check for beeps or *flashing lights* that could indicate a failed POST test and try to perform a hard reset. (NOW)
 b. Then it cuts to a wide shot of *small blinking lights* and the voiceover returns. (NOW)
 c. A survey of staff members revealed that those caring for *coughing patients* were more likely to get sick. (NOW)
 d. Tina said he sought psychiatric help but was told it would be two weeks until he could be seen. "He was a *crying-out victim* for help. (NOW)
 e. If you're cold, the best thing to do is *jumping jacks*, you know? (NOW)

All the events represented by the participles in (18a-d) are concerned with repetition. However, *flashing*, *blinking*, and *coughing* in (18a-c) designate a series of repetitive phenomena in a short period of time, but *a crying-out victim for help* in (18d) seems to express intermittent crying for help as a symptom of mental illness. So the repetitive events denoted by crying-out in (18d) happen in a longer period of time than that represented by the participles in (18a-c). *Jumping jacks* in (18e) refers to a physical jumping exercise. Therefore, the *-ing* form *jumping* here is purely atemporal but metonymically expresses enough cognitive salience to depict the property of the exercise in question.

Furthermore, the compounding premodifying use of semelfactive *-ing* forms has a tendency to express metonymic or metaphorical meanings, as in:

- (19) a. That's what makes this such *a head-scratching decision*. (NOW)
 b. Macron, despite winning the presidency with *a door-knocking campaign*, has reinforced centralization. (NOW)
 c. Samantha Ruth Prabhu has surprised all her fans via *the foot-tapping number* - Oo Antava. (NOW)
 d. China has dispatched an increasingly vocal cadre of diplomats out into the world of social media to take on all comers with, at times, *an eye-blinking frankness*. (NOW)

Head-scratching, *door-knocking*, and *foot-tapping* in (19a-c) mean *annoying*, *visiting*, *creating a strong rhythmic musical beat*, respectively through proximity associations. This is a kind of metonymic meaning extension from more cognitively salient physical actions to more abstract concepts. The compound premodifier *eye-blinking* in *an eye-blinking frankness* in (19d) seems to express double meanings, i.e. quick and surprising, which are also induced from the association of

proximity of “eye-blinking”. Anyway, the *-ing* premodifiers derived from semelfactive verbs in (18a-e) and (19a-d) clearly represent the characteristics of the referent of the noun, because they have enough cognitive salience.

5. Conclusion

The purpose of this paper was to provide a corpus-based full and valid explication of semantic and pragmatic mechanisms of the diversity of meanings expressed by the English adjectival premodifying *-ing* forms and to elucidate the crucial factor for the use of this modifying system. Before embarking on our corpus-based analysis, the present paper examined the two noteworthy previous analyses conducted by De Smet & Heyvaert (2011) and Vartiainen (2012), and pointed out the inadequacies of their arguments. De Smet and Heyvaert (2011) uphold the validity of the notions of simultaneity and time stability for the semantic elucidation of the use of the target construction. However, although time-stability in particular seemed to be a versatile concept, our corpus survey found that this was not always applicable for all the corpus examples. Vartiainen (2012) argues the validity of the participle’s atelicity. Our corpus investigation, however, clarifies that his argument is not effective for the present participles derived from some achievement verbs. Moreover, his data sets seemed too small to bear out his claims.

The present research established its theoretical perspectives for the detailed and valid corpus-based research. With respect to the target construction, we decided not to differentiate the three types of *-ing* forms such as gerunds, present participles and lexical adjectives because there are not certain criteria to distinguish them and we aim to give a unified analysis. Also, on the line proposed by De Smet & Heyvaert (2011) and Langacker (2008), we regarded the adjectival premodifying *-ing* form as atemporal in our analysis. However, we strongly placed emphasis on the argument that the meaning of the premodifying *-ing* form is subject to the context in which they occur even if it has the atemporalizing effect. This argument was supported by the corpus evidence extracted from the NOW corpus. Furthermore, the notion of cognitive salience introduced in Cognitive Grammar was applied to the elucidation of the use of the target construction. The acceptability difference between the collocations of *a thinking person* and *? a supposing person* was explained in the light of salience as a preliminary discussion of our corpus-based approach.

Our corpus-based analysis of the semantic and pragmatic mechanism for the use of the premodifying *-ing* form was conducted using the NOW corpus. First of all, we classified the situation types expressed originally by the lexical verbs in the form of the premodifying *-ing* into the five types, i.e. statives, activities, accomplishments, achievements, and semelfactives. This classification

enables us to systematically grasp how the *-ing* form premodification usage constitutes the variety of meanings. Premodifying *-ing* forms derived from the stative verbs basically keep time-stability, but we found that some of the types such as *supposing* and *assuming* were unlikely to be used as premodifiers, because their meanings are objectively invisible and thus they lack enough cognitive salience to qualify the noun referent feature. As for *-ing* forms derived from active verbs, our survey revealed that they were more highly likely to be used as *-ing* premodifiers than verbs of stativity. This is simply because activity situations, which basically involve movement, will lead to a more cognitively salient description of the scene than stative situations, and thus are likely to be suitable to specify the feature of the referent of the noun. Achievement verbs showed a wide range of meanings in the form of premodifying *-ing* forms. We described a semantic and pragmatic mechanism by which this type of *-ing* form expresses a rich variety of events in the light of linguistic contexts. As for *-ing* premodifiers derived from semelfactives, corpus evidence told us that all the events represented by this type of participle were concerned with repetition. On the other hand, the compounding premodifying use of semelfactive *-ing* forms showed a tendency to express metonymic or metaphorical meanings. To enhance the validity of the discoveries and hypotheses in this paper more incontrovertibly, we have to await further research.

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