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When Richard met CG: reference-point and English copy-raising*

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ABSTRACT

The aim of this paper is to develop a Cognitive Grammar-based analysis of English Copy-raising (CR) constructions such as *Richard seems like he is dancing*. We argue that the notion of reference-point plays a crucial role in licensing the matrix-subject of the construction. In CR, with the epistemic verbs *seem* and *appear*, the matrix-subject functions as a reference-point in relation to the pronominal copy (if a copy exists) in the embedded clause. The aboutness topicality of the matrix-subject in CR is expected, owing to its reference-point property. The epistemic CR construction is acceptable without a pronominal copy if the matrix-subject functions as a reference-point in relation to the complement clause. The same type of analysis is applied to the CR construction with perceptual resemblance (PR) verbs – *sound*, *look*, *feel*, and *smell* – leading to the conclusion that the strong dichotomy between epistemic and PR verbs is illusory. It is further demonstrated that expletive *there*-raising in CR is motivated by the same reference-point phenomenon. The difference between *there*-raising and other CR examples stems from the role of *there* as a setting subject. Our reference-point-based analysis

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predicts a metonymic interpretation of the matrix-subject, which we attribute to the connection between reference-point and metonymy.

KEYWORDS: Cognitive Grammar, copy-raising, perceptual resemblance verbs, perceptual source, reference-point.

1. Introduction

The English SUBJECT-TO-SUBJECT RAISING (SSR) construction illustrated in (1) has been an extensively researched topic across diverse theoretical frameworks since Rosenbaum (1967).

(1) Mia seems to be leaving for the concert. (SSR)

Albeit similar, COPY-RAISING (CR),[1] shown in (2), contrasts with SSR in three distinctive ways. First, in the SSR example (1), the subject of the matrix clause is co-indexed with the subject gap in the infinitival clause.[2] This is different from the CR example (2), where the matrix subject is co-indexed with the overtly realized pronoun in the complement clause. Second, unlike SSR, the CR predicate takes a tensed complement, headed by *like*, *as if*, or *as though*. The third noticeable difference is the choice of predicates. While SSR is not permitted with PERCEPTUAL RESEMBLANCE (PR) verbs,[3] as in (3), CR is compatible with this verb class, as shown in (4).

(2) Mia seems like / as if / as though she is leaving for the concert. (CR)
(3) * Mia sounds/looks/feels to be ready for the concert.
(4) Mia sounds/looks/feels like she is ready for the concert.

Compared to SSR, significantly less attention has been paid to CR. This is perhaps because CR was treated as a highly marked construction found only in English.[4] In reality, CR is a widespread phenomenon observed in many different languages such as Samoan (Chung, 1978), Hebrew (Lappin, 1984), Irish (McCloskey & Sells, 1988), Haitian Creole (Déprez, 1992), Persian (Darzi, 1996), Turkish (Moore, 1998), and Swedish (Asudeh & Toivonen, 2012).

CR was initially discussed from a generative linguistics perspective by Rogers in a series of CLS papers (1971, 1972, 1974) and his PhD dissertation (1973),

[1] Rogers (1971, 1972) calls this type of construction a 'Richard construction', based on his examples, which included sentences like *Richard seems like he is in trouble*. However, we will use the general term 'copy-raising' throughout this paper, despite our nod to Rogers' "Richard" in the title.
[2] The movement mechanism, of course, is relevant only to the generative approach.
[3] Rogers (1971, 1972, 1973, 1974) classifies these verbs as FLIP PERCEPTION VERBS.
[4] See Davies and Dubinsky (2004) for a review of raising in general.

and also by Postal (1974). More recently, Potsdam and Runner (2001) revisited this topic from a fresh perspective. Since then, CR has drawn renewed attention from scholars, as demonstrated by a handful of recent publications (Asudeh, 2002, 2005, 2012; Asudeh & Toivonen, 2012; Fujii, 2005, 2007; Kim, 2014; Landau, 2009, 2011; Mack, 2010). It is interesting to note that most of the aforementioned research was conducted from the formal linguistics perspective despite the diversity of theoretical frameworks the authors adopt.[5] As far as we are aware, very little research examines this topic within cognitive linguistics.

The main purpose of this paper is to develop an analysis of English CR constructions from a Cognitive Grammar viewpoint (Langacker, 1987, 1991a, 1991b, 2000, 2008, 2009) and to present some broader implications of our analysis. Our specific objective is modest: to show how CR can be naturally accommodated from a theoretical perspective very different from the previous proposals listed above. The data we present in this paper come from three sources: published papers, corpus and web searches, and our own intuition. Except for one Korean example, our data were surveyed among 102 native English speakers, who rated the acceptability of each example using a standard Likert scale.[6,7]

2. Proposal

We argue that the matrix-subject in (2) and (4) is licensed via the independently established informational construct known as REFERENCE-POINT. Our view contrasts with the dual-licensing approach (Horn, 1981; Mack, 2010; Rogers, 1973, 1974; Sag, 2010; inter alia), which assumes two distinct mechanisms: one purely syntactic and the other interpretive/informational. More specifically, we argue that the CR construction is an instance of reference-point. Reference-point is the human cognitive ability to conceptualize one entity through another; i.e., reference-point is a mental address to reach a target. The aspects of the reference-point relation are shown schematically in Figure 1. In Figure 1, C stands for the CONCEPTUALIZER, R for the REFERENCE-POINT, and D for the DOMINION. Dominion constitutes the possible set of targets that a given reference-point is related to. The dashed

[5] Mack (2010) provides an analysis from a discourse-pragmatic perspective.

[6] Sentences are rated as acceptable (scores 2.1 ~ 5) and unacceptable (1 ~ 2.0, notated by *). We understand that raters are more consistent with open-ended ratio scales than with the category rating scales like the one we adopted here (Johnson, 2008; Stevens, 1975), but we chose it as a guideline for the purpose of simplicity.

[7] The range of acceptable sentences is wider than that of unacceptable ones. Participants were generally not in favor of CR and PR constructions; for this reason, we gave the * mark when the examples received conspicuously low ratings.

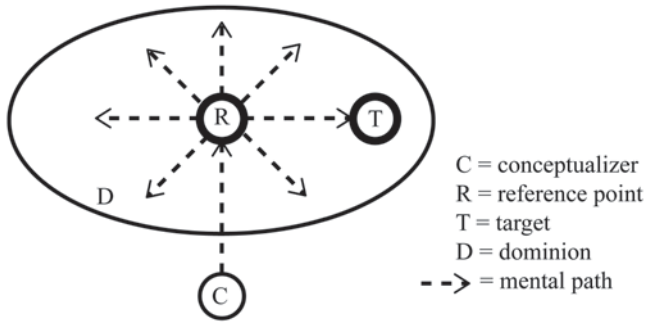

Fig. 1. Reference-point illustrated (redrawn after Langacker, 2008, p. 84).

arrow is the mental path the conceptualizer follows to reach the target, which is the entity accessed via the reference-point.

To illustrate a concrete case of reference-point, let us consider the possessive noun phrase *Sally's dog*. The possessive morpheme *'s* invokes a reference-point relationship in the sense that X, in the schematic possessive construction [X's Y], functions as a mental address for Y, by drawing a mental path from X to Y. In this example, *Sally* is invoked as a reference-point, and *dog* is accessed via *Sally*. The notion of reference-point has in fact been adopted in the analysis of various phenomena, such as possessor–possessee (Langacker, 2008; Taylor, 1996), multiple subject constructions (Kumashiro & Langacker, 2003; Park, 2011), and antecedent–anaphora (van Hoek, 1997), among others.

Reference-point plays an important role in discerning CR from SSR. The matrix-subject of CR with epistemic verbs (ECR) is almost always topical, whereas the same does not hold true for SSR (see Mack, 2010). We demonstrate that these differences are merely symptomatic of reference-point variation in regard to prototypicality. A prototypical reference-point relationship overtly identifies a reference-point and its target within a relevant dominion. While the matrix-subject of ECR exhibits a quintessential reference-point property, SSR does not, as it lacks an overt target (pronominal copy). Here, we would like to emphasize that reference-point is not identical to TOPICALITY. In his works, Langacker suggests that reference-point is a "sort of topic", without providing further detailed descriptions on how they compare. In our view, reference-point is a necessary condition for topicality. If *x* is a topic, then *x* is a reference-point. Reference-point is not a sufficient condition for topicality, because it is possible that *x* is a reference-point without being a topic. Indeed, in the literature that adopts the notion of reference-point, scholars such as Kumashiro and Langacker (2003) and Janda (2011) utilize an implicit reference-point, which cannot be interpreted as a topic. For example, in the Korean sentence (5), the relational nominal subject *hand* implicitly invokes

a reference-point, the owner of the *hand*, because without the owner, the speaker cannot access *hand* (see Park, 2011). The implicitly invoked reference-point functions as a mental address for *hand* in the lower clause without identifying a specific person, although it ultimately corresponds to *Trump* in the higher clause.

(5) [*Thulemphu-ka* [*son-i* *cakta*]].
Trump-Subj hand-Subj be.small
'Trump has small hands.'

Another interesting observation is the contrast between epistemic and PR verbs. While PR verbs do not require a pronoun copy in the embedded clause, as in (6b), epistemic verbs generally do, as shown in (6a).[8]

(6) a. * Dan seemed/appeared like Jean cooked salmon.
b. Dan sounded like Jean cooked salmon.

As will be discussed in detail later, several scholars attempted to explain the difference between (6a) and (6b) by heavily relying on the notion of PERCEPTUAL SOURCE (P-source). Here is a brief summary of the P-source-based analysis. *Dan*'s being the P-source in (6b) makes the sentence acceptable, whereas the infelicity of (6a) is attributed to the uninterpretability of *Dan* as an evidential P-source. Mack (2010, p. 169) rightly criticizes this type of approach by arguing that "the evidential source for [*sound*] need not be perceptual at all; evidence may also come from hearsay or inference". In other words, *Dan* does not have to be an evidential P-source to make (6b) felicitous; this is the view we, too, support. That being said, Asudeh and Toivonen (2012) and Landau (2011) provide more sophisticated treatments of CR based on P-source, which is naturally not reflected in Mack (2010) due to the timing of the publications. For this reason, we revisit the P-source-related predictions more carefully in this paper.

Instead of relying on the notion of P-source, we argue that the matrix-subject *Dan* in (6a) attempts to build a reference-point relationship with its target, whether it be a pronominal or the whole embedded clause. *Dan* then requires an explicit target to express an anaphoric link between itself and its corresponding pronoun, or *Dan* should be able to be interpreted within the context of *Jean cooked salmon*. In the former case, the target is the pronoun, while in the latter case, the target is the whole embedded clause. Because no target (pronoun) is identified, or cannot be established, the resulting sentence is unacceptable. (6b) differs from (6a) in that *Dan* is a reference-point in relation to the embedded clause, the reference-point's target. This is because the proposition made by the embedded clause can only be interpreted in

[8] A strong demarcation between epistemic verbs and PR verbs is untenable. As shown in Section 4.1, some epistemic verbs behave like PR verbs, and vice versa.

Dan's dominion if *Dan* is contextually related. In this sense, it functions very similarly to an external topic, which Mack (2010) identifies as a 'subjective topic'. Note that the same type of interpretation is not available in (6a).

Our approach exhibits great similarity to Kim's (2014, p. 183) PERCEPTUAL CHARACTERIZATION CONDITION (PCC). He states that "[t]he matrix-subject of the CR construction, serving as the topic, is 'perceptually characterized' by the rest of the utterance". That said, unlike Kim's PCC, our analysis employs reference-point, which is a way to construe semantic content through a dynamic mental scanning process, ubiquitously observed in human language.

The relationship between reference-point and topicality also brings into question the so-called expletive raising construction, demonstrated by (7), which needs to be handled somewhat differently than the two aforementioned CR constructions.

(7) There seems/appears like there's going to be a big mess in this department.

In this example, the two expletives are independently licensed as setting subjects at each level in Langacker's (2009, 2011) terms. Nonetheless, they are anaphorically linked. Note that the upper *there* functions as a reference-point and the lower *there* as the target.[9] In this regard, the underlying motivation behind *there*-raising is similar to other CR examples. Although our analysis shares general insights with Mack (2010), this is one major difference between her ideas and ours. Mack argues that examples like (7) are licensed via SUBJECT-TO-SUBJECT COPY-RAISING (SSCR), which is purely syntactically motivated. This is because the matrix-subject *there* lacks aboutness topicality, unlike subjects in other CR examples. In our analysis, (7) is almost identical to other CR examples, and the differences stem from the independent source, known as SETTING SUBJECT. As an abstract setting subject, *there* merely hosts a relationship, as opposed to being a participant in that relationship. As a non-participant TRAJECTOR, *there* cannot be interpreted as a topical subject.

Our analysis predicts a metonymic interpretation[10] of the matrix-subject in (8), since metonymy and reference-point are inextricably linked phenomena;

[9] As will become clearer in later sections, *there* in the examples like *there is a riot in the park* does not function as a reference-point, though it is indeed a setting subject.

[10] The metonymic status of *that book* in this example is somewhat controversial. If *that book* refers to a physical tome, some linguists (Croft, 1993; Ruiz de Mendoza Ibáñez, 2000) would not consider it metonymic, since they regard PHYSICAL OBJECT as primary in the BOOK domain as opposed to a secondary domain. Even so, other linguists, such as Barcelona (2011), would consider this at least peripherally metonymic. For detailed discussion on the definition of metonymy, please refer to Benczes, Barcelona, and Ruiz de Mendoza Ibáñez (2011).

both of them utilize the concept of one entity in order to invoke another which is closely related. As will be discussed in Section 3, this type of example poses challenges to the P-source-based approaches, because (8) is acceptable without a pronoun copy even though *that book* is not a P-source. We argue that the metonymic interpretation of *that book* is at the heart of this construction because *that book* functions as a reference-point with respect to *everyone should own a copy*.

(8) That book sounds like everyone should own a copy.
(Heycock, 1994, p. 292; Landau, 2011, p. 794)

We illustrate several variations of epistemic and PR verb examples accompanied by the challenges the examples face in a theory-neutral way. While we present the examples and the related issues, we provide our approach in a more impressionistic way, saving the technical analyses for a later section.

3. Variations of CR and the issues

In previous sections, we introduced a typical example of CR with a brief description. The focus of earlier research (Rogers, 1971, 1972, 1973) and its subsequent traditional movement analyses (Moore, 1998; Ura, 1998) revolved around this type of example, where the pronominal copy of the matrix-subject occurs in the subject position of the complement clause. Research conducted more recently (Asudeh, 2012; Asudeh & Toivonen, 2012; Kim, 2014; Landau, 2009, 2011; Mack, 2010) reports that the CR phenomenon is much more complex than earlier researchers assumed. This section illustrates an array of variations in CR in conjunction with related empirical and theoretical issues.

3.1. NON-SUBJECT CR

Though not central to their studies, a number of earlier researchers (Heycock, 1994; Lappin, 1984; Rogers, 1974) noted a variation of CR in which the pronominal copy is a non-subject, as illustrated in (9–11).

(9) Mary appears as if her job is going well.
(10) The broach looks to me like Abbie gave it to Myma.
(11) Bill sounds like Martha hit him over the head with the record.

Potsdam and Runner (2001, p. 456) also recognize this variation and provide a reasonable analysis by claiming that the CR predicates in (9–11) are used thematically, thereby differentiating them from the example shown in (2). According to Potsdam and Runner, there is no movement in (9–11); the matrix-subject is base-generated. Their evidence comes from idiom chunks

in the CR construction, as can be found in (12–13). Although some speakers do not like either of the examples, those surveyed unanimously agree that (12) is much more natural than (13). Considering the common wisdom that the fraction of the idiom chunk appearing in the matrix-subject position in (12) is indicative of the verb not assigning a thematic role (see Postal & Pullum, 1988), Potsdam and Runner's (2001) claim is justifiable. The epistemic verb *appears* in (13) does not assign a thematic role because the embedded clause contains the subject pronominal copy. In their analysis, the unacceptability of (13) is also straightforwardly explained: *appears* assigns a thematic role to the idiom fraction *the other foot*, because there is no subject pronominal copy. Therefore, *the other foot* receives two thematic roles, leading to the clash.

(12) The shoe appears like it is on the other foot.
(13) * The other foot appears like the shoe is on it.

That said, Potsdam and Runner's (2001) analysis leads to an incorrect prediction. Landau (2011, p. 801) rightly points out that, if Potsdam and Runner are right, both *your house* and *that noise* in (14) and (15) must be thematic because there is no subject copy in the complement clause in either example. Nevertheless, *your house* in (14) is not thematically related to *sounds*, while *that noise* in (14) is. In addition, the pronominal copy *it* is obligatory in (14), while (15) is felicitous without *it*. These differences cannot be explained in Potsdam and Runner's (2001) analysis.

(14) Your house sounds like nobody enjoys cleaning *(it).
(15) That noise sounds like somebody is cleaning.

To overcome the difficulties, Landau (2011, p. 787) proposes the Perceptual-source Copy Generalization (PCG). Simply put, PCG states that a copy is necessary in the complement clause if and only if the matrix-subject is not a P-source. Landau's PCG successfully differentiates (14) from (15). In (14), *your house* is not a P-source; so the pronoun copy is required. By contrast, *that noise* is a P-source in (15), which makes the sentence acceptable without a pronoun copy.[11] Here, we need to define exactly what P-source means in Landau. In all three examples in (16), the speaker makes visual contact with a stimulus. However, there are differences among the three. While the stimulus is unspecified in (16a), in (16b) it is the matrix-subject *John*. Landau calls this type of example a P-source reading. (16c) is different from the other two in that the visual stimulus is *the grade sheet*, not *John*, resulting in the matrix-subject's non-P-source reading.

[11] The notion of P-source was introduced earlier in Asudeh and Toivonen (2006, 2007). Their position is discussed in Section 3.2.

(16) a. It looks like John has failed the exam.
b. Here's John: oh, he looks like he has failed the exam.
c. Here's the grade sheet: oh, John looks like he has failed the exam.

There is no denying that Landau's (2011) analysis shows improvement over Potsdam and Runner (2001). Nonetheless, there are two important questions unanswered in Landau's approach. First, why does the notion of P-source play an important role in the CR? Landau's PCG can certainly make a distinction between (14) and (15), but why is a P-source crucial for the absence or obligatoriness of a pronoun copy other than theory-internal justifications?

Another challenge to Landau (2011) comes from the two examples borrowed from Heycock (1994, p. 292). In these examples, neither *that book* nor *her apartment* is a P-source, though both sentences are fully felicitous without a pronoun copy. Landau reports that his informants find (8) – re-introduced here as (17) – slightly problematic and (18) somewhat worse. Contra his report, the majority of our native speakers agrees that both are fully acceptable. Therefore, we conclude that these are indeed counter-examples to his PCG.

(17) That book sounds like everyone should own a copy.
(18) Her apartment sounds like there must be a wonderful view.

Landau is aware of this difficulty but he avoids detailed discussion of this issue by claiming that the examples are metonymic. He (2011, p. 794) states that "[t]he range and accessibility of metonymic readings, in various grammatical environments, is a topic in its own right, which we cannot delve into here". We believe this is unfortunate because metonymy is crucial in the CR construction, as demonstrated in later sections.

3.2. PR VERBS

While Rogers' earlier research (1971, 1972, 1973, 1974) does not make a clear distinction between epistemic and PR verbs, Asudeh (2002, 2005, 2012) and Asudeh and Toivonen (2012) do. The key criterion of their distinction is whether a copy pronoun is required in a complement clause. Consider (19a–b) from Asudeh and Toivonen (p. 324). The PR verbs in (19a) behave like epistemic verbs in that they can alternate with an expletive variant in (19b).

(19) a. Tina smells/looks/sounds/feels/tastes like / as if / as though she has been baking sticky buns.
b. It smells/looks/sounds/feels/tastes like / as if / as though Tina has been baking sticky buns.

The difference between the two types of verbs is illustrated in (20–21). According to Asudeh and Toivonen, while the epistemic verbs cannot occur without a copy pronoun, it is not obligatory for PR verbs.

(20) * Tina seems/appears like / as if / as though Chris has been baking sticky buns.
(21) Tina smells/looks/sounds/feels/tastes like / as if / as though Chris has been baking sticky buns.

We believe their observation is generally right. However, as several scholars (Kim, 2014; Potsdam & Runner, 2001; Rogers, 1971) have pointed out, it is not always straightforward to make a clear distinction between these two types of predicates. In particular, Kim provides a rich set of data extracted from COCA to illustrate ECR examples without pronoun copies. For example, as illustrated in (22–23), epistemic verbs may occur without a pronoun copy in a complement clause. These examples show that Asudeh and Toivonen's (2012) dichotomy is too strong.

(22) They seem as if a dragon hiding behind the cloud is drawing water from the sea. (<www.newscontent.cctv.com> last accessed 19 October 2015)
(23) She appeared as if the powers of life had been suddenly arrested. (Google Books, by John Inman & Robert A. West, *The Columbian Magazine* Volume 9)

Asudeh and Toivonen (2012, p. 341) are keenly aware of this problem and admit that certain speakers (Dialect D in their classification) accept sentences like (22–23). They argue that the epistemic verbs in these types of examples are used as a sort of "semantically bleached" PR verb. From the perspective of language change, the claim that the verbs *seem* and *appear* "gain" the perceptual resemblance meanings (albeit bleached) needs to be carefully assessed. In dealing with grammaticalization, Hopper and Traugott (2003, p. 94) state that "[t]here is no doubt that, over time, meanings tend to become weakened during the process of grammaticalization". It is clear that epistemic verbs exhibit less semantic complexity than PR verbs. We might expect PR verbs to become more like epistemic verbs, but not the other way around. However, the potential solution to explain (22–23) proposed by Asudeh and Toivonen (2012) assumes that the direction in the general grammaticalization cline is from epistemic to PR. Hopper and Traugott (2003) emphasize that this direction is not impossible, but this type of pragmatic enrichment is often observed in the beginnings of grammaticalization. Asudeh and Toivonen's (2012) claim thus remains unsatisfactory, unless there is clear justification to say that this type of change is in an early stage and accompanied by relevant pragmatic enrichment.

We support Kim (2014) by proposing that there is no critical difference between epistemic verbs and PR verbs concerning the optionality of a copy pronoun. Without respect to the type of a verb, the major function of examples (22–23) is to mentally access the embedded clause through the matrix-subject. Indeed, epistemic verbs are fully felicitous without a pronoun copy if the contextual information allows the interlocutor to access the embedded clause through the matrix-subject, which is the case demonstrated in (22–23).

3.3. EXPLETIVES

One interesting characteristic of epistemic verbs is that they can copy-raise expletives, with some limitations. For example, some speakers we surveyed do not accept (24), while others do. In a traditional movement-based analysis, (24) can be evidence for copy-raising the expletive *there*, because *there* is not usually compatible with *seems* without a copy expletive in the complement clause, as shown in (25). Rogers (1974) demonstrates that the copy of *there* must occur in the highest embedded subject position. If not, the sentence is not acceptable, as in (26). (27) illustrates that the expletive raising is also felicitous with the PR verb *looks*.[12]

(24) There seems like there is a problem in this linguistics department.
(25) * There seems like a lot of people are on the beach today.
(26) * There seems like John expects there to be an election.
(27) There looks as if there is a piece of evidence in this report to support the hypothesis.

In relation to *there*-raising, Kaplan-Myrth (2000, p. 3) reports that the number value of *there* between the two subjects must be identical, as in (28–29). Otherwise, the sentence is infelicitous, as shown in (30).

(28) There looks as if there is a problem.
(29) There look as if there are problems.
(30) * There looks as if there are problems.

Our survey data conflict with this judgment. Most of our survey participants rated (30) noticeably higher than (29), which they rejected.[13] In other words, the expletive *there* always takes a singular verb in the CR construction.

[12] We suspect that some PR verbs tend to be used as epistemic verbs. Examples like (i), where *look* is used in same environment as that of *appear* and *seem*, is readily observed in naturally occurring conversations.

(i) Mitch's father tells Terry he doesn't like how it looks that she's living with Stan. (www.imdb.com, last accessed 19 October 2015).

[13] While the mean score of (29) is 1.2, (30) shows a significantly improved mean score of 3.1.

Our observation suggests that the two expletives are not fully identical, although they are co-referential in the sense that the upper *there* cannot occur without the lower *there*, as illustrated in (25).

The co-referential requirement between the two subjects does not apply when the matrix-subject is *it*, as seen in (31) and (32). Similar to (25), (33) shows that *there* cannot occur in the matrix-subject position without its copy in the complement clause, even when the subject of the complement clause is *it*.

(31) a. It seems like there is a problem in this linguistics department.
b. It seems like it is raining.
(32) a. It looks/sounds like there is a problem in this linguistics department.
b. It looks/sounds like it is raining.
(33) * There seems/looks/sounds like it is raining.

This issue will be addressed in Section 5. In short, we will show that the expletive examples fully conform to other CR examples we have discussed thus far.

4. CR, SSR, and topicality

Now we would like to demonstrate how three related phenomena can be explained through reference-point: Copy-raising, Subject-to-Subject Raising, and topicality.

4.1. ECR AND SSR

We note that the epistemic verbs behave differently from PR verbs in a certain context. This is based on the observation that epistemic verbs readily alternate with the *it ~ that* construction, as shown in (34), while PR verbs tend to resist this alternation, as in (35). In this regard, the CR construction resembles SSR.[14]

(34) a. Mia seems/appears like she is leaving.
b. It seems/appears that Mia is leaving.
(35) a. Mia smells like she was in the chicken coop.
b. * It smells that Mia was in the chicken coop.

Let us consider (34a). This CR example is very similar to the SSR example (36), where *Mia's leaving* is located on the probability scale profiled by the epistemic verb. In terms of Langacker (1995, p. 32), the schematic process

[14] It is worth emphasizing that this is just a general tendency of PR verbs, and actual uses of these verbs might vary depending on speakers and their construals of a given situation.

indicated by *be leaving* in (36) is *Mia*'s active zone with respect to the scale. Therefore, SSR exhibits a discrepancy between profile (*Mia*) and active zone (the process), because what is located on the probability scale is not *Mia* (trajector), but the process (active zone). The same discrepancy is observed in ECR.

(36) Mia seems to be leaving.

One noticeable difference between SSR and ECR is the obligatoriness of a pronoun copy when the matrix-subject corresponds to the subject of the embedded clause in ECR.

(37) Mia seems like she is leaving.

To illustrate the differences between (36) and (37), first note that, in (36), the matrix-subject corresponds to the implicit subject of the embedded clause, exhibiting that the two entities are identical. Nevertheless, *Mia* in (36) is not a reference-point, at least not a prototypical one, because *Mia* does not have an overtly identified target.[15] Though the same correspondence relation applies in (37), *Mia* in this example is a reference-point in relation to its identified target *she*. In other words, in addition to the correspondence relation, a reference-point relationship is established in (37).

Viewing the relation between a full nominal and its corresponding pronominal as a reference-point/target relation is not surprising. According to van Hoek (1995, 1997), the special property of a pronoun is its self-identification as a reference-point. In this case, the reference-point itself is the easiest element to access among all those in its dominion. As a result, the reference-point (full nominal) and the target (pronoun) become co-referential. van Hoek argues that the likelihood of a nominal being invoked as a reference-point depends on its prominence, and the likelihood of an element being included in its dominion depends on the closeness of their conceptual connection. In (37), *Mia* is highly prominent by virtue of being a trajector of the process profiled by the clause that contains it. As a highly prominent entity, it is evoked as an antecedent for a pronoun. Here, *Mia* and the pronoun *she* are connected through the emergence of a coherent overall conception, e.g., the probability scale of (*someone*) *is leaving* is tightly associated with *Mia* under the given circumstance; thus *she* falls within the dominion of *Mia*.

The non-subject ECR examples in (38) are similarly explained, as the matrix-subjects and their corresponding pronouns exhibit the co-referential relations as a reference-point and target pair. The pronoun does not need to appear in the subject position because the fundamental function of this CR

[15] Note that a correspondence relation is not identical to a reference-point relationship.

construction is to establish a coherent connection between the matrix-subject and the corresponding pronoun.

(38) a. The lawn appeared as if someone had mowed it.
(COCA 1993 MAG, Kim, 2014, p. 169)
b. … the forest appears as if a tornado had passed over it.
(COHA 1850 MAG, Kim, 2014, p. 169)

On rare occasions, we observe that a pronoun copy can be omitted when the speech context provides relevant information and the target pronoun is not a subject. In a normal situation, for example, *someone had mowed* in (39a) is understood as *someone had mowed the lawn*. Similarly, *a tornado had passed over* in (39b) is understood as *a tornado passed over the forest*. If these are indeed acceptable, Asudeh and Toivonen's (2012) claim – that the epistemic CR construction requires a pronoun copy – needs to be reconsidered.

(39) a. The lawn appeared as if someone had mowed.
b. … the forest appears as if a tornado had passed over.

At this point, it is worth discussing how Kim's PCC accounts for examples like (39a–b). Kim argues that (40–41), cited from Lappin (1984) and Asudeh and Toivonen (2012), respectively, are unacceptable for reasons other than the lack of a pronoun copy: "[t]he fact that Mary is intelligent does not say any characteristic about Bill. Neither does Chris's baking sticky buns describe any characteristic about Tina" (Kim, 2014, p. 183).

(40) * Bill appears as if Mary is intelligent.
(41) * Tina seems like Chris has been baking sticky buns.

We fully agree with Kim's position. As shown in (39a–b), epistemic verbs are permitted in CR without pronoun copies if the matrix-subject can create a mental connection with the embedded clause. In other words, (39a–b) are acceptable because the matrix-subjects can function as reference-points in relation to their corresponding targets; i.e., embedded clauses.

The notion of reference-point is helpful in explaining two earlier examples re-introduced as (42–43). Idioms tend to maintain the trajector–landmark alignment. However, in the example *the other foot appears like the shoe is on it*, the original alignment of *the other foot* is altered due to its appearance in the reference-point position. The originally non-topical landmark, *the other foot*, is thus in an aboutness relation to the predication in (43) by being a reference-point trajector. (43) becomes infelicitous because focal arguments of idiomatic expressions are not permitted in positions in which they express what the information-structure literature refers to as switch topics – newly established topics (see Lambrecht, 1994; Lambrecht & Michaelis, 1998, for details).

(42) The shoe appears like it is on the other foot.
(43) * The other foot appears like the shoe is on it.

It is also worth discussing Mack's (2010) comparison of CR and SSR here. She states that "it is debatable whether SSR even constitutes a particularly appropriate comparison construction [to CR]" (p. 159). Her statement is based on the observations (pp. 179–180) in (44–45). In the CR examples (44), the bare nominals are obligatorily interpreted as specific (Lappin, 1984, p. 241). The same constraint does not apply to the SSR examples in (45), because the bare nominals in (45) can be interpreted either as *kinds* or existentially.

(44) a. Cows seem/look as if they are extremely intelligent.
b. # Cows seem/look as if they are grazing in Fred's field.
c. Sand seems/looks as if it is composed of tiny particles.
d. # Sand seems/looks as if it is blowing over the backyard.
(45) a. Cows seem to be extremely intelligent.
b. Cows seem to be grazing in Fred's field.
c. Sand seems to be composed of tiny particles.
d. Sand seems to be blowing all over the backyard.

We agree with Mack that ECR subjects are licensed to serve as topics. However, our opinions differ concerning the sharp demarcation between SSR and ECR. In her analysis, ECR, which contains a referential matrix-subject with a subject copy in the embedded clause, is ambiguous between an SSR-like interpretation and an ECR interpretation. The former is licensed by the SSCR construct, which is analogous to SSR, but the latter is licensed by the Topic Licensing (TL) construction. The major drawback of this demarcation is the difficulty of explaining examples like those in (46), which she herself admits (Mack, 2010, p. 193). In her analysis, the bare nominals in (46) must obey the type constraints imposed by TL, yielding their specific *kind* reading. Nevertheless, the bare nominals can also be licensed by SSCR, which is not a possible option in this case. She notes that "[she does] not presently have an explanation for why this should be the case" (p. 193).

(46) a. Cows seem like they're extremely intelligent.
b. A man from Hawaii sounds like he's the most popular candidate.

We argue that the different degrees of reference-point in SSR and ECR yield different predictions. The major function of reference-point is to provide the interlocutor with a mental address to reach the target. That is, the prototypical reference-point relationship establishes mental contact between two entities. In the CR examples in (46), both *cows* and *a man from Hawaii* exhibit this prototypical function of reference-point, because they contain their overtly

realized targets in the embedded clauses. This prototypicality strongly suggests that the bare nominals should be interpreted as topics. By contrast, the matrix-subject of SSR does not show the prototypical property of the reference-point because it lacks its profiled target. Nonetheless, the matrix-subject can still function as a reference-point by appearing in the prominent position. Owing to this non-prototypicality, the topicality of the matrix-subject is not strongly inferred. The unacceptability of (44b) and (44d) is unproblematically explained in our account as well. The matrix-subjects in these examples are prototypical reference-points, and they exhibit a high level of topicality, leading to a specific reading of the subjects. This reading, however, conflicts with the existential semantics of the complement, yielding infelicity.

The notion of prototypicality is important in explaining expletive raising. Although raised expletives are reference-points and they indeed correspond to their targets, they are not like the prototypical reference-point depicted earlier in Figure 1. As abstract settings, expletives themselves become their own dominions, rather than invoking a set of possible targets. This non-prototypicality blocks the topical interpretation of expletives.

4.2. CR AND THE EXTERNAL TOPIC CONSTRUCTION

The CR construction without a pronoun copy exhibits the properties of external topic constructions, as illustrated in (47). This is because the embedded clauses in (47a–c) can only be fully interpreted in relation to their corresponding matrix-subjects, which is also addressed by Kim's PCC (Kim, 2014, p. 183), introduced earlier.

(47) a. You smell like the Tube needs some cleaning.
b. Dan sounded like Germany won the 2014 World Cup.
c. Mr. Gunderson looked like the students didn't do their homework again.

Sentences (47a–c) contrast with (48a–c), where the context provided by the matrix-subject does not alter the interpretation of the embedded clause because the matrix-subject is anaphorically linked to its corresponding subject pronoun.

(48) a. You smell like you need to take a shower.
b. Dan sounded like he won the 2014 World Cup.
c. Mr. Gunderson looked like he didn't do the homework again.

We observe a similar pattern with non-subject CR constructions, as in (49). In (49a–c), the embedded clause can be readily interpreted without the context provided by the matrix-subject's dominion.

(49) a. You smell like Gina made an octopus dish for you.
b. Dan sounded like Germany won the 2014 World Cup for him.
c. Mr. Gunderson looked like his students didn't do their homework again.

For this reason, we propose that examples like (47) be analyzed as an external topic construction in which the matrix-subject is a reference-point with respect to the embedded clause. According to Langacker (2008, p. 504), "[b]eing a matter of sequential mental access, reference-point relationships are intrinsically dynamic but have no intrinsic content". Following this definition, the relational interpretation between the matrix-subject and the embedded clause is very flexible; the perceptual resemblance verbs used in (47) are interchangeable with each other.

Now we would like to revisit Landau's (2011) examples introduced earlier, which are renumbered as (50–51) for convenience. According to Landau, (50) is not acceptable without the pronoun *it*, while (51) is fully felicitous as it is (p. 794). His solution is that *your house* in (50) is not a P-source, whereas *that noise* in (51) is a P-source. Recall that his PCG states that a copy is necessary IF AND ONLY IF the matrix-subject is not a P-source. Since *your house* is not a P-source in (50), the copy is required.

(50) Your house sounds like nobody enjoys cleaning *(it).
(51) That noise sounds like somebody is cleaning.

However, Landau's PCG fails to explain some examples like (52a–c). Although the matrix-subject, *your house*, is not a P-source, the sentences seem to be acceptable.

(52) a. Your house sounds like nobody enjoys cleaning at this very moment.
b. Your house sounds like nobody is helping to clean right now.
c. Your house sounds like everybody helps with the cleaning.

This is because *your house* in (52a–c) functions as a reference-point in relation to the embedded clauses, where *your house* provides the context for apprehending and interpreting the propositions made by the complements. This is no different from the pivotless external topic construction, as in (53). The proposition in (53) can only be interpreted in the dominion of *the Oval Office* if it figures into its content.

(53) The Oval Office, I always thought I was going to have really cool phones and stuff. (President Obama's remarks at a DNC fundraiser, Chicago, 15 April 2011)

Then, why is (50) not acceptable without *it*? This is due to the difficulty in establishing a reference-point relationship between *your house* and *nobody*

enjoys cleaning. In (50), the speaker attempts to direct attention to *your house* for the specific purpose to make mental contact with *nobody enjoys cleaning*. However, without the pronoun, *nobody enjoys cleaning* is interpreted as a general statement. This genericity of *nobody enjoys cleaning* makes it hard for the interlocutor to establish mental contact with *your house*, rendering (50) unacceptable. By contrast, (51) does not pose the same problem, because *somebody is cleaning* can be interpreted with someone specific in the speaker's mind. Consequently, it is feasible to establish a reference-point relationship between *that noise* and *somebody [specific] is cleaning*, where the latter is accessed via the former. A closer examination also reveals that (50) can be rescued without *it*, when a more specific context is provided, as in (54).

(54) Your house sounds like nobody upstairs enjoys cleaning.
[Context: The speaker knows that the residents from the first and second floor of the addressee's house are supposed to be cleaning their bedrooms that day. While the ground floor is noisy with the commotion of cleaning, there is no noise emanating from above.]

These examples illustrate that the difference between (50) and (51) does not reside in the P-source interpretation of the matrix-subject. Rather, the difference is owed to the varying degrees of the conceptualizer's reference-point building capability.

5. Analysis

Moving from the impressionistic to the technical, we provide a full CG analysis of the CR construction in this section.

5.1. SUBJECT-TO-SUBJECT RAISING

Let us begin our analysis with an example of SSR. Langacker (1995) argues that raising, whether it be SSR, SOR, or OSR,[16] is a metonymic shift. For example, in the SSR sentence *Don is likely to leave*, the raising verb *is likely to* profiles a *thing* as its trajector, whose location on the probability scale is mediated by a process in which it participates. This schematic process is the trajector's active zone (p. 32). As a consequence, the raised noun phrase, *Don*, functions like a topic in that *Don* calls to mind a process involving *Don*. The CG diagram for this example is provided in Figure 2.

Figure 1, a typical example of SSR, demonstrates the discrepancy between active zone and profile. First, note that *Don* (D) in the left box corresponds to the trajector in the inside box of the middle box, as notated by the

[16] Langacker's OSR examples include sentences like *To like Don is easy*.

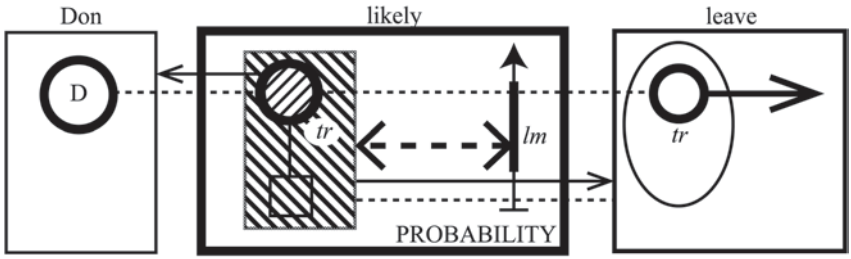

Fig. 2. *Don is likely to leave* (redrawn after Langacker, 1995, p. 32).

dashed line, which also corresponds to the trajector in the right box. Also note that the hatched rectangle in the middle box is elaborated by the right box (*leave*), and the trajector in the middle box is elaborated by the left box (*Don*).

Now, let us focus on the middle box to show the discrepancy. Here, what is profiled (note the thick line) in the hatched box is the trajector (*Don*), but the box (not the trajector) interacts with the probability scale. Then, as Langacker argues, SSR exhibits a case of profile/active-zone discrepancy.

5.2. THE CASE OF ECR

The epistemic CR examples with a pronoun copy exhibit a great similarity to those of SSR. Figure 3 shows the CG diagram for the sentence *Deandre seems like he is leaving*. The only noticeable difference between Figure 2 and Figure 3 is observed in the right box. As a schematic preposition,[17] *like* invokes a relationship between two entities and places the landmark on the probability scale, which corresponds to that profiled by *seems*. The implicitly invoked trajector of *like* corresponds to the trajector of the clause *he is leaving*, where *he* is a target of the reference-point subject *Deandre*. Similar to SSR, this CR example illustrates a profile/active-zone discrepancy in that the trajector's (*Deandre*) probability scale (*seems*) is mediated by the process (*he is leaving*) in which *Deandre* also participates as a trajector; the process (*he is leaving*) is an active zone in this case.

Next, let us consider the example *Darin seems like Jared hit him*, the diagram of which is provided in Figure 4. Figure 4 is identical to Figure 3 except that the reference-point relationship is established between *Darin* and the landmark of the relationship profiled by *hit*. Consequently, the

[17] Typical prepositions are represented as a relationship between a *thing* and an entity. Perhaps this more schematic type of structure for *like* and *as if/though* is what led some scholars (Bender & Flickinger, 1999) to categorize them as something other than prepositions.

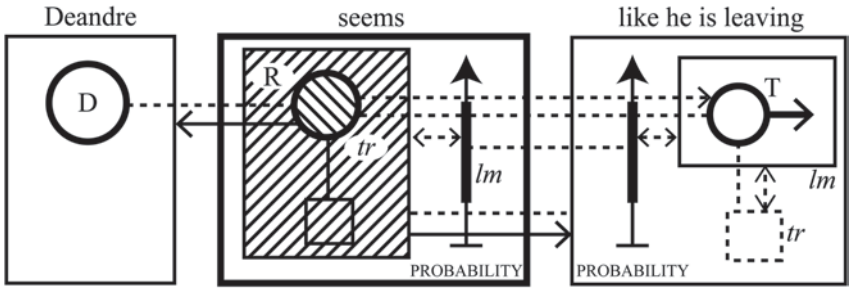

Fig. 3. The CG diagram for *Deandre seems like he is leaving*.

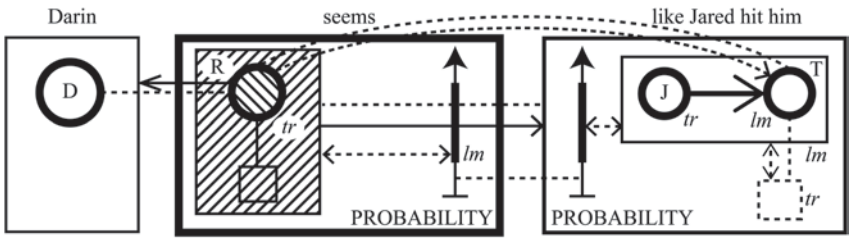

Fig. 4. The CG diagram for *Darin seems like Jared hit him*.

implicit trajector invoked by *like* corresponds to the landmark of the *hit*-relationship.

We have shown that the examples of ECR with pronominal copies are similar to SSR, particularly in the sense that both of them show a case of profile/active-zone discrepancy. The unique property of CR is an additional reference-point relationship established between the matrix-subject and a *thing* (whether it be a trajector or a landmark) profiled in the *like*-clause.

5.3. THE CASE OF THE PR VERBS

Figure 5 shows the CG diagram for the sentence *Derrick sounds like he is playing guitar*. The right box is identical to that of Figure 3 and Figure 4. However, the middle box that characterizes *sounds* is different from *seems*; *sounds* does not invoke a probability scale, and this construction does not exhibit a profile/active-zone discrepancy.

In Figure 5, the trajector of *sounds* (*Derrick*) corresponds to the trajector (*he*) of *is playing*, and both of them are anaphorically linked, where *Derrick* is a reference-point in relation to *he*. Just like Figure 2, the implicitly invoked trajector of *like* corresponds to *he*. Finally, the landmark of *sounds* is elaborated by the *like*-clause.

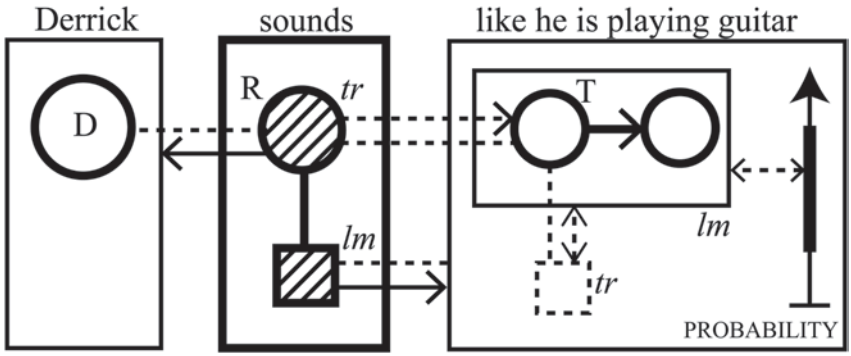

Fig. 5. The CG diagram for *Derrick sounds like he is playing guitar*.

We are also interested in PR verbs without a pronominal copy, such as *Erica sounds like Jean cooked salmon*. The CG diagram for this sentence is provided as Figure 6. The crucial difference between Figure 6 and Figure 5 is the matrix-subject's reference-point role. While *Derrick* is a reference-point in respect to a *thing* in Figure 5, *Erica* is a reference-point in relation to (*x sounds like*) *Jean cooked salmon*,[18] where *x* corresponds to *Erica*. This is because the implicitly invoked trajector of *like* does not correspond to *Jean* or *salmon* clause-internally. Instead, it corresponds to the trajector of *sounds* clause-externally. As a result, the preposition *like* establishes a relationship between the clause *Jean cooked salmon* and its trajector, *Erica*. This correspondence enables the conceptualizer to interpret *Jean cooked salmon* within the dominion of *Erica* via the given auditory stimulus, yielding a rough paraphrase like 'Considering how Erica talks, (I guess) Jean cooked salmon'. The clause *Jean cooked salmon* is interpreted within the dominion of *Erica*: precisely the function of the external topic construction.

Now, let us revisit Heycock's example, re-introduced as (55), which Landau treated as an anomaly or something that does not fall within the purview of his research.

(55) That book sounds like everyone should own a copy.

In our analysis, the metonymic nature of *that book* is naturally explained. Just like Figure 6, *that book* in (55) is a reference-point in relation to (*x sounds like*) *everyone should own a copy* with a rough paraphrase like 'As for that book people are talking about, (I believe) everyone should own a copy (of it)'.

[18] *x sounds like* is within parentheses because the real target of *Erica* is *Jean cooked salmon*, due to the correspondence depicted in Figure 6. What *sounds* does is to mediate *Erica* and *Jean cooked salmon* so that the conceptualizer interprets the depicted event as one which is inferred indirectly.

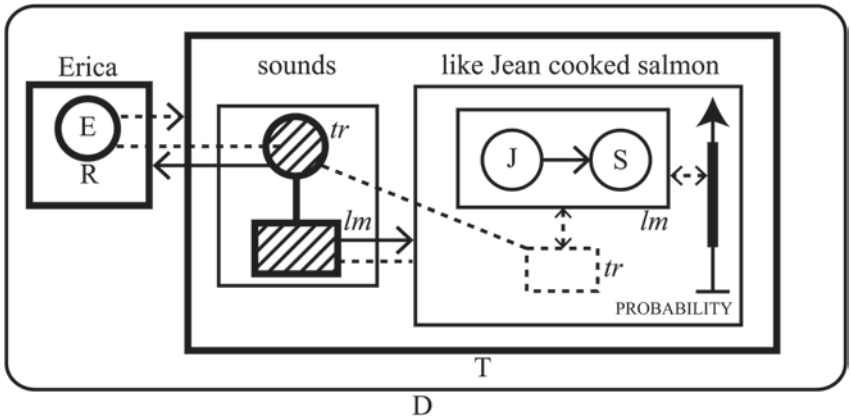

Fig. 6. The CG diagram for *Erica sounds like Jean cooked salmon*.

The reference-point phenomenon can facilitate a referential shift when the phenomenon is metonymic in nature. In (55), *that book* illustrates a referential shift from content to physical tome. Though being a reference-point does not guarantee a referential shift,[19] the metonymic reading of (55) is quite expected in our analysis due to the inherent connection between metonymy and reference-point. In fact, "metonymy is basically a reference-point phenomenon" (Langacker, 1993, p. 30).

5.4. EXPLETIVES AND SETTING SUBJECTS

Before we present our analyses of the expletives, we would like to illustrate the characterization of *there* (Langacker, 1991a, pp. 351–355). Langacker suggests that *there* and the *be* verb be treated as an integrated unit based on example (56). In this example, "*people* is not the logical subject of *say* but only of *dance,* yet the main clause verb is plural" (p. 354). Nonetheless, the choice of the number value is plural in this case. As Langacker briefly notes, it seems that *there* undergoes a semantic extension to be construed as a special type of plural. This is because multiple participants are involved in the situation described in (56).

(56) There are said to be people dancing in the streets.

The schematic CG diagram for *there* is shown in Figure 7. Here, *there* designates an abstract setting construed as hosting some relationship represented by the

[19] Defining metonymy, reference-point, and zone activation is a topic on its own, for which there is an ample amount of research. Please refer to Geeraerts and Peirsman (2011), Paradis (2004), and Ruiz de Mendoza Ibáñez (2000, 2011), among others.

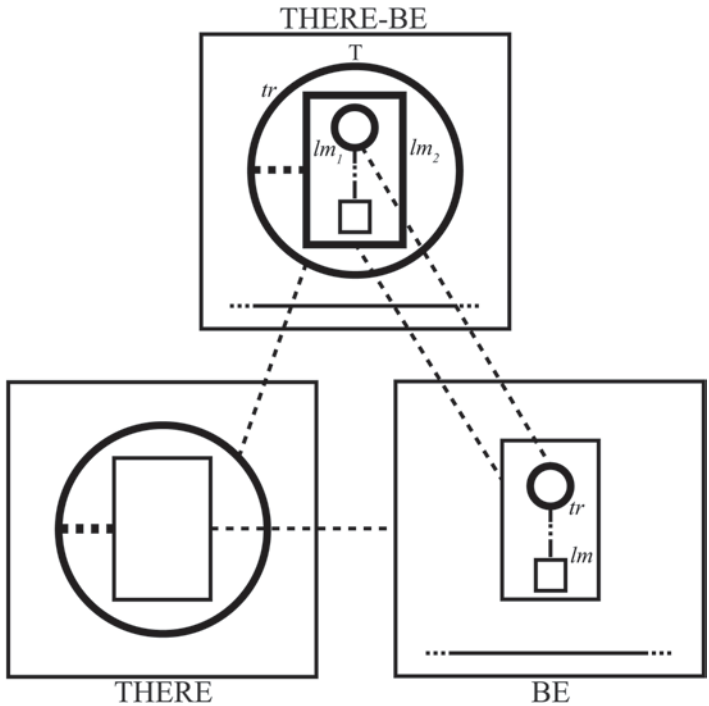

Fig. 7. The characterization of *there be* (redrawn after Langacker, 1991a, p. 353).

dotted line inside of the circle in the bottom left box. This corresponds to the relationship profiled by *be* as shown in the bottom right box. In the composite structure, illustrated in the top box, we observe the shift in focus, resulting in the trajector status conferred on the setting.

Based on Figure 7, Figure 8 illustrates the CG diagram for the sentence *There seems like there is a book*. In the right box of Figure 8, *there* acquires an abstract setting subject status, and it corresponds to the implicit trajector of *like*. The left box illustrates *seems*, which is almost identical to that of other previous examples. As shown in the right box, *there* shifts to the setting subject, which in turn corresponds to the trajector of the matrix-subject. As a setting subject, the trajector of the matrix clause does not have to be elaborated by another *thing*; the setting subject status fills the need for a subject. This is why the copy of *there* is permitted only in the subject position; this is where maximally generalized settings appear.

Our analysis correctly predicts the unacceptability of (57–58). In (57), while *there* is a setting subject, *in the street* is a location, which is part of a setting (Langacker, 1991a, p. 300). Therefore, the correspondence relation

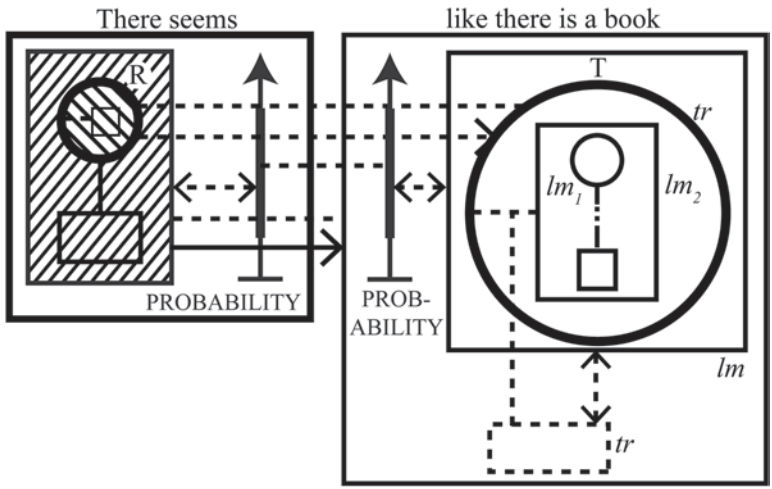

Fig. 8. The CG diagram for *There seems like there is a book*.

cannot be established between the two. Note that the reference-point and the target are anaphorically linked in the CR construction. (58) is unnatural due to the 'depth' of the correspondence. The upper *there* corresponds to the *there* in the 'deepest' clause.

(57) * There seems like people are dancing in the street.
(58) * There seemed like John said there were people dancing in the street.

Another expletive, *it*, is illustrated in Figure 9. The expletive *it* also functions as a maximally generalized setting subject in this case, while *there* denotes a thing-like property. Figure 9 is almost identical to Figure 8. The only difference is the lack of the correspondence relationship between the trajector of *seems* and the trajector of the *like*-clause. Instead of corresponding the two trajectors, the strategy adopted here is to confer the trajector status to the entire setting, which is very close to sentences like *it is raining* and *it's hard to finish this paper*, etc. For this reason, sentences like *it seems like there is a book* are no different from *it seems like John is happy*, etc.

Then, why is a sentence like *There seems like it is raining* unacceptable? This is because, as a *thing*-like setting subject, *there* (notated by a circle) needs a target, which is the property of the CR construction. However, as a maximally abstract setting subject without a referential identity, *it* fails to be *there*'s target. The rescue mechanism is to replace *there* with *it*, yielding *it seems like it is raining*, where two instances of *it* acquire their setting subject status independently, without requiring any referential identity.

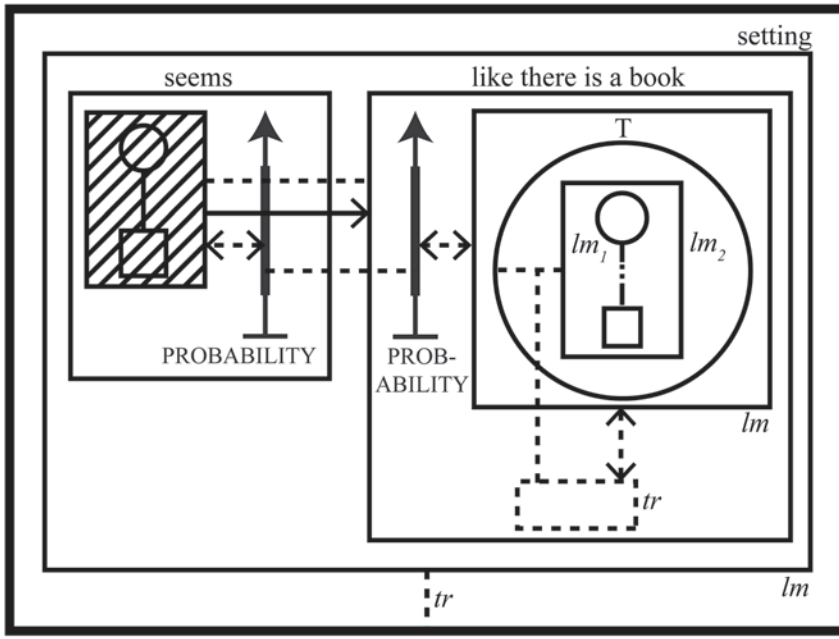

Fig. 9. The CG diagram for *It seems like there is a book*.

The maximally abstract setting subject status of *it* makes sentences like (59–61) acceptable in an informal context.

(59) You should eat the relevant pages. Seems like you'd get more of the test material in you that way. (COCA 2012 FIC)
(60) "Is he all right?" the girl said. "Appears like it," Raymond said. (COCA 1998 FIC)
(61) And he was in there. He was talking on the phone. Sounded like he was talking to Susan. (COCA 2010 SPOK)

The expletive *it* cannot be used as a reference-point to any *thing* target, nor can it build an anaphoric link with its pronominal form. What it does is to provide a setting which the participants occupy. Consequently, the setting is often contextually understood without its explicit grammatical realization.

6. Conclusion and summary

We developed a CG analysis of the CR construction and demonstrated that reference-point plays a crucial role in licensing the matrix-subject of CR, whether the CR verbs are epistemic or perceptual resemblance. In this sense,

our approach can be considered a single-licensing mechanism, distinct from the majority view of a dual-licensing mechanism.

We demonstrated that the ECR construction with pronominal copies exhibits great similarities to SSR in that both of them involve a typical profile/active-zone discrepancy. The differences between the two cases are symptomatic of the different degrees of reference-point manifestation. Since CR shows a prototypical reference-point relationship, the matrix verb of CR requires an aboutness topical reading. The same does not hold true for SSR, because the matrix-subject of SSR is a not prototypical reference-point. We extended our analysis to CR constructions containing PR verbs, demonstrating that they are not crucially different from those with epistemic verbs concerning the optionality of pronominal copies. We also demonstrated that expletive raising need not be treated separately as a purely syntactic mechanism, because the lack of topicality of the matrix-subject in this case is a natural consequence of expletives' setting subject nature.

Throughout this paper, we illustrated that our analysis explains a wider range of data without positing additional assumptions or mechanisms. Moreover, we argued that examples treated as marginal cases by previous researchers, such as possible metonymic interpretations of these constructions, are at the heart of the CR construction and are naturally explained in our analysis.

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Cognitive Grammar and English nominalization: Event/result nominals and gerundives

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Abstract: This article develops an analysis of event/result nominals and gerundives from a Cognitive Grammar perspective. By reviewing the previous research, we first point out that these phenomena are much more flexible than the extant research claims. Moreover, widely accepted generalizations concerning the phenomena are, at best, only partially true. We demonstrate that the said flexibility is ascribed to two different types of construals: [1] mass-like construal accompanied by reification and [2] zone-activation or metonymic shift. Event nominals arise, without respect to the types of the nominal affixes, when the relationship profiled by a verb takes an internal perspective. Result nominals arise through zone activation or metonymic shift in addition to the reification of the verbal base. Several grounding strategies apply to both event and result nominals, thereby yielding different realizations of instances such as (in)definite and possessive. We show that our analysis can be systematically extended to gerundives, which permit limited grounding methods. We also demonstrate that V-to-N converted event nominals are accounted for unproblematically in our analysis because the rise of event nominals does not rely on the nominalizing affixes.

Keywords: Cognitive Grammar, event nominals, gerundives, grounding, result nominals

1 Overview

The relationship between affixes and the argument structure of event nominals such as *assignment* and *examination* in (1) has puzzled researchers for decades.

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(1) a. *The constant **assignment** of unsolved problems is to be avoided.* (Grimshaw 1990: 50)
b. *The instructor's **examination** of the papers took a long time.* (Grimshaw 1990: 51)

Over the course of time, two main approaches to this issue have emerged: the structural model and the event-based model. In the structural model (Alexiadou 2001; Borer 2005, 2014; Embick 2003; Marantz 2001), the presence of argument structure is attributed to the existence of a VP within the nominal structure. This approach stipulates that exponents such as *-ing*, *-(a)tion*, and *-ment* express nominal categories, but they are different with respect to the height of affixation; the higher the affix is in the structure, the more verbal properties the derived noun exhibits. The *-ing* targets a high position, resulting in event nominals, while the V-to-N conversion occurs at the root level. As a result, conversion does not exhibit argument structure, because it does not contain verbal projections. Other affixes such as *-(a)tion* and *-ment* can be attached either to the root or at a higher position.

By contrast, the event-based theory (Grimshaw 1990, 2004) assumes that the presence of argument structure in a nominal is the consequence of the existence of an event structure in its base verb. The grammar, then, stipulates that some affixes preserve the verbal property of having argument structure while others do not. Despite many differences concerning matters of implementation, both models assume that there is a tight connection between argument structure and affixes. That is, nominalizing affixes are somehow responsible for the derivation of event nominals.

We challenge this view by arguing that the connection between the two is more loose than the previous models assumed; affixes do not even have to be present in the derivation of event nominals. The theoretical framework we adopt is Cognitive Grammar (CG) developed by Langacker (1987b, 1991, 2008, 2009). What we propose is that these seemingly sharp delineations concerning argument structure and affixes are merely symptomatic of the fundamental function of deverbal nominalization – construing the verbal relationship from the internal perspective, in the sense of CG. We argue that deverbal nominalization comes to light via two different types of construals: [1] mass-like construal accompanied by reification and [2] zone-activation or metonymic shift. When the base event structure (a relationship) takes an internal perspective, the relationship is construed as mass-like and homogeneous. The relationship is construed as an unbounded event as a direct result of the internal perspective. At the same time, this perspective makes it possible to preserve the relationship between two entities, resulting in nominals with base-verbal arguments.

The other possible construal is to use the speaker's zone-activation or metonymic shift ability. For example, though the profiled portion of *destruction* in (2) is the landmark of the relationship, the whole reified relationship (active zone) corresponds to the trajector of the predicate *was awful to see*, exhibiting a profile/active-zone discrepancy. Since the profiled portion is a thing (noun), it is devoid of argument structure and is construed as a result nominal.

(2) *The **destruction** was awful to see.*
(Grimshaw 1990: 52)

If this is the case – and we argue that it is – the result nominal devoid of argument structure is not a "semantic side effect" occurring when event nominals' mass-like properties are altered to those of count nouns, as suggested by Harley (2008: 339). Rather, result nominals lacking argument structure are just a common product of our conceptual and linguistic system.

In some sense, our view is a reflection of Alexiadou (2008) and Harley (2008), both of whom recognize the importance of the mass/count distinction in dealing with event nominals. The gist of their claims is that event nominals are similar to mass nouns, while result nominals are like count nouns. That said, we believe their approaches are somewhat inconclusive and speculative without providing the motivation behind the creation of a mass noun from a verbal base. More importantly, contra the authors' claims, we demonstrate that event nominals can be used as count nouns as illustrated in (3),[1] where they are modified by temporal adjectives and presented with argument structure.

(3) Count noun use of event nominals
   a. *These findings suggest that gallstones are **a frequent late complication of heart valve replacement**.*
   (*American Heart Journal* 1978)
   b. *[...] application of the control pressure [...] produced a gradual rate of deformation (creep), probably caused by **a continuous removal of water** from the interstitial spaces as mentioned above.*
   (*Journal of Rehabilitation Research and Development* 1999)
   c. *European civilization was portrayed as **a continuous development of one civilization**, whereas Asian histories emerged inert and isolated, as if they had been the debris of an atomic bomb, showing no continuous development.*
   (*Social Studies* 2003)

1 These examples are extracted from the Corpus of Contemporary American English (Davies 2016).

d. *Further analysis of these sequences [...] showed evolution of these genotype B strains over time, which resulted in a ladder-like structure, suggesting* ***a continual replacement of lineages*** *over the study period*. (*Emerging Infectious Diseases* 2013)

These examples strongly suggest that the claim that the function of deverbal nominalization is to create a mass noun from its base verb is only a partial story. The intermediate stage of event-nominal creation indeed exhibits mass noun-like properties due to the imposed internal perspective. Yet this stage does not produce full nominals, lacking a grounding element, such as *the, this*, or *that*. The deverbal nominalization is completed upon the application of the grounding mechanism. We further demonstrate that the *-ing* nominals are parallel to deverbal event nominals in that they, too, need to be grounded to be full nominals, whether it be overtly or covertly.

Our view is compatible with Langacker's (1991, 2008) and Heyvaert's (2000, 2008). Langacker (1991) provides foundational CG work on gerundives, and Heyvaert (2000, 2008) further develops Langacker's ideas. However, as is often the case for most research, their work still can be improved upon to capture a wider range of data. For example, just as Grimshaw (1990) does, Langacker (1991: 25) suggests that *-ing* nominals are mass nouns and cannot be pluralized; we find this to be too strong a statement. More importantly, neither Langacker (1991) nor Heyvaert (2000, 2008) provide analyses of gerundives in conjunction with event nominals, leaving event nominals a lesser-examined topic within CG. We believe examining the work done by both formal and cognitive linguists helps enhance our understanding of the phenomena.

As for the data used in this article, most of the examples are extracted from COCA (The Corpus of Contemporary American English, Davies 2016) unless otherwise specified. As such, we attempt to provide the context as much as we can, with the belief that speech contexts provide a better understanding of the data. Concerning the terminology, different scholars use different terms in dealing with nominalization, often leading to unnecessary confusion. To avoid this, we will streamline the terms used in this article. Six distinct terms will be used to describe the phenomena provided in (4–9). Respectively, they are event nominal, result nominal, *ing*-OF gerund, POSS-gerund, ACC-gerund, and subjectless-gerund. When needed, the last three will be grouped together under the term *clausal nominalizations* or *clausal gerundives*.

(4) Event nominal: ***The examination of the child's literary works****, written over a period of four years, allows for invaluable insight into the sensitivities of a growing precocious child*.
(*Report Review* 2004)

(5) Result nominal: *"Yes, Ms. Bradbury?" "Is this going to be on **the exam**?" Schonfield scowled.*
(*Analog Science Fiction & Fact* 2009)

(6) *ing*-OF gerund: *Do you think **the killing of this Jordanian pilot** could somehow backfire here?*
(*CBS 2015*)

(7) POSS-gerund: *I never tired of seeing their awe at **my performing** the simplest tasks.*
('*Til the Well Runs Dry* 2014)

(8) ACC-gerund: *I imagine **him performing these jobs defiantly**, daring dangerous molecules to trespass his flesh, inviting them to step outside and trade blows.*
(*The Kenyon Review* 2005)

(9) Subjectless-gerund: ***Playing the guitar** is weird. When your hand comes up the neck, the whole guitar takes off sideways because the guitar is actually just floating in front of you.*
(*Science News* 2013)

This article is organized as follows. Section 2 discusses some challenges the two competing models face. Section 3 demonstrates how our construal-based semantic approach overcomes the difficulties left by previous models. Section 4 is devoted to clausal nominalizations with emphasis on their difference from *ing*-OF gerunds despite certain similarities. Section 5 discusses how the two cognitive linguistic notions, metonymy and zone activation, can be utilized to account for the rise of result nominals from relations and processes. Section 6 concludes this article by providing a summary of different types of nominalizations and their conceptual structures.

2 Challenges

Alexiadou and Grimshaw (2008: 4) provide a core set of generalizations concerning event nominals.

(10) Generalizations of event nominals
  a. Only nouns which are related to corresponding verbs have argument structure.
  b. Nouns that are identical in form to verbs do not generally behave like complex event nominals.

c. *-ing* nominals are always complex event nominals
d. *-(a)tion* and *-ment* nominals are frequently ambiguous between eventive and non-eventive (result) readings.

Generalization (10a) is based on examples like **my car for three weeks*, where *car* does not exhibit an event structure due to the lack of a verbal base. (10b) states that V-to-N conversions cannot be used as event nominals as shown by **my kill of the time*. As in (10c), *-ing* nominals are transparent to their verbal base and can take obligatory arguments. (10d) is based on an observation like *the examination of the patients took a long time* vs. *the examination was on the table*. While *examination* in the former denotes an event structure of the base verb, *examination* in the latter simply refers to the result of an event.

Of these four generalizations, (10a) is unproblematic. In English, argument-bearing nominals are derived from verbs, preserving their base event structures. However, the other three generalizations pose significant challenges to the two models addressed above.

2.1 Conversion with event structure

Let us begin our discussion with the second generalization described in (10b). Neither model we discussed earlier, the structural model and the event-based model, allows V-to-N conversions as event nominals. In the event-based model, the preservation of the base event structure is mediated by affixes. These nominals cannot have an event structure, then, simply because they are affix-less. The handling of the case of conversion becomes more complicated in the overall structural model. In her exo-skeletal model – one type of structural model – Borer (2003, 2005, 2014) argues that conversions arise by merging the root verb with a functional head to directly transform it into a nominal, which is a derivation process that does not produce argument-bearing nominals. Another structural model, distributed morphology (Alexiadou 2001; Embick 2003; Halle and Marantz 1993; Harley 2008; Marantz 2001), assumes that V-to-N conversions must already contain all they need to denote complex events. The infelicity of the eventive reading of result nominals is then attributed to the "packager" à la Jackendoff (1991). When the conversion occurs, the packaging head imposes a boundary on the conversion, yielding a resultative count noun.

Nevertheless, V-to-N conversions can be used as event nominals, as illustrated in (11a–g). These examples are re-cited from Bauer et al. (2013: 208).

(11) V-to-N conversion with event structure

a. *Last year, just before the 50th anniversary of* ***Sir Edmund Hillary's climb of Mount Everest****, the Sherpas wanted to put up an Internet café at 18,500 feet, base camp on Everest.*
(*Denver Post* 2004)

b. *Technically, in Pennsylvania, you only have to have one license plate on your car, so the officer was improper on* ***his stop of this car****, but while he stopped the car, he observed in the back seat over 200 pounds of cocaine.*
(*PBS_Newshour* 1995)

c. *But, of course, the fact that he was involved or may have been involved in that robbery two weeks before the crime doesn't really support* ***his murder of your mom*** *two weeks later.*
(*Ind_Geraldo* 1992)

d. ***Bolivia's swap of $650,000*** *is tiny in comparison to the overall commercial debt of $500 million.*
(*Environment* 1990)

e. *We need to learn to understand our technological behavior as* ***a constant blend of these very different modes of consciousness****.*
(*American Heritage* 1998)

f. *If you often or sometimes have any of the symptoms listed below, see your doctor to have your breathing checked; [...] Bouts of coughing unrelated to colds or* ***the frequent spread of any symptoms*** *to the chest when you do have a cold.*
(*Consumer Reports* 2007)

g. *"[...] I can smell a skunk that was killed, and I know how many hours before it was killed," he said, in a conversation punctuated by* ***the frequent crash of beer empties*** *in a trash can behind the bar.*
(*San Francisco Chronicle* 1991)

There is no denying that the conversions in bold in examples (11a–g) are interpreted eventively because they display full argument structure and/or can be modified by temporal adjectives like *constant* or *frequent*. Based on Smith's (1972) report about conversions, Grimshaw (2004) argues that Germanic-origin V-to-N conversions never preserve the original verbs' event and argument structures. According to her, because Germanic verbs nominalize only through zero affixation, Germanic-origin conversions cannot be complex event nominals. However, though the base verbs of all conversions in (11a–g) are indeed of Germanic origin, the conversions are all event nominals with full argument structure. This phenomenon is not limited to the few nominals described

above. Rather, it is a widespread phenomenon, and for this reason, the event-based model faces a serious challenge.[2]

These examples pose an issue for the structural model as well. Conversions with argument structure are not permitted in Borer's exo-skeletal model because the height of the conversion in the tree structure is too low to contain event structures. Albeit similar to the exo-skeletal model, it seems that Distributed Morphology (DM) can handle this issue by positing two zero affixes: one in relation to a result interpretation of the conversion, and the other for an eventive interpretation. However, many scholars warn against the use of a zero form without rigid justification. For example, Pullum (1991: 775–776) suggests that null constituents should not be utilized unless they meet the criteria laid out in (12).[3]

(12) Three conditions for positing phonologically null constituents
   a. The empty category is syntactically bound to another constituent in an unbounded dependency construction (i.e., extraction trace).
   b. The empty category is anaphorically linked to another constituent (i.e., null anaphor or controlled PRO).
   c. The empty category is associated with independently justifiable semantic content (e.g., a construction-specific semantic rule such as $[_{NP}$ *the rich* $[_{N} \oslash]]$.

The potential DM solution does not meet any of the three criteria for its use of a zero affix, yielding a less-appealing analysis in our evaluation. In fact, though working in a similar framework to DM, Borer (2014) provides a strong set of arguments against zero affixes. We will not delve into the details here, but what she argues in evaluating DM is that there are no zero realizations categorically equivalent to *-(a)tion*; i.e., conversion is not a result of a zero derivation. The theoretical framework we adopt in this article is, of course, drastically different from Borer's. Nonetheless, we see a great similarity between CG and Borer's model in this particular claim. We don't need category-altering zero affixes for the process of nominalizatin in English. Given the conceptual content of a certain entity, its category would have to be contextually determined through interlocutors' construals. This is the position that both Borer and CG agree upon.

2 Newmeyer (2009) also discusses that zero-derived nominals can have argument structure. He attributes this behavior of V-to-N converted nominals to the historical development of the vocabulary of English.

3 Of course, from a CG perspective, the question emerges whether a zero element should be posited at all. For example, even Pullum's justifiable case of positing the empty category (12c) can be avoided by assuming a simple conversion pattern.

2.2 On the ambiguity of the affixes

Alexiadou and Grimshaw's (2008) generalization (10d) poses some challenges as well. First, the structural model assumes that the affixes *-(a)tion* and *-ment* are underspecified. As a result, it can be stipulated that these affixes occur in both root and outer cycles. Setting aside some potential theoretical problems with this type of analysis (see Embick 2003), this two-cycle approach does not address the reasons why this widespread ambiguity exists. Against the underspecification approach, Grimshaw (2004) proposes that the apparent ambiguity is due to the two-step nominalization. An event nominal is created by the affixation of *-(a)tion* or *-ment* (Step 1 – partial nominalization) followed by a null affixation (Step 2 – full nominalization) that wipes out the event structure properties of the base. These affixes are neither ambiguous nor underspecified; the affixes are always complex event nominalizers.

We are not sure if Grimshaw's two-step nominalization approach is crucially different from the structural model's two-cycle approach. Additionally, positing another layer of zero affixation on top of the complex event nominal structure is hard to justify because the zero affix is neither semantically contentful nor syntactically bound. Moreover, we are not sure how the elimination of the internal event structure operates in Step 2. Even if we assume that Grimshaw's approach is justifiable, we cannot explain why the zero affix cannot be attached to *-ing* nominals to derive a result nominal.[4] Alexiadou and Grimshaw are aware of this weakness, and they acknowledge that neither the event-based nor the structural model answers the question of why only these affixes allow two-step nominalizations. As it turns out, these affixes are not that special; other affixes including *-ing* also allow "two-step" nominalizations.

As will get clearer in Section 5, our position concerning the ambiguity of nominalizing affixes is that the two interpretations of these affixes are not associated with their structural properties, i.e., affixation at different cycles or two-step nominalization. Rather, they are due to the metonymic shift in nominalization or the speaker's zone activation ability. It should be clear that we are not assuming that metonymy comes about by attaching an affix to its base on the syntagmatic axis; suffixations are not the result of metonymic operations. What we are assuming is, as Panther (2005) and Brdar and Brdar-Szabó (2014) argue, metonymy is a paradigmatic operation.

4 Note that *-ing* nominals can be used as result nominals, as will be discussed in Section 2.3.

2.3 *On* -ing *event nominals and gerundives*

Alexiadou and Grimshaw's (2008) generalization (10c) is roughly accurate in that the *-ing* affix preserves the event structure. In a different piece of work, Grimshaw (1990: 56) firmly states that "... the nominal *-ing* affix is unambiguous. [... *-ing* nominals] allow only the definite determiner, never are pluralized, and never occur predicatively" as illustrated in (13).

(13) a. ***The shooting of rabbits*** *is illegal*.
(Grimshaw 1990: 56)
b. * ***A/one/that shooting of rabbits*** *is illegal*.
(Grimshaw 1990: 56)
c. * ***The shootings of rabbits*** *are illegal*.
(Grimshaw 1990: 56)
d. * *That was* ***the shooting of rabbits***.
(Grimshaw 1990: 56)

However, Grimshaw's statement is too strong, since *-ing* nominals allow the indefinite determiner and occur predicatively. This is shown below, taken from Borer (2005).

(14) a. *There was* ***a capsizing of a boat by Mary***.
(Borer 2005: 78)
b. *There was at least* ***one pushing of the cart to New York by John***.
(Borer 2005: 78)

Our corpus/internet search further shows that the patterns illustrated in (14) are widespread, as shown with some additional examples in (15).[5]

(15) a. *"This" was bamboo splinters under the nails. "This" was* ***a beating of the knuckles***.
"This" was being strung up by the wrists.
(*Atlantic* 1993)

5 Similar to Grimshaw (1990), Langacker (1991: 25) suggests that *-ing* nominals are mass nouns because they cannot be pluralized as shown in * *My cat does several* ***sleepings*** *every day*. However, we find this type of general claim too strong because *-ing* nominals can be pluralized in a certain context as shown in *Since it is polyester, will it be slippery? Will the blankets still stay put? Will the top sheet remain tucked in during sleeping or several* ***sleepings****?* (Amazon.com review).

b. *For example, every two hours there was **a feeding of one and a half ounce of formula**, and I took up the job for almost a year before I realized that I was close to a nervous breakdown.*
(Google Books: *Families Living with Chronic Illness and Disability* 2004)
c. *On the second day, there was **a tasting of microbrews**, including Anchor, Liberty Ale,*
Samuel Adams, and Allegheny Cream.
(*Denver Post* 1997)

Borer's (2005) position concerning the examples in (14) is that Grimshaw's statement is correct for atelic argument-bearing nominals, but not for telic argument-bearing nominals.[6] Relying on previous research (Borer 2005; Cappelle and Declerck 2005; Filip 1996; Jackendoff 1991; Krifka 1992; Verkuyl 1993), Alexiadou (2008) also proposes that the problem of pluralization of argument-bearing nominals has to do with unboundedness; plurality, unboundedness, and mass nouns are all related. She (Alexiadou 2008: 279) proposes this generalization in (16), stating that pluralization can apply to bounded nominals to yield unbounded nominals, which is the function of pluralization. Since nominals derived from the verbs of unbounded events are like mass nouns, pluralization cannot apply.

(16) a. Count nouns are similar to bounded events.
b. Mass nouns are similar to unbounded events.

Though this is indeed true, Alexiadou's generalization is far from being novel. Langacker's CG (1987a, 1991, 2008) provides in-depth discussion on significant parallels between nouns and verbs as well as between nominals and finite clauses. The reason the examples of our own creation, (17a–b), are not acceptable is relatively straightforwardly explained in CG, although Langacker does not discuss these types of examples directly. The base verbs in (17) are all imperfective verbs in CG terms, which is the same concept as Alexiadou's unbounded events. While imperfective verbs exhibit great conceptual similarities to mass nouns – both of them are unbounded – perfective verbs show conceptual affinity to count nouns – both of them are bounded. The nominalized verbs in (17) cannot be pluralized or be used as indefinite singulars, both of which are the properties of bounded nouns. This is so, because the bases of these nouns are imperfective verbs that are more similar to mass nouns as opposed to count nouns. This is, in fact, very similar to Alexiadou's observation

6 Alexiadou (2008: 279) states that this pattern holds across languages.

stated in (16), although she does not cite Langacker's work, which was more thorough than hers and appeared much earlier.

(17) a. ***The congregation's constant doubtings of the minister** lasted for several years.*
b. ***The candidate's frequent believings of the new justice system** received much support from various minority groups.*

Langacker's position concerning the noun-verb parallelism has been successfully adopted by various researchers, particularly in dealing with English (Davidse 1991; Heyvaert 2000, 2003, 2008). Independent of Langacker and CG, a similar position is also observed in Schachter (1976). These researchers do not deal with event nominals directly, but the main idea behind their analyses is identical to Alexiadou's generalization.

It is worth noting that the grammatical behavior of *-ing* nominals, such as pluralization, is a reflection of their conceptual properties. Generally, imperfective verbs like *doubt* profile a stable situation with no intrinsic endpoint. In certain situations, however, these verbs can be construed as events that constitute a change. Indeed, some imperfective verb-based *-ing* nominals behave like count nouns as in (18), though these situations are rare and highly contextualized.[7] For example, *doubting*, in the context of Christian belief, is often viewed as a stage of spiritual growth (McGrath 2007) that we believe has a soon-to-come terminal stage. In this context, *doubting* exhibits a conceptual similarity to perfective verbs.

(18) a. *And all of **my lovings of birds and beasts and men and angels** will be still greater things of joy and pride to you.*
(Google Books: *The Bride of the Sky* 1976)
b. *It tends to bereave our souls of all assurance of our salvation and all solid comfort which is the life of religion, and makes us subject to **continual doubtings of the love of God** toward us.*
(Google Books: *The Baltimore Literary and Religious Magazine* 1841)

Another disappointing aspect of Alexiadou's proposal is that her analysis is not fully developed. Although her later research (Alexiadou et al. 2010) provides a more detailed cross-linguistic analysis based on Number and Aspect projections, it still lacks an explanation of how and why nouns and verbs exhibit parallel patterns concerning boundedness.

7 We thank one of the reviewers who pointed out this property with the examples provided in (18).

The examples of *-ing* nominals we discussed thus far are all instances of the so-called *ing*-OF gerunds or ACTION *-ing* nominalizations in terms of Lees (1960). Other types of gerundive nominalizations[8] have been less-frequently discussed in the context of event nominals. To see the full picture of *-ing* event nominals, however, we need to incorporate these other types of gerundive nominalizations in our analysis. As previously discussed, *ing*-OF gerunds, as in (19), can optionally take a plural form and may be modified by an adjective. The other gerundive nominalizations, in (20–22), contrast with (19) in that the subjectoid cannot be replaced by a determiner. Unlike *ing*-OF gerunds, they cannot take adjective modifiers. Rather, they may be modified by either an adverb or the verbal negator *not* as shown in (20) and (21) respectively. All of these examples involve complex event nominals with full argument structure.

(19) *Virginia told us about* ***her/the/Ø previous sightings (of the Blue Fox)***.
(Kaiser 1999: 2)
(20) *Flo counted on* ***them quickly finding her lost dog***.
(Kaiser 1999: 2)
(21) *They were shocked by* ***his not having called me up sooner***.
(Kaiser 1999: 2)
(22) ***Smoking cigarettes*** *is unhealthy*.
(Kaiser 1999: 3)

Perhaps one of the reasons examples like (19) have been discussed more thoroughly in dealing with event nominals may come from the assumption that they are different from other types of nominalizations, i.e., the *-ing* in (19) is different from those of (20–22). However, several scholars (Jackendoff 1977; Kaiser 1999; Yoon 1996; Yoon and Bonet-Farran 1991) observe that when a language has both an *ing*-OF gerund as in (19) and clausal gerunds as in (20–22), the same form often appears in both. In our analysis, we show that the instances of *-ing* in (19–22) are identical in their form and function. The difference resides in different grounding mechanisms While (19) allows all types of grounding strategies, (20–22) allow only the covert or indirect grounding method. These examples of clausal nominalizations will be revisited in Section 4 for more detailed discussion.

One phenomenon conspicuously less-discussed in the literature is the use of *-ing* nominals as result nominals. Different from Alexiadou and Grimshaw's

8 Rosenbaum (1967) categorizes four types of gerundive nominalizations: *ing*-OF gerund, ACC-*ing* gerund, POSS-*ing* gerund, and PRO-*ing* gerund. The latter three are examples of gerundive nominalization in Lees's categorization.

(2008) generalization (10c), *-ing* nominals can be used as result nominals as shown in (23).

(23) *-ing* nominals as result nominals
   a. *"You're saying that Kaille used his witchery on Gordon? That's why?" "I did not!" "I sensed* ***a conjuring****, Kaille," Mariz said.*
   (*Dean Man's Reach* 2015)
   b. *The* ***gathering*** *at the hall was a rare display of collective political assertion by the Rohingya in Malaysia, many of whom wore red T-shirts proclaiming their ethnicity.*
   (*New York Times* 2015)
   c. *This reduces the risk of contamination from rotting leaves or* ***droppings*** *from birds and insects in the trees.*
   (*Mother Earth News* 2003)
   d. *Although Medicare now reimburses the cost, insurers Highmark and UPMC Health Plan do not cover* ***the screenings****, so they are not being used regularly.*
   (*Pittsburgh Post-Gazette* 2015)

These examples show that Alexiadou and Grimshaw's generalization (10c) needs to be reconsidered; some nominals created with the *-ing* affixation are not complex event nominals. We observe that the use of *-ing* nominals as result nominals is often accompanied by a metonymic shift. In its function, the *-ing* affix is similar to other affixes such as *-(a)tion* and *-ment*. These two groups are indeed similar, but each is distinct in their own right. Whereas *-ing* nominals tend to gain a new result meaning through metonymic shift, result nominals with other affixes emerge through either zone activation or metonymic shift. The difference between these two processes and their applications in facilitating the creation of result nominals will be discussed in Section 5.

3 A construal-based semantics

In the previous section, we discussed the challenges that the two major models – event and structural – face concerning conversion, affixal ambiguity, and the *-ing* nominals. We will illustrate how our analysis overcomes these challenges in this section. In doing so, our presentation will be given in the reverse order: *ing*-OF nominals, affixal ambiguity, and conversion. This is because, as will be discussed, *ing*-OF gerunds exhibit more general patterns than the other two cases.

3.1 *Grounding and the case of* ing*-of gerunds*

We will focus on *ing*-OF gerunds in this section as illustrated in (24), postponing the discussion of clausal *-ing* nominalizations until Section 4.

(24) *ing*-OF gerunds
   a. *Screenwriter Jason Hall**'s recounting of his tricky meeting with Kyle** and subsequent talks with Kyle's widow, Taya, are as engaging as anything in the film.*
   (*People* 2015)
   b. *It may even be a time for the courts to allow **organizing of lower managerial ranks**.*
   (*Hospital Topics* 1994)
   c. *So there's a lot of things that are below the radar of police, a lot of signaling and intimidation that's going on all the time, and then there are occasional assaults and very, very occasional **killings of witnesses**.*
   (*NPR* 2015)
   d. *At Prete Plaza, the program will include **the reading of a mayoral proclamation**.*
   (*Austin American Statesman* 2015)
   e. ***A singing of the state song** concluded the ceremonies.*
   (*American Indian Quarterly* 1998)

Stated in CG terms, a verb profiles a process, which is "a complex relationship that develops through conceived time and is scanned sequentially along the axis" (Langacker 2008: 112). That is, the base verbs in (24) all profile processes. Participles, then, are elements that invoke a certain vantage point for viewing the processual content. More specifically, *-ing* in (24a–e) provides an internal vantage point by imposing a limited immediate scope (IS) in the temporal domain. The consequence of the imposition of IS is the exclusion of the beginning and end of the verbal process, yielding an atemporal mass-like construal, which is shown in Figure 1. The ellipses (...) in this figure indicate the viewing of the focused states as effectively equivalent. Here, we would like to clarify the two CG notions, immediate/maximal scope and atemporal construal. The verb is viewed as a succession of events evolving over time, which conceptually includes starting and end points. This whole viewing frame is called a maximal scope, where the entire bound event is included in the frame. Viewers, however, put a smaller portion relevant in a discourse context "onstage". This "onstage"

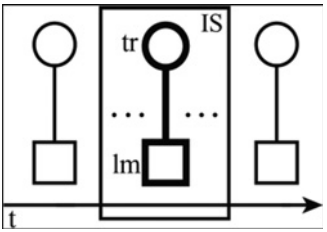

Figure 1: The imposition of IS, redrawn after Langacker (2008: 121).
This is slightly different from Langacker's original figure. In his figure the *lm* is not marked. Technically, the *lm* square can be represented as a circle because the relation is between two things, but we left it as it is.

region is called an immediate scope. Although the maximal scope contains the bounded event, the immediate scope imposed in Figure 1 excludes the beginning and end points of the bounded event; hence this construal becomes atemporal.

Returning to the imposition of IS, one important point is the choice of the term *mass-like*. The result of the imposition of IS shown in Figure 1 clearly resembles a mass noun – shown in Figure 2 – as it is internally homogeneous and brings the process/relationship into immediate and exclusive focus. Both Figures 1 and 2 show a case of an unbounded element in which its boundary exists outside of the speaker's focus of attention, i.e., IS. Here, *domain of instantiation* is equal to space.

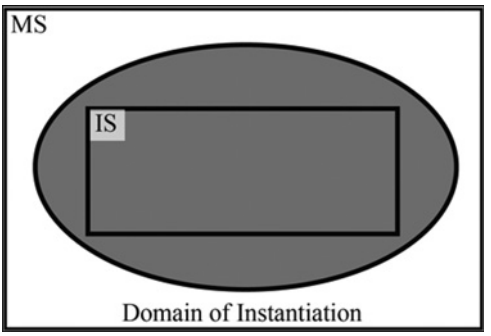

Figure 2: Mass noun, redrawn after Langacker (2008: 133).

Yet the result of the IS imposition in Figure 1 does not create a noun, because what is profiled is still a relationship, not a thing. Through the additional higher-

level organization, conceptual reification,[9] it becomes a noun.[10] Note, however, that noun is a type specification, as opposed to an instance. A noun becomes a nominal through grounding, which is needed to direct the speaker's attention to the intended discourse referent. It is important to stress that while nouns are classificatory, grounded nouns – nominals – are referential. Without grounding, interlocutors cannot make a distinction between the "talked-about" member and the rest of the members in the same category. The most obvious grounding method is to utilize an overt grounding element, which is the case in (24d) and (24e). In (24d), *-ing* imposes the IS on the process profiled by the base verb *read*, yielding a mass-like interpretation. Then, *reading* combines with *a mayoral proclamation*. Since *reading* loses its verbal property by being atemporalized and reified, it cannot directly combine with another nominal. This is resolved by the preposition *of*, which invokes a schematic relationship between two things. When *reading* and *a mayoral proclamation* are combined via *of*, the internal structure of *reading* is still visible, and the landmark is elaborated[11] by *mayoral proclamation*, yielding an object-like interpretation of the base verb *read*. The outcome, *reading of a mayoral proclamation*, however, is not a full nominal, as it still lacks grounding. The grounding in (24d) occurs, then, through the use of the definite article *the*. Example (24e) shows a slightly different case with the indefinite article *a*. In (24e), the IS is imposed on the process profiled by the base verb *sing*, followed by the combination with *the state song* via the preposition *of*. In this case, the result, *singing of the state song*, is construed as a count noun by expanding the IS as in Figure 3, rendering the boundary visible within the IS. As a count noun, it can be grounded by the indefinite article.

Not every grounding method is overtly realized; grounding can be achieved covertly or indirectly. Mass nouns and proper nouns/pronouns are examples of this, though they differ from each other. While mass nouns are grounded by directly shifting the speaker's attention from a type to an instance, proper nouns/pronouns are intrinsically grounded without any kind of shifting.

(24a) represents a case of indirect grounding, which is often achieved with a possessive. Here, *recounting of his tricky meeting with Kyle* is indirectly grounded via the intrinsic grounding of *Jason Hall*. In this case, *Jason Hall* corresponds to

9 When reification occurs, as is often the case with *nomina actionis*, a general tendency for metonymic shift is observed "from the activity in general to a specific single act of performing the activity" (Brdar and Brdar-Szabó 2014: 335). This type of metonymic shift, however, will be not be discussed in this article.

10 In other words, as Heyvaert (2000: 105) argues, "*-ing* does not create a noun, but preserves the verbal character of the verb it attaches to."

11 *Elaboration* is a CG term, which is roughly the same as the head-complement or the subject-predicate combination in a traditional sense.

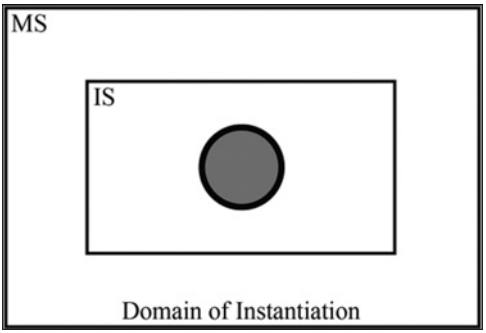

Figure 3: Count noun, redrawn after Langacker (2008: 133).

the trajector of the relationship profiled by the base verb *recount*. As a consequence, it is interpreted as the subject of the relationship, which is depicted in Figure 4. Note that Figure 4 shows the result of the indirect grounding of *recounting* via *Jason Hall*, in which the landmark of the reified process is elaborated by *his tricky meeting with Kyle* (htm).[12] In this figure, the IS portion is identical to that of Figure 1. Different from Figure 1, however, the internal part of the IS is reified as indicated by the bold ellipsis, which is the target (T) of the

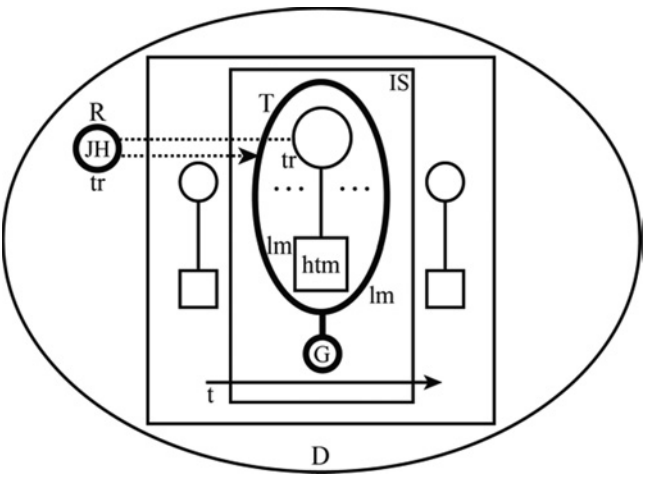

Figure 4: CG description of *Jason Hall's Recounting of His Tricky Meeting with Kyle*.

12 For a discussion on *of* in CG, please refer to Langacker (1991: 37–42) and Langacker (1992).

reference point[13] (R), *Jason Hall* (JH). As a reference point, JH functions as a mental address to access the reified event (T). As for the notations used in Figure 4, the grounded element is indicated by the circled G. D stands for dominion, which is defined as a set of potential targets. The bold circles denote profiled things to which attention is directed.

The pluralized form *killings* in (24c) functions as a mass noun grammatically, and thus can be grounded covertly. The difference between (24c) and (24e) is illustrated using CG diagrams in Figure 5. For the simplicity of exposition, only the final stages of the compositions are shown, and trajectors and landmarks are not labeled. Figure 5(a) shows that each instance of *killing of witnesses* is grouped to be a plural nominal. The group of instances is grounded covertly in this case. Figure 5(b) shows the grounding of one particular instance, *singing of the state song* with the indefinite article.

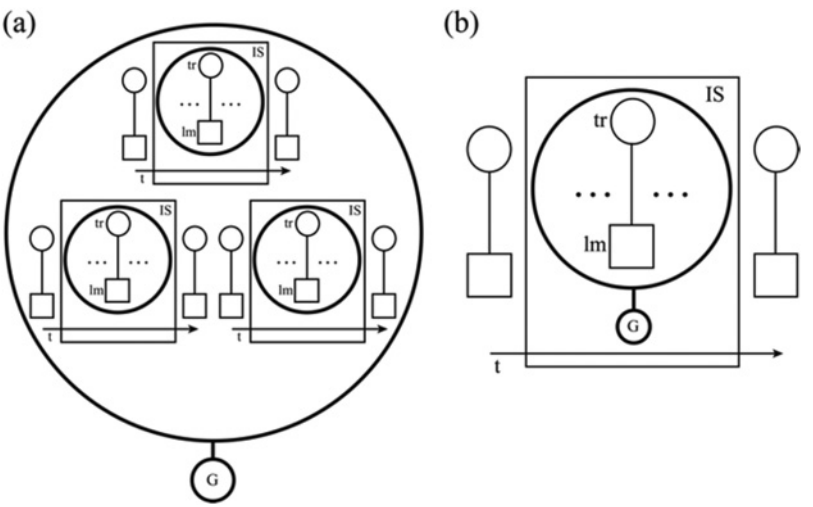

Figure 5: Plural mass and count noun interpretations of the *-Ing* nominal.

13 A very rough analogy of reference point would be bird watchers looking for falcons in a densely wooded area. One bird watcher spots a bird immediately and notifies his companion. The companion, not seeing the bird right away, would ask exactly where the bird is, since the heavily wooded area provides many places for a falcon to perch. The first bird watcher would then likely provide some kind of reference point for the companion, perhaps with the aid of a preposition phrase: *The bird is near the big rock*. In this example, *the big rock* is a reference point, *the bird* is the target, and other potential targets form a dominion.

For the purpose of comparison, Figure 6(a) illustrates grounded plural nouns such as *books*, and Figure 6(b) depicts a grounded mass noun. According to Langacker (2008: 131), bare plural nouns resemble mass nouns. For this reason, Langacker (2008: 131) calls plural nouns 'plural mass nouns' and mass nouns 'non-plural mass nouns'. The difference between the two is what they foreground. While mass nouns foreground the perceived continuity of the mass at the expense of constitutive entities as notated by dotted inner circles in Figure 6(b), plural nouns foreground the whole through individual elements notated by solid inner circles in Figure 6(a).

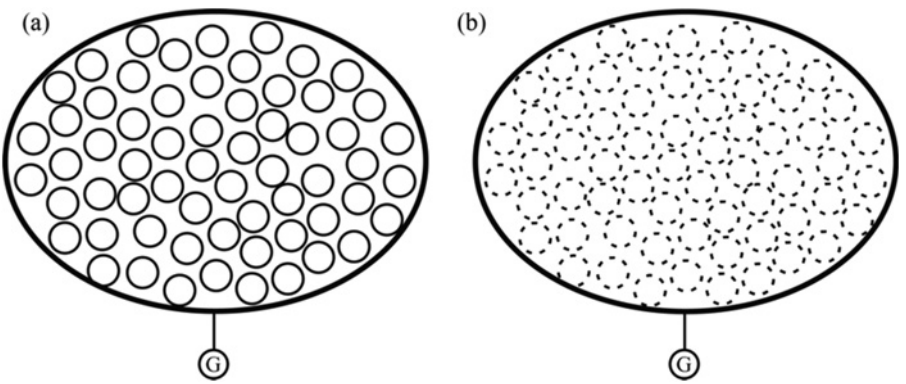

Figure 6: Plural Vs. mass noun, redrawn after Langacker (2008: 131).
The grounding notation is our modification.

In sum, the *-ing* affix imposes an IS on the profiled process of the base verb, which results in a mass-like entity. After undergoing reification, this entity needs to be grounded to be a full nominal. If it is grounded covertly, it is indeed construed as a mass noun. On the other hand, it can be construed as a count noun when IS is zoomed out. When this happens, the entity can be grounded by the indefinite article. Alternatively, it can be grounded indirectly in the possessive construction. Grounding by the definite article can occur to both mass/plural and count construals. The count noun uses of *-ing* event nominals are observed when the base verbs of the reified nominals are perfective. Event nominals of the *-ing* type created from imperfective verbs generally resist the count noun construal.

3.2 The case of event nominals

Event nominals like *examination* and *replacement* behave very similarly to the *ing*-OF gerundives. Just like *-ing*, the nominalizing affixes impose IS on the

process profiled by the base verb, and the result of the IS imposition is an atemporalized mass-like entity. All five types of grounding methods used for *-ing* nominals are observed in event nominals as well, as shown in (25).

(25) Event nominals

a. *The Board found Dr. Nguyen failed to meet the standard of care in* ***his treatment of a pediatric patient*** *with a fractured wrist.*
(*Houston Chronicle* 2011)

b. *These difficulties do not lead to discouragement or* ***abandonment of the effort*** *for ultimate unity, for we hope for and believe in help from above.*
(*Journal of Ecumenical Studies* 2013)

c. *Assignments of commercial deposit accounts are governed by Revised Article 9, although* ***assignments of deposit accounts*** *in consumer transactions remain excluded [...].*
(*ABA Journal* 2001)

d. *The novelty of this study lies in* ***the demonstration of the influence of class-level homophobic attitudes****, not individual homophobic attitudes.*
(*School Psychology Review* 2012)

e. *However,* ***a computation of effect sizes*** *using the formula indicates moderate magnitudes ranging from .10 to .25.*
(*College Student Journal* 2010)

Event nominals can also be grounded by demonstratives, which is different from what previous researchers have claimed (Grimshaw 1990; Zucchi 1993), as illustrated in (26).

(26) Event nominals grounded by demonstratives

a. ***That examination of management practices*** *at dozens of US-based corporations became a runaway hit, 5 million copies were sold, making it one of the most widely read business titles of all time.*
(*NPR_Morning* 1993)

b. *[...] the artist had to attempt to reproduce* ***that destruction of use-value and traditional intelligibility*** *that was at the origin of the experience of shock.*
(*October* 2004)

c. *I hope that* ***this arrangement of 50 Democratic senators and 50 Republican senators*** *can be made to work for the American people, and I genuinely believe that it can [...].*
(*U.S. News & World Report* 2000)

Although previous research focused on the two affixes, *-(a)tion* and *-ment*, we observe the same event nominal formation with the less-productive affixes *-al*, *-ance*, and *-ure* as in (27).

(27) Event nominals with less productive affixes
a. ***A refusal of such a request*** *should be interpreted as a warning sign that your new renter has something to hide*.
(*Black Enterprise* 1991)
b. *But extant sources suggest that* ***his performance of Sinners*** *was part of a week-long series of traveling revival meetings that were promoted by a half dozen local clergymen*.
(*Church History* 2005)
c. *The West's standoff with Russia over* ***its seizure of Crimea****, analysts and former administration officials said, could complicate American efforts to curb Iran's nuclear program [...]*
(*New York Times* 2014)

Although the basic function of these affixes is identical to that of *-ing*, *-(a)tion/-ment* and *-ing* are different in three notable ways. First, *-ing* is more flexible than *-(a)tion/-ment* in that it can impose IS either at the lower or at the higher level. The imposition of IS by *-ing* can occur either before or after the elaboration of the landmark of the relationship profiled by the verb, as shown in (28a) and (28b), respectively. By contrast, *-(a)tion/-ment* exhibit a restricted pattern by allowing the imposition of IS at the lower level only – before the elaboration of the landmark, as in (29). All examples in (28) and (29) are our own.

(28) a. ***Jane's singing of the song*** *shattered all the glass in the conservatory*.
b. ***Jane's singing the song*** *shattered all the glass in the conservatory*.

(29) a. ***Jane's examination of the newly discovered artifacts*** *took several months*.
b. ****Jane's examination the newly discovered artifacts*** *took several months*.

Second, as we demonstrated in Section 2.3 and elsewhere, the count noun use of *-ing* event nominals is dependent upon the base verbs' perfectivity. This dependency is not observed among event nominals created with the aforementioned nominal affixes. If the affixation is permissible in English morphotactics, the resulting event nominals may be used as either count or mass nouns. The base

verbs of *appreciations*, *detestation*, and *denials* in (30) are all typical imperfective verbs. But they all can take a plural or an indefinite singular form.

(30) a. *[...] the dead do care at all for their name and fame, then how must the souls of Shakespeare and Webster have been stirred, after so long converse with things that stopped their ears, whether above or below the soil, at* ***his exquisite appreciations of them*** *[...]*
(*Raritan* 2000)
b. *Expulsion of those with sexual differences from the sacred precincts of the church and expunging their acts and gifts from our institutional memory may express* ***a detestation of intrinsic evil****, but it also carries with it an effective denial of common humanity.*
(*America* 2004)
c. *Later in the year, Charles Dolan, a former national propagandist for the BUF, claimed that* ***Mosley's previous denials of antisemitism*** *had always been "for political reasons only."*
(*History Today* 2015)

The last difference between these affixes and *-ing* is observed when they create result nominals. As we already mentioned in Section 2.3, while *-ing* nominals tend to gain a new result meaning through metonymic shift, result nominals with other affixes emerge through either zone activation or metonymic shift. This issue will be revisited in Section 5.

3.3 The case of conversion

As explained in Section 2, both the event-based and the structural models must block V-to-N conversions, but they are frequently observed. Imposing IS on the process without the help of an affix like *-ing* is nothing unusual. Let us consider the examples in (31) from Dancygier and Sweetser (2014) and Langacker (1987a).

(31) a. *I've got cat all over my skirt.*
(Dancygier and Sweetser 2014: 131)
b. *After I ran over the cat with our car, there was cat all over the driveway.*
(Langacker 1987a: 67)

Normally, *cat* is a count noun, and is therefore bounded within the immediate scope in the domain of instantiation as described in Figure 2. In (31a), as Dancygier and Sweetser (2014) state, "one might imagine, for example, large

accretions of shed cat fur on my skirt – more than a few individual, countable hairs". Langacker's well-known and somewhat gory example (31b) can be explained in a similar way. After the accident, the poor cat is not identifiable anymore, and he became formless and boundary-less. Using count nouns in the mass noun context alters the meaning of the count noun, which becomes possible by zooming in the IS. The result here is that the focus of viewing is confined to the IS, excluding a boundary from the specific focus of attention. One important matter here is that this alteration of the focus of attention does not have to be accompanied by grammatical elements. Conversion is another example of semantic alteration without grammatical encoding.

4 Clausal nominalizations

In this section, we extend our analysis of event nominals to clausal nominalization. We demonstrate that the function of *-ing* in clausal nominalizations is identical to that of *ing*-OF gerunds. The crucial difference between *ing*-OF gerunds and clausal nominalizations comes from the grounding methods the two types of gerundives adopt. We demonstrate that clausal nominalization is completed by indirect grounding or by the construal of the reified event as the maximal extension.

4.1 Some background on clausal nominalizations

For the sake of convenience, we reintroduce Kaiser's three types of clausal nominalization examples with new numbers here.

(32) *Flo counted on **them quickly finding her lost dog**.*
(Kaiser 1999: 2)

(33) *They were shocked by **his not having called me up sooner**.*
(Kaiser 1999: 2)

(34) ***Smoking cigarettes** is unhealthy.*
(Kaiser 1999: 3)

The gerundive nominalizations described above have been extensively discussed from diverse theoretical perspectives, e.g.: generative linguistics (Abney

1987; Baker 1985; Yoon 1996), HPSG (Malouf 1998), amorphous morphology (Kaiser 1999), DM (Alexiadou et al. 2010), word grammar (Hudson 2007), cognitive linguistics (Heyvaert 2000, 2003, 2008), and formal semantics (Chierchia 1984; Portner 1991; Zucchi 1993), among many others. All of these proposals provide valuable insights on the gerundive phenomena, though due to space constraints, we cannot discuss them in depth. We note that two research proposals, Alexiadou et al. (2010) and Heyvaert (2000, 2008), are particularly germane to our proposal. Although these authors do not cite each other's work, both proposals treat gerundives as similar to mass nouns, which is also our view. In their DM-based approach, Alexiadou et al. propose a hierarchy of functional projections that include nominal (Num, Class) and verbal (Asp, VP). Alexiadou et al.'s approach to gerundives is thus nominal-over-verbal, which is the most widely accepted view. By contrast, working from a functional perspective, Heyvaert (2008) adopts Halliday's (1966) notion of rankshift. In this view, gerundives involve the shift of a clausal configuration of functions, from clausal to nominal rank, while maintaining their internal clause-like structure. Furthermore, based on Schachter (1976), Heyvaert proposes a nominal analysis of gerundives by claiming that gerundive nominalizations fit in with the nominal paradigm internally. Her evidence comes from the subcategories of gerundives: "the system of gerundive nominalizations draws on two basic nominal-constructional options, viz. those of specific (definite or indefinite) and non-specific (viz. generic) reference" (Heyvaert 2008: 57). Although we believe Heyvaert's choice of the words "a nominal analysis of gerundives" is somewhat of an overstatement,[14] we are generally in support of Heyvaert in that we also believe specificity plays an important role in understanding different types of clausal gerundives.

That being said, we believe Heyvaert's analysis needs more clarification in dealing with examples like (35).[15] Heyvaert (2008: 69) argues that "the presence of the oblique, non-generic subject *you* turns the gerundive nominalization into the conception of a specific instance rather than a type and the downranked unit *you being a Cowboy fan, an old boy from Arkansas* functions as an inherently

14 This is because, no matter what, gerundives exhibit both verbal and nominal properties to some extent; gerundives are different from prototypical mass nouns. Also, we are not sure how the object of the base verb is treated in her nominal gerundive approach. She argues that the combination of the object with the verb does not create an instance. This is true and we agree with her. But the object is still the object of the verb, elaborating the landmark of the process profiled by the verb, in terms of CG. If so, there exists a verbal property, at least at this stage.
15 Alexiadou et al. (2010) do not include ACC-gerundives in their discussion.

definite nominal." This means, as far as definiteness is concerned, (35) is identical to (36), which is also identified as an example of the specific subcategory of gerundive nominalizations, exhibiting inherently definite nominal properties.

(35) *We're behind you because you're a winner and a champion. Appreciate* ***you being a Cowboy fan****, an old boy from Arkansas.*
(Heyvaert 2008: 69)

(36) ***Magic Johnson's having the AIDS virus*** *is just as great a national catastrophe as the assassination of President Kennedy and the Challenger disaster.*
(Heyvaert 2008: 65)

This is true when the gerundives appear in the subject position. However, when they appear in the complement position with a non-factive matrix verb, they allow different interpretations. Let us consider examples (37–39) from Portner (1991). In these examples, as Portner demonstrates, only the (a) examples with the POSS-gerundive have a familiarity presupposition. In the (b) examples, it is not necessary that the familiar situation of *John coming to visit Mary* be actual. Put differently, when the ACC-gerund occurs with a non-factive matrix verb in the complement position, it can be interpreted as non-definite, while POSS-gerunds are always definite without respect to factivity or their syntactic position.

(37) a. *Mary didn't discuss* ***John's coming to visit her****.*
Portner (1991: 110)
b. *Mary didn't discuss* ***John coming to visit her****.*
Portner (1991: 110)

(38) a. *If Mary contemplated* ***John's coming to visit her****, she didn't tell me.*
Portner (1991: 110)
b. *If Mary contemplated* ***John coming to visit her****, she didn't tell me.*
Portner (1991: 110)

(39) a. *It's unlikely that Mary discussed* ***John's coming to visit her****.*
Portner (1991: 110)
b. *It's unlikely that Mary discussed* ***John coming to visit her****.*
Portner (1991: 110)

A similar observation is found in Kaiser (1999). According to her, only examples like (40a)[16] presuppose the existence of the events they denote. While (40a) allows only one interpretation of "I heard a false rumor which was in some way related to the fact that John smoked stogies" (i.e., John smoked stogies), (40b) has another interpretation in addition to that: "I heard a false rumor that John had smoked stogies" (i.e., it is not necessarily the case that John smoked stogies).

(40) a. *I heard a false rumor about **John's smoking stogies**.*
b. *I heard a false rumor about **John smoking stogies**.*

In relation to the presupposition issue, the difference in case marking between POSS-gerunds and ACC-gerunds should not be treated lightly. This is because this formal difference is not accidental; it is a close reflection of the functional differences. These issues need to be incorporated to provide a full-fledged picture of gerundives.

4.2 A CG-based analysis of clausal nominalizations

Our proposal concerning clausal nominalizations is summarized in the following. The function of *-ing* is identical to that of *ing*-OF gerundives; the *-ing* used in clausal nominalization imposes IS on the profiled process as well. The difference is that the IS is imposed at a later stage in the case of clausal nominalizations, after the landmark of the verb is elaborated by its object. This is so far basically the same as Langacker's (1991) treatment of gerundives. The resulting relationship of the IS imposition can turn into a noun by reification. This is a noun in the sense that it specifies a type, not an instance. As a type specification, it needs to be grounded to be a full nomimal. The important part of our proposal resides in the grounding methods adopted in clausal nominalizations. When an event denoted is factive, the reified process is grounded indirectly by the possessive. When an event is non-factive, the speaker has another option, i.e., grounding the reified entity locationally. The gerundive portion in (40b), *John smoking stogies*, may thus be interpreted as "in John's domain of experience, there exists a reified event in which John participates as a trajector," where the reified event is non-definite. Note that the non-definite construal is available

16 Kaiser's original examples are *I heard a false rumor about Bill getting fired* and *I heard a false rumor about Bill's getting fired*. We slightly modified her original examples to include the landmark of the base verb in the gerundive.

only when the gerundive appears with the non-factive matrix verb; the default construal of these gerundives is still the definite interpretation. This means that (40b) can be identical to (40a) in their definiteness-related predictions under a non-factive context. In this case, the only difference between the two becomes the case pattern of the subjectoid, which will be explained later in this section.

To illustrate what exactly we mean by locational grounding, we first need to discuss the location and the existence schemas. Figure 7(a) illustrates the location schema that roughly translates to "an entity is located in a delimited region". Figure 7(b), which is the existence schema, is interpreted as "an entity is located in the domain of existence". Not surprisingly, these two schemas exhibit great similarities.

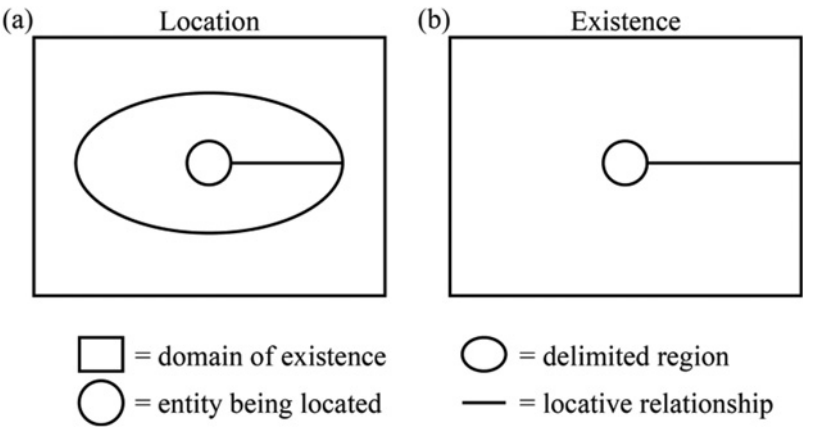

Figure 7: Location and existence, redrawn after Langacker (2009: 99).

The location schema – Figure 7(a) – can be extended to the locative schema depicted in Figure 8, where R refers to reference point; T, target; C, conceptualizer;

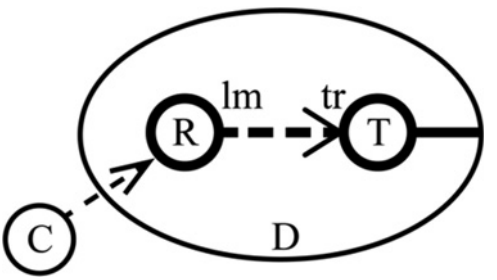

Figure 8: The locative schema, redrawn after Langacker (2009: 100).

and D, dominion. This figure is a representation of the situation in which the target occupying a location is accessed via a reference point.

Perhaps the best example that can be analyzed by the locative schema is the Japanese example in (41), where *mago(-ga)* 'grandchild' matches the target (T) in the locative schema, and *iru* 'exist' represents the existence relationship indicated by the bold horizontal line on the right side of T. At the lower level of organization (not shown here), *mago(-ga)* is grounded independently of *Watashi(-ni-wa)* 'I' as the trajector of the clausally grounded existence relationship. Then, *mago-ga iru* combines with *Watashi(-ni-wa)* via the locative schema to yield the final composite structure in (41), where only *mago-ga iru* is profiled.

(41) *Watashi-ni-wa* *mago-ga* *iru.*
I-to-TOP grandchild-SUBJ exist
'To me, there is a grandchild./I have a grandchild.'
(Langacker 2009: 99)

The important observation is the independence of the target (*mago*) in grounding. Different from the possessive construction – a case of the regular reference point construction – the locative-schema-induced structure does not utilize the indirect grounding method.

With this background, we return to the ACC-gerundive example (40b), which is diagrammed in Figure 9. The grounding strategy adopted here is the locational grounding in which the reified event is grounded independently of *John*.

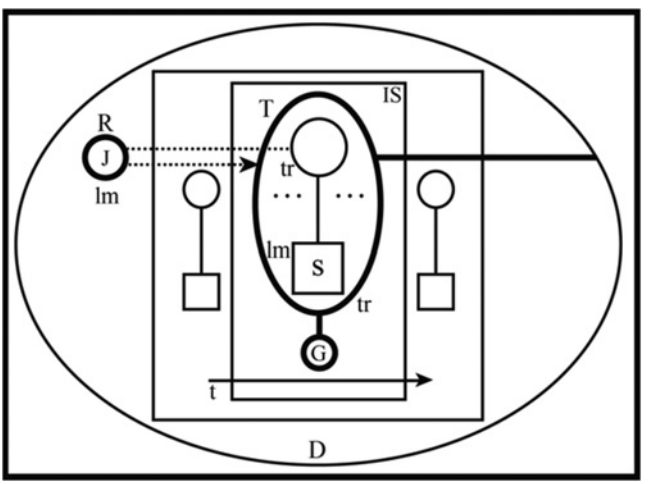

Figure 9: Accusative grounding.

In other words, the reified event is not grounded via the intrinsic grounding of *John*. As a consequence, the reified event does not have to be definite. Nonetheless, *John* corresponds to the trajector of the relationship profiled by the verb, yielding the subjectoid interpretation of *John*, although it is accusative case-marked. The order of operations is critical here – the IS was imposed only after the elaboration of the landmark (*stogies*) of the relationship profiled by *smoke*. Owing to the later stage of the IS imposition, this construction naturally exhibits more verbal properties than *ing*-OF gerundives. In Figure 9, the reference point, *John*, is a landmark in relation to the trajector *smoking stogies*. This is so because, as shown in the rough rephrase above, *John* does not directly participate in the existence relationship; what exists is the reified relationship, not *John*.

Figure 10 illustrates a typical indirect grounding strategy that is applied to (40a). The reified event *smoking stogies* is rounded indirectly by *John* as shown by the circled G. which becomes possible owing to *John*'s becoming a reference point trajector in relation to *smoking stogies*. This is therefore identical to the *ing*-OF depicted in Figure 4, though the compositional pathways of the two figures are different. In Figure 10, *smoke* and *stogies* are combined before the imposition of is to yield the structure, which is different from Figure 4. Regardless, *John's smoking stogies* functions like an inherently definite nominal owing to the definite grounding of the reified event through *John*.

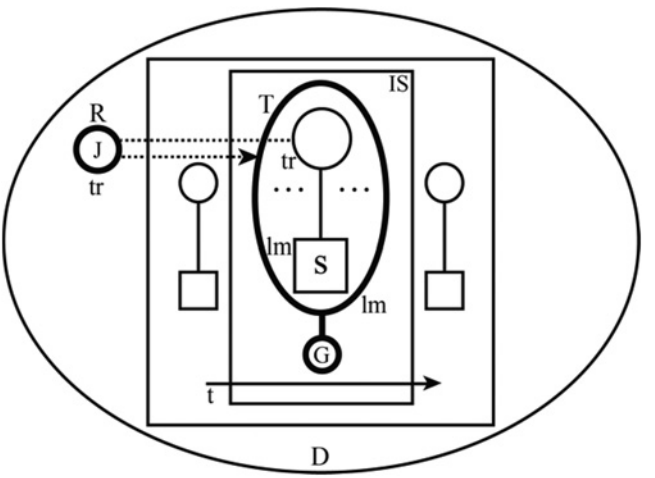

Figure 10: Possessive grounding.

While the subjectoid is realized with the possessive marking by being a trajector of a reference point relationship in Figure 10, it is realized with the accusative case in Figure 9. This is because the subjectoid in ACC-gerundives is a landmark, which receives the default case. In English, as MacFadden (2007) and Schütze (2001) demonstrate, the accusative case plays this role.

In both cases, the internal structures are well-preserved, as shown by the depiction that the reference point corresponds to the trajector of the relationship profiled by the base verb. The preserved internal structure of clausal gerundives leads to the interpretation of a set of reified events (before grounding) or a specific reified event (after grounding). Owing to this preserved eventivity, clausal gerundives are modified by adverbs. This is not a surprising consequence, particularly considering the traditional treatment of adverbs. For example, in (Neo-)Davidsonian semantics (Davidson 1980; Parsons 1990), adverbs are interpreted by predicating them not of an individual or a property, but rather of an event. As a result, a sentence that includes an adverb is interpreted as an event that has an adverbial property. This view tells us that adverbial modifications are more likely semantics-based, as opposed to grammatical category-based. Our treatment of clausal gerundives as reified events naturally explains adverbial modification of gerundives in that what the adverb modifies is an event. Morzycki (2016: 199) illustrates the parallelism between adverbs and adjectives in the Davidsonian semantic approach. If we interpret his position in CG terms, adverbs modify relationships, while adjectives modify things. Since reified gerundives are not typical things with their internal structure fully preserved (with their objects fully realized, for instance), adjectival modification is often not preferred or not permitted at all.

Concerning ACC-gerundives, Taylor (1996: 282–283) cautiously suggests that the accusative-marked subjectoid might be due to the ungrounded status of the nominalized clause. As an ungrounded clause, the gerundive lacks an intrinsic aspect of subject-verb agreement, and the subjectoid is realized as a non-nominative form, the default case in our terms. Although his suggestion is reasonable, there are a couple of problems in Taylor's treatment of ACC-gerundives. First, the nominalized clause does not need a clausal grounding that involves a tense marking on the finite verb because it is a full nominal. So, Taylor's clausal grounding-based suggestion is somewhat irrelevant to this case.

Second, as a nominal type specification, nominalized clauses need to be nominally grounded, instead of clausally. In the earlier example (40a), for instance, the nominalized clause *smoking stogies* needs to be nominally grounded by *John's*. Similarly, *smoking stogies* needs to be nominally grounded in (40b). In both cases, the form and function of *smoking stogies* is identical. The

difference resides in the different nominal grounding mechanisms, which we explored already in this section.

4.3 Subjectless gerundives

Before moving on, we would like to discuss the third type of clausal nominalizations: subjectless gerunds as described earlier in (34). Heyvaert (2008) provides an informative categorization of these, summarized in (42).

(42) Heyvaert's categorization of subjectless gerundives
  a. Specific
    i. Retrievable subject
    Ex: *[...] had decided to boycott me for the mere fact of having written a book on Franco*.
    (Heyvaert 2008: 65)
    ii. Retrievable and reinsertable subject
    Ex: *Of course, I regret getting pregnant*.
    (Heyvaert 2008: 67)
  b. Non-specific (Generic)
    i. Controlled subject (clausal type specification is instantiated)
    Ex: *Having an ugly wife makes a man mean*.
    (Heyvaert 2008: 65; Postal 1970: 462)
    ii. True subjectless (clausal type specification)
    Ex: *Eating vegetables is healthful*.
    (Heyvaert 2008: 65)

According to Heyvaert, while (42ai) and (42aii) denote a specific and single instance of a process type, (42bii) denotes a clausal type specification. In the latter case, no single event reading is possible. (42bi) allows either a generic or a specific reading.[17] We agree with Heyvaert in that (42ai) and (42aii) have specific interpretations particularly when the subject can be retrievable (and reinsertable) whether the process is anaphoric or exophoric. This is naturally accounted for in our analysis based on grounding. In (42ai) and (42aii), the gerundives are indirectly grounded by the retrievable (and reinsertable) subject, thereby leading to proper noun-like definite descriptions. However, we believe (42bi) and (42bii) need more clarification.

17 A specific reading is possible when the subject is retrievable.

Let us consider (42bii) first, in which *eating vegetables* is a clausal type specification in terms of Heyvaert. If this is the case, how does this function as a full nominal? Abney (1987: 172–173) provides several syntactic tests to prove that true subjectless gerunds behave like full canonical nominals. We provide the same set of tests with the made-up examples in (43–48).

(43) *I learned about* ***eating vegetables****.* (Object of a preposition)

(44) *Is* ***eating vegetables*** *healthy?* (Subject-Auxiliary Inversion)

(45) *I believe that* ***eating vegetables*** *should be more encouraged.* (Subject of embedded sentence)

(46) *Perhaps,* ***eating vegetables*** *has more health benefits we are unaware of.* (Subject following initial adverb)

(47) ***Eating vegetables*** *I can't abide.* (Topic position)

(48) *It's* ***eating vegetables*** *that I can't abide.* (Cleft position)

(42bi) faces a similar problem. Heyvaert states that (42bi) can be interpreted specifically or generically. This is because the subject of the gerund *Having an ugly wife* can be recovered as a specific person or it can just denote a type rather than an instance. In other words, Heyvaert generally equates genericity with a type, and specificity with an instance. However, genericity/specificity and type/instance are separate notions. Consider the examples in (49) from Krifka et al. (1995). The nominals *the potato* and *potatoes* in (49a) and (49b) refer to a kind, as opposed to some individual potatoes or a specific group of potatoes. (49c) is slightly different in that it is a generic sentence that expresses a generalization about potatoes. In all three cases, the subject nominals express genericity, even though they are grounded instances. Genericity does not require a type specification; instances can express genericity too. The difference between the instances in (49) and others is actuality. As Langacker (2008: 526) describes, "[i]nstead of being actual, an instance of a type can be conjured up for a special purpose, one of them being a general statement". The instances in (49) are all conjured-up entities to express genericity, which makes them distinct from typical instances. Nevertheless, they are clearly different from type specifications concerning their grounding and meaning; they are indeed instances.

(49) a. ***The potato*** *was first cultivated in South America*.
(Krifka et al. 1995: 2)
b. ***Potatoes*** *were introduced into Ireland by the end of the 17th century*.
(Krifka et al. 1995: 2)
c. ***A potato*** *contains vitamin C, amino acids, protein, and thiamine*.
(Krifka et al. 1995: 3)

Our solution for true subjectless gerunds is to adopt the notion of maximal extension. Langacker defines maximal extension as follows:

> [Maximal extension] reflects a number of conceptual phenomena [...] Through grouping and reification, conceived instances are "pulled together" and viewed as a unitary entity. The maximal extension further represents a conceptual blend, combining properties that cannot actually coexist – in particular, those of both count- and mass-noun referents. On the one hand, it is conceptualized as a mass of indefinite extension. [...] At the same time, we conceptualize it as a bounded entity, one that is somehow limited in extent. (Langacker 2008: 279)

The properties of subjectless gerundives we have discussed thus far fit this description of maximal extension. As a maximal extension, they are virtual; speakers are not referring to any actual instances. Rather, what they are referring to are fictive instances. A maximal extension is clearly an instance grounded somewhat differently from other types of grounding methods. The genericity represented by subjectless gerundives is not a sign of their type properties, but a result of their being grounded as a virtual unitary entity.

5 Zone activation and metonymy

This section discusses how result nominals arise through zone activation (profile/active-zone discrepancy) and metonymy. First, we would like to clarify what we mean by these two terms.

5.1 Is zone activation a species of metonymy?

Metonymy is an extensively researched subject in recent cognitive linguistics, covering a wide range of data.[18] We do not intend nor pretend to review the

18 Some examples include Croft (1993), Dirven (1999), Panther and Radden (1999), Kövecses and Radden (1998), Littlemore (2015), and Radden and Kövecses (1999).

large body of research on metonymy here, as it is beyond the scope of this article. What we are interested in is ascertaining the difference between metonymy and zone activation and their roles in the rise of result nominals from different types of nominalizations.

Zone activation and metonymy are frequently discussed notions in Langacker's CG-related publications (Langacker 1987b, 1991, 1993, 1995, 2008, 2009). These notions, seen in (50) and (51), seem to be intricately connected. While (50) is a typical instance of zone activation, (51) is a clear example of metonymy. In the former, we observe the profile/active-zone discrepancy because the profiled portion of *your dog* is actually *your dog's teeth*. Instead of *your dog's teeth*, however, *your dog* (active zone) plays the trajector role in the relationship, leading to a discrepancy between the two; *your dog's teeth* is cognitively activated by virtue of linguistic context. (51) is a case of metonymy, where *the red shirts* exhibits a reference shift from a physical entity to another characteristic associated with it, i.e., a sports team.

(50) *Your dog bit my cat*.
(Langacker 1984: 177)

(51) *The red shirts won the match*.
(Geeraerts and Peirsman 2011: 94)

The concept of metonymy becomes more prominent in Langacker's later work. He (2009: 41) claims that "[...], grammar is basically metonymic, in that the information explicitly coded does not itself establish the precise connections apprehended by the speaker and hearer in using an expression." He then emphasizes the connection between zone activation and metonymy in multiple publications. Overall, Langacker (2000: 67) argues that "profile/active-zone discrepancy is a special case of metonymy".

Unfortunately, Langacker does not always clearly distinguish between metonymy and zone activation, and other scholars interpret these notions differently. Paradis (2004), for example, argues that some of Langacker's zone activation examples must be situated somewhere between metonymy and zone activation, positing a new categorization called facetization. By contrast, Ruiz de Mendoza (2011: 106) describes facetization as "another level for what Croft (1993) called domain highlighting". Because of the different uses and definitions of the notion, Geeraerts and Peirsman (2011: 91) describe zone activation as "[maybe] one of the least homogeneous concepts of Cognitive Linguistics". To avoid

confusion in our analysis, we would like to clarify what we mean when we use metonymy and zone activation.

We adopt the view of Geeraerts and Peirsman (2011). They argue that zone activation is a completely different phenomenon than metonymy based on the observation that there is a lack of necessity of the reference shift in zone activation, while this is required for typical metonymy, such as (51). Additionally, in zone activation, the profiled portion and its active zone may not be interchangeable in a certain grammatical context, while a metonymically shifted expression is almost always interchangeable with its original expression. As shown in (52), the profiled thing, *your dog's teeth*, is incompatible with the verb *bite*, because it requires a volitional subject. The predicate *bit the cat* is only compatible with the active zone, *your dog*. By contrast, (51) and (53) show that both *the red shirts* and *the team* are compatible with the same predicate. Barcelona (2011: 51) maintains a similar position by stating that "some instances like *your dog bit me* are doubtfully metonymic,[19] since it is difficult to claim that *the dog's teeth* are perspectivized from *the dog*". According to him, (52) shows a contrast with (54) in which *United States* is clearly perspectivized from *America*.

(52) * *Your dog's teeth bit my cat*.
Barcelona (2011: 32)

(53) *The team won the match*.

(54) *America will prevail over terrorism*.
Barcelona (2011: 32)

Although there are some borderline cases, we believe the observations and claims made by the aforementioned scholars are valid. Following their elaborated definitions of zone activation and metonymy, we use the term metonymy when there is a reference shift and the shifted sense is still compatible with the predicate. Zone activation, by contrast, does not require a reference shift, and active zone and profile are not always interchangeable. We believe this type of separation between the two notions is on a par with Paradis's (2011: 81) definitions of metonymization and zone activation: "metonymization is a construal that operates *between senses*, while active zone operates *within senses*".

19 Kövecses and Radden (1998: 70) view this as WHOLE FOR PART metonymy.

5.2 Result nominals through zone-activation or metonymy

Result nominals created with *-(a)tion* or *-ment* often exhibit a zone activation property.[20] In (55a), the profiled portion is the landmark of the relationship denoted by the verb *announce*. However, the whole reified event (active zone) becomes the trajector of the relationship profiled by the predicate *has shaken its shares on the New York Stock Exchange*. This shows a profile/active-zone discrepancy. While the active zone, *announcement*, is compatible in (55a), the profile, *announcement's content/outcome/result* as seen in (55b), is unnatural or unacceptable in the same context, where the landmark of the reified event is grammatically expressed as *that Alex Ferguson will retire in two weeks' time after almost 27 years as manager of Manchester United*. The same is true for (56a–b). The grammatical context in which the profiled portion of an event relationship (landmark) is overtly expressed is compatible only with active zone.

(55) a. *The sudden **announcement** on Wednesday that Alex Ferguson will retire in two weeks' time after almost 27 years as manager of Manchester United has shaken its shares on the New York Stock Exchange, to say nothing of its effect around the sporting world.* (*New York Times* 2015)

b. *# The sudden **announcement's content/outcome/result** on Wednesday that Alex Ferguson will retire in two weeks' time after almost 27 years as manager of Manchester United has shaken its shares on the New York Stock Exchange, to say nothing of its effect around the sporting world.*

(56) a. *This institutional regime meant that companies were compelled to share a greater proportion of the wealth they generated with the people who contributed to its **creation.*** (*Atlantic 2015)*

b. *# This institutional regime meant that companies were compelled to share a greater proportion of the wealth they generated with the people who contributed to **its product/result of creation.***

Some result nominals created with the said affixes may gain a new meaning through metonymic shift. In (57), *development* is not a simple result/product or a target of developing, and thus profile/active-zone

20 As explained in Section 2.2, result nominals with these affixes may be construed metonymically as opposed to zone-activationally.

discrepancy is not observed. Instead, *development* refers metonymically to the idea within the field of study in which the protagonist is participating. This example seems to involve RESULT FOR ACTION metonymy. Similarly, *sensation* in (58) is not the object of sensing. Rather, it describes a widespread reaction caused by something perceived, which might have resulted from CAUSE FOR EFFECT metonymy.

(57) *There are moments, he admits, flashes that come and go as fast as a blinking light, when he sees news reports about some new* ***development*** *in the field and it hits him. Wait a second, they're saying that we've melted a lot.*
(*Esquire* 2015)

(58) *Mr. Douglas-Hughes came from a very old and wealthy family, and I well recalled the* ***sensation*** *it had caused when he had married an American dancer named Mamie Allen.*
(*Death Wears a Mask* 2015)

While *-(a)tion/-ment*-affixed nominals become result nominals through either zone activation or metonymic shift, *-ing*-affixed result nominals gain new meanings mainly through metonymy. As shown in (59), *viewing* undergoes a referential shift from "a reified relationship of seeing" to "a ceremonial act of paying one's respect to a corpse". Similarly, (60) shows the reference shift of *hearing* from "a reified relationship of perceiving sounds" to "an act of listening to evidence in a court of law".

(59) *Stephanie has a grandma that's a really great old lady but kind of a couple cans short of a case and she goes to funerals, she goes to funeral parlors for recreation, you know? Four or five nights out of the week she'll be at a* ***viewing****.*
(*CNN_SunMorn* 2000)

(60) *I was fascinated by it. I watched the* ***hearings*** *when I was on vacation in Michigan. I loved it. That we're still dealing with the aftermath of that 40 years later.*
(*ABC* 2014)

Perhaps the rise of new meanings of *viewing* and *hearings* in (59) and (60) can be accounted for by the SUBEVENT AND COMPLEX EVENT metonymical pattern described by Peirsman and Geeraerts (2006: 290). This pattern, according to the authors, "comprises two actions, events or processes, one of which is

conceptualized as a part of the other". In examples (59) and (60), *viewing* and *hearings* are reified subevents that are parts of complex events; e.g., *hearings* in (60) includes the action of physical hearing, but that is only a part of the complex process that includes other court activities. Nevertheless, the speaker picks out one subevent from a complex event to refer to the complex event as a whole.

Here, we would like to emphasize that we are not claiming that suffixes exhibit metonymy, which is different from Janda's (2011) view on metonymy and word formation. Rather, as extensively argued by Brdar and Brdar-Szabó (2014) in response to Janda (2011), a metonymic shift does operate on a whole derived word as a source. *Viewing* in (59) gains a new meaning not because of the *-ing* affix, but because of the metonymic shift facilitated by the newly formed word *viewing*. This shift is possible due to the choice of a subevent of a complex event.

Although the diachronic development of result nominals is beyond the scope of the present article, it is also worth noting that many of the result nominals presented in this section are strongly lexicalized forms over time. This type of lexicalization is not available for all nominalizations, at least not to the same degree. This means many of these highly lexicalized nominalizations have been shaped by usage, especially when they are highly frequent. Naturally, then, zone activation and metonymy are not only processes that guide the synchronic interpretation of nominals, but also important driving forces in the diachronic semantic development.

5.3 Converted nominals

Conversion within the context of metonymy has been discussed by many scholars, notably Dirven (1999), Kövecses and Radden (1998), Radden and Kövecses (1999), and Schönefeld (2004). Radden and Kövecses (1999) argue that N-to-V and V-to-N (nominalization) conversions "can be seen as two complementary morphological processes leading to the two types of reversible metonymies" (Radden and Kövecses 1999: 37). In Schönefeld's (2004: 143) interpretation of Radden and Kövecses, this means that the N-to-V conversion facilitates the WHOLE EVENT FOR PARTICIPANTS metonymy, whereas the V-to-N conversion facilitates the PARTICIPANTS FOR THE WHOLE EVENT metonymy. Schönefeld, however, disagrees with this treatment of conversion. She claims that conversion is a special case of metonymy, and not all conversions should be considered metonymies. We believe Schönefeld's point is valid, particularly in the case of V-to-N converted nominals as shown in (61).

(61) a. *Thankfully, about a year before I learned I had osteopenia, my mom gave me* ***a kick*** *in the butt that inspired me to take control of my health.* (*Prevention* 2013)

b. *This evening, as always, there will be four events:* ***a run, a jump, a throw*** *and an agility drill.* (*Denver Post* 2013)

The converted noun *kick* in (61a) is identical in its content to its base verb, and *run*, *jump*, and *throw* in (61b) have the same content as their base verbs. In both cases, these nominals denote a reified relationship between two things, exhibiting maximal transparency between pre- and post-conversion. These nominals created by V-to-N conversions do not show a profile/active-zone discrepancy nor do they facilitate a noticeable metonymic shift other than the general shift from the activity in general to a specific single act of performing the activity, which is observed not only in this particular case, but also in action nominalizations in general.[21]

Langacker (1991: 25) notes that nominalization does not add anything to the conceptual content of the verb; "the semantic contribution of nominalization is limited to profiling (an aspect of construal)". By contrast, he views the N-to-V conversion as "generally accompanied by the addition of conceptual content" (Langacker 1991: 25). What Langacker means by nominalization is not limited to conversion only, since he is discussing deverbal result nominals like *explosion*. We cannot fully agree with Langacker in that, as we observed, some nominalizations seem to add some conceptual content such as *assignment*, which exhibits added content in addition to simply *something assigned*. However, the V-to-N conversion seems to support Langacker's claim. It does not add anything to the conceptual content, other than some changes in profiling. Although the issue warrants further exploration, the data presented here and elsewhere seem to support the view that V-to-N converted nominals generally do not facilitate a metonymic shift, other than the general shift mentioned above.

One final note on conversion: Many V-to-N conversions have a genuine resultative interpretation as illustrated in (62).[22] As one of the reviewers of this article pointed out, *offer*, *show*, and *catch* have a resultative interpretation. Sometimes, conversions profile the agent trajector as in *the cook* in (62d) and the instrumental landmark as in *the clasp* in (62e).

21 The conversions in (61) qualify for episodic nominalizations that profile "a region whose constitutive entities are the component states of a process" (Langacker 1991: 24).

22 We thank one reviewer who pointed this out with the examples provided in (62).

(62) a. *They just kept upping **the offer** until I had to say yes.*
b. *She's the star of **the show**!*
c. *He's **a good catch**.*
d. ***The cook** made scrumptious meals for homeless people.*
e. *You don't have to worry about messing with **the clasp**!*

These examples belong to the simplest type of nominalization in terms of Langacker (1991: 23). In this type, nominalization occurs by shifting the profile of a verb to a nominal, where the nominal can be either a trajector as in (62d) or a landmark as in (62e). Similar to other cases of conversions, no new content is added to the base verb's conceptual content; the nominalization occurs through the shift of profiling.

6 Conclusion

Throughout this article, we demonstrated that generalizations proposed by Alexiadou and Grimshaw (2008) are too strong to capture the flexible nature of event, result, and gerundive nominalizations, although these are generally agreed-upon observations, at least in the formal linguistics enterprise. In fact, many grammatical constructs often treated as infelicitous by previous researchers are observed in naturally-occurring discourses. We observed that event nominals exhibit great similarities to gerundive nominalizations in that both of them utilize the speaker's ability to construe an event as a mass-like entity. Be that as it may, they are different concerning the grounding strategies they adopt. While event nominals and the *ing*-OF gerundives adopt all grounding strategies, clausal nominalizations permit only two strategies: indirect grounding through a reference point and grounding by maximal extension. Event nominals and *ing*-nominals also contrast in their result nominal uses. We observed that result nominals with *-(a)tion/-ment* or other similar affixes arise due to zone activation or a metonymic shift. By contrast, *-ing*-affixed result nominals tend to be created only through a metonymic shift. Here, we would like to emphasize that these are just tendencies we observed with a limited set of data, instead of a principled guideline. V-to-N converted nominals are different from the two aforementioned cases. Neither zone activation nor a metonymic shift, other than a general shift observed in nominalizations, is utilized in conversion. In that sense, converted nominals exhibit the most transparent case among the three.

This article was a small attempt to develop a uniform analysis of event, result, and gerundive nominals from a CG perspective. As mentioned in the

overview section of this article, these topics have been thoroughly examined from various formal linguistics perspectives. It is somewhat surprising that relatively little attention has been paid to these phenomena within the purview of cognitive linguistics. A more surprising finding is that formal linguists and cognitive linguists do not seem to communicate enough in dealing with these phenomena, although both groups provide good insight and can learn from each other's research. We tried to incorporate these two groups' views with the hope that understanding each other's view will enhance our understanding without respect to our theoretical persuasions.

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