



## **Syntactic and Semantic Interaction in the Description of the English Gerund-Participle with Physical Perception Verbs**

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### **ABSTRACT**

English physical perception verbs can appear followed by an NP (Noun Phrase) and an –ing form. In the literature, they are generally assumed to represent two separate constituents. However, we claim that an alternative interpretation is also possible: the “NP + -ing form” can be considered as a single constituent. We provide semantic, syntactic and thematic evidence in favour of this hypothesis. We will especially dwell on the relationship between physical and cognitive perception verbs. Finally, we will discuss the implications of this analysis on the possible readings of the –ing form with physical perception verbs (abstract and concrete readings).

**KEYWORDS:** –ing form (gerund-participle); physical and cognitive perception verbs

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## I. INTRODUCTION

In English, physical perception verbs can appear followed by an NP (Noun Phrase) plus an *-ing* form, as in:

- (1) a. I see the ship sinking.  
b. I hear my child singing.

The NP and an *-ing* form have been mainly interpreted as two constituents (Kortmann 1995; Quirk 1985; Dirven 1989 and Langacker 1991 and others.). There is semantic, syntactic and cognitive evidence to claim so.

From a semantic and syntactic point of view, it is clear that this construction can be treated as a unit fulfilling an object position (NP) and an *-ing* form functioning as its complement. Semantically, *I hear my child singing* can entail *I hear my child*. Syntactically, *my child* functions as a unit in subject position in passive constructions, whereas the *-ing* form plus the NP cannot function as a single constituent in this particular position, we provide some explanations for this particular issue on page 5 (*my child* was heard singing by me / *\*my child singing* was heard by me). This suggests that this *-ing* form has been syntactically downgraded as a secondary predication of a primary predication argument (i.e. object complement) (Van der Auwera 1990).

From a cognitive point of view, the semantic structure of this construction is diagrammed in the following figure:

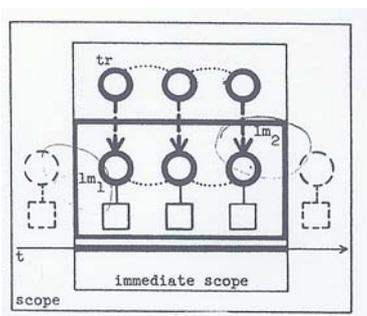


Figure 1. Semantic structure of physical perception verbs (Langacker 1991: 442).

The dashed arrows represent a perceptual relationship between the trajector and the primary landmark; in *I see the ship sinking*, the object of the direct perception verb is not only a thing (lm1: *the ship*), but includes some process in which that particular thing participates (lm2: *sinking*).

The treatment of this construction (NP and an *-ing* form) as two different constituents implies that the *-ing* form functions as a participle, that is the NP is the direct object of the main verb and the *-ing* form is an adjunct depictive of the NP; whereas the interpretation of this construction as a single unit would involve an *-ing* functioning as a gerund, the construction “NP+*-ing*” as a unit functions as direct object of the main verb.

In this study, we intend to provide semantic, syntactic and thematic evidence in favour of the analysis of “NP + *-ing* form” as a single unit. We will support this hypothesis with an analysis of the relationship between physical and cognitive perception verbs. Finally, we will

discuss the implications of these findings on the possible readings of the *-ing* form with physical perception verbs.

## II. AIM

The aim of this study is to prove that the construction “NP + *-ing* form” can be treated as one constituent by analysing the following four parameters: i) the semantics of the “NP + *-ing* form”; ii) its function with respect to the main verb; iii) the argument structure of perception verbs; and iv) finally, the relationship between verbs of physical and cognitive perception.

## III. ANALYSIS

### III.1. The semantics of the “NP + *-ing* form”

The sequence “NP + *-ing* form” evokes an event that is analyzable as the direct object of the main verb. The direct object function is characterized semantically as being filled by an element that designates that which is “[verb]ed”. The “NP + *-ing* form” can correspond semantically to “that which is / was [verb]ed” (Duffley 1999: 227). In *I hear my child singing* “that which is heard” is *my child singing*, not just ‘*my child*’, nor just ‘*singing*’, i.e., the “NP + *-ing* form” fulfils semantically the role of direct object.

### III.2. The syntactic function of the “NP + *-ing* form”

There are various syntactic criteria which corroborate the analysis of “NP + *-ing* form” as the direct object of the main verb. Firstly, this construction can be reformulated by means of a genitive or a possessive pronoun (2a); secondly, pseudo-cleft sentences are possible (2b) and additionally one can refer to the construction by means of the pronoun “it” or “that” (2c):

- (2) We saw the ship sinking
- a. We saw the ship’s sinking/the sinking of the ship/its sinking
  - b. What we saw was the *ship sinking*/the ship’s sinking / the sinking of the ship
  - c. We saw it / that.

Yet, in the passive voice, the NP and the *-ing* form do not behave as one constituent, as can be seen in (3):

- (3) a. \* the ship sinking was seen (by us).  
b. the ship was seen.

There are two possible explanations for this passive ungrammaticality. Firstly, as has been observed by Reuland (1983), the gerund case-marks its subjects: the NP is not case-marked by the main verb, it is only the gerund which is responsible for that. Besides, the NP is not a thematic argument on its own, because the argument is the event as a whole; in other words “the NP is neither thematically nor case related to the verb” (Borgonovo 1996: 8-9).

Secondly, it is likely that the reason for the ungrammaticality of these passives has to do with the semantic conditions on passivization. We do not have a fully explanation to offer at this point, we can only note that it is conceivable that the “NP+-ing form” constituent may fail to passivize from a semantic point of view, “maybe related to the topic status of passive subjects” (Borgonovo 1996: 12).

### III.3. The Argument structure of perception verbs

From a thematic point of view, perception verbs have two roles: an “Experiencer” and a “Percept”. The role of “Experiencer” implies an entity that experiences a process of physical or mental perception; whereas the “Percept” refers to the object of perception role; the latter can be assigned to two semantic entities: an individual or an event. The Canonical Structural Realization of an individual is a NP and of an Event is typically the gerund (Borgonovo 1996). In *I see John dancing* there are two possible “percepts”:

- (4) Percept role:
  - a. Individual: NP (“*John*”)
  - b. Event: NP+ *-ing* form (“*John dancing*”)

As a result, English has two possibilities: NP is considered the sole argument (“*John*”), and the *-ing* form functions as an adjunct (in this case, the “dancing” would be attributed to the subject, that is, “I”); and secondly, the “NP + *-ing* form” functions as a constituent (“*John dancing*”), as an internal argument of the matrix verb and, consequently, we can claim that the *-ing* form has an “eventive” reading.

### III.4. The relationship between verbs of physical and cognitive perception

The constructions with *-ing* have been invariably compared with similar constructions with to-infinitive in order to explain the status of the *-ing* form. In this paper, we propose to compare similar *-ing* constructions with cognitive and physical verbs respectively. There are two arguments in favour of doing so: i) firstly, a NP and *-ing* form with cognitive perception verbs have been interpreted<sup>2</sup> as one constituent, and ii) secondly, due to the “cognitive resemblance” of cognitive and physical verbs, we expect a similar analysis to hold for physical perception verbs.

#### III.4.1. The “cognitive resemblance” of cognitive and physical verbs

According to Givon’s classification (1993a and 1993b) physical and cognitive perception verbs both belong to the same semantic group: “Perception-cognition-utterance (PCU) verbs”. The subject of the main verb is a conscious human agent who perceives a state or event (1993a: 133). The main clause codes mental activity by means of a verb of perception (1993b: 4). As for the complement clause, it functions as the object of the mental activity depicted in the main verb (1993a: 133).

The term “cognitive perception verb” is restricted to verbs having a mental picture of the event depicted by the complement clause (e.g., “imagine”, “recollect”, “remember”, and “see”

in its abstract sense) and implies “, *conceptualiser’s ability to form pictures in her/ his mind about what something could be like, something which is not actual before the eye or within experience*” (Hamawand 2002: 208). For instance, in *I remember Mary singing*, this sentence can be interpreted as follows: “I can see in my mind this: Mary is singing, I can see this not because it is happening to me now but because it is part of my experience”.

We present briefly the four cognitive processes these verbs share:

1) An episode of physical or cognitive perception has a limited duration that can be thought of as a temporal viewing frame. The physical or cognitive apprehension is therefore restricted to that portion of event.

2) There is always some kind of temporal overlap between the main verb and the *-ing* form: with perception verbs there is a full coincidence of the main-clause process and the “restricted portion of event” depicted by the *-ing* complement: the restricted portion temporally coincides with the frame.

3) In perception, the main subject is an observer or an experiencer (Croft 1993) (represented by a “smiley” in Figure 3) rather than an agent; in fact the observer is not under obligation to carry the complement content, and the main verb profiles a perceptual relationship between its subject and the complement scene: in fact it is a two-way causal relation and it is represented as follows:

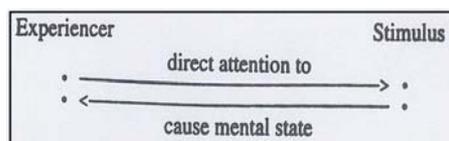


Figure 2. Croft’s schema of causation in perception (1993: 64)

The observer must direct his / her attention to the stimulus and then the stimulus causes him to enter into a particular mental state. (Croft 1993: 64)

“Perceptual commitment” is the principle governing the verbs of physical and cognitive perception. We have created this term for the purpose of the analysis and it implies an observer who physically and cognitively perceives directly the content of the complement clause.

4) Both in physical and cognitive apprehension, the *-ing* form symbolizes a directly and immediately perceived event: the observer construes an event as seen from a very close perspective (this is represented by the presence “on stage” of the “smiley”) (Verspoor 1996: 439); there may be other portions of the *-ing* form not physically and cognitively perceived within the viewing frame (this is symbolized by a wavy line).

The following figure illustrates the former observations:

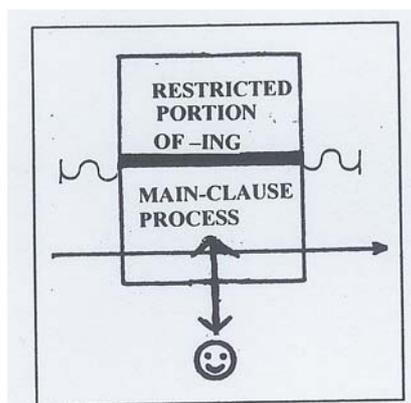


Figure 3. Physical and cognitive perception verbs' cognitive processes.

In figure (3), a) the inner rectangle stands for the temporal viewing frame in which physical and cognitive perception takes place; b) a bold straight line and a wavy line represent the restricted portion of the event, and other portions not physically and cognitively perceived, respectively; c) the main verb is represented by an horizontal arrow and shows some temporal overlap with the *-ing* form; d) the “smiley” symbolizes the observer and syntactically functions as main clause subject; and finally f) the double arrow stands for the “two-way causal relation”.

#### **III.4.2. Participial and gerundial interpretations of physical and cognitive perception verbs.**

In the literature on perception the *-ing* form is interpreted as having a participial and a gerundial interpretation with physical and cognitive perception respectively. In *I see my father diving into the sea*, the speaker places the emphasis only on part of the diving process, so it could be claimed that it is quite concrete. In *I remember my father diving* the main clause subject conceptualises only the internal configuration of the complement event, which occurs at the moment of remembering (Hamawand 2002: 65-66). However, we claim that these verbs have the same possible readings.

Cognitively speaking, the participle represents a single or series of states of an event, it symbolizes an imperfective atemporal relation viewed from an “internal perspective”, it's bounded (Langacker 1990: 92); while the gerund due to the effect of nominalization (a single or series of events are profiled collectively, as an abstract region) represents an unbounded event (Langacker 1990: 98). The terms “bounded” and “unbounded” can be redefined in terms of “concrete” and “abstract” for practical reasons. Therefore, the distinction between a gerund and a participle can be put in the following terms: the more concrete the event, the more participial the *-ing* structure is and the more abstract, the more gerundial (Verspoor 1996: 417-454), as seen in:

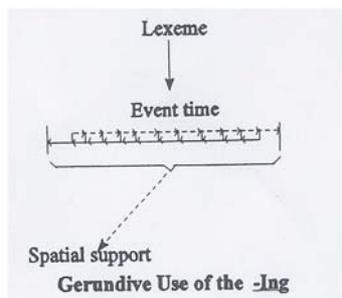


Figure 4. Gerundial Interpretation

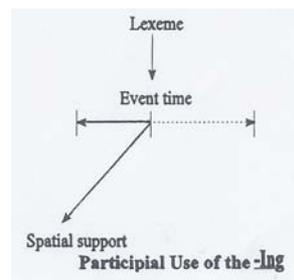


Figure 5. Participial Interpretation

However, whenever the *-ing* complement is the object of a transitive verb, and is preceded by a personal pronoun in the objective or an uninflected noun (as in *I remember him / my father diving into the sea*, or *I see him / my father diving into the sea*), the interpretation is unclear (concrete / abstract), there is a certain contextual fluctuation:

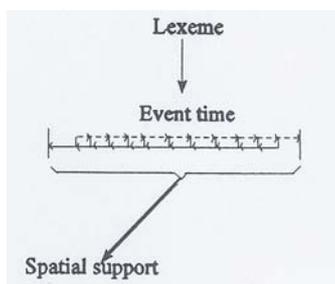
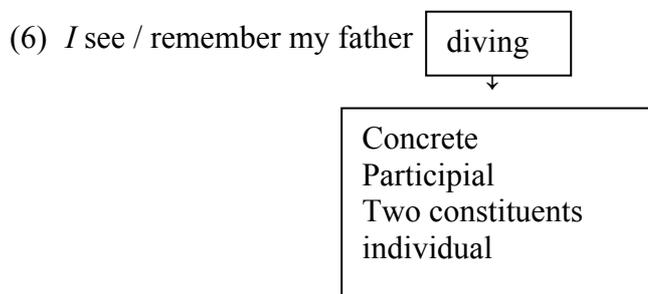
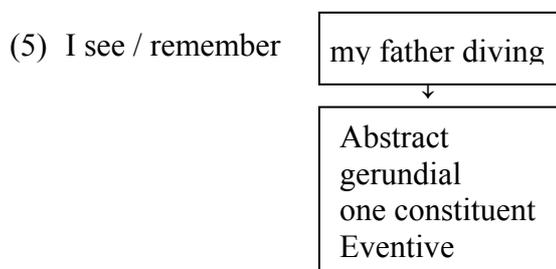


Figure 6. Gerundial / participial interpretation

These sentences have an explicit “spatial support“ (*him / my father*) and so there is a certain contextual fluctuation:



When the interpretation is abstract, the *-ing* form syntactically functions as a gerund; in addition, NP and gerund constitute a single unit and have an “eventive interpretation” as in (5), henceforth “abstract reading”. In contrast, a concrete interpretation is always linked to the

syntactic function of participle; the participle and the NP are interpreted as two constituents and have an individual interpretation<sup>3</sup> as in (6), henceforth “concrete reading”.

The “abstract reading” of physical and cognitive perception verbs is shown in the following figures (7) and (8) respectively:

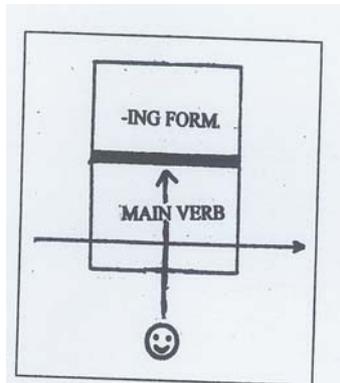


Figure 7. “abstract reading” of physical verbs

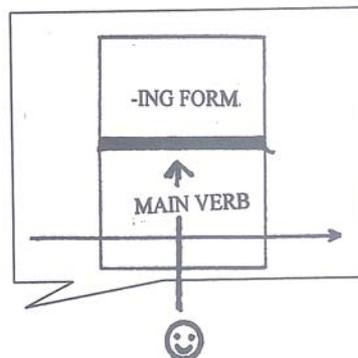


Figure 8. “abstract reading” of cognitive verbs

In the description of the “abstract reading”, there are two main issues: 1) the conceptualisation of the event; and 2) secondly, the role of the main clause subject.

1) In the “abstract reading”, the *-ing* complement clause evokes its event as a whole, it is seen in its entirety; the observer or experiencer conceptualises the internal configuration of the complement event: he/she conceptualises the event as a ‘thing in itself’ (this is represented by a bold straight line) (Duffley 1995: 5).

2) And secondly, the main clause subject is fully responsible for the content of the complement clause: he/she can take the initiative in suspending the event complement by stopping the remembrance, the image or the physical perception of it (this is symbolized by a vertical arrow).

We could end up stating that in sentences such as *I remember my father diving into the sea*, or *I see my father diving into the sea*, the *-ing* has the following meaning: I recall/see the diving performed by my father, with emphasis on the event, hence gerund.

The “concrete reading” of physical and cognitive perception verbs is shown in the following figures (9) and (10) respectively:

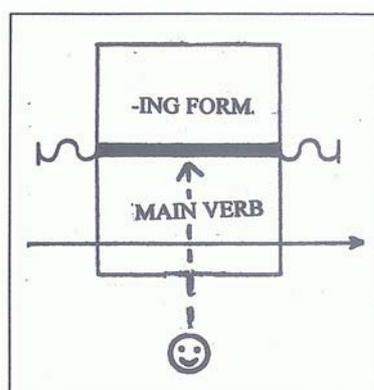


Figure 9. “Concrete reading” of physical verbs

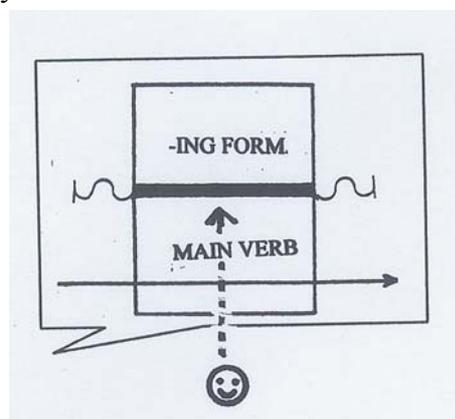


Figure 10. “Concrete reading” of cognitive verbs

In the description of the “concrete reading” both 1) the conceptualisation of the event and 2) the role of the main clause subject play an important role.

1) As far as the conceptualisation of the event is concerned, it is evoked as something incomplete: it entails a partial view, something caught at some point between its beginning and its end (this is stressed by the presence of a bold straight line and a wavy line: the contrast of “perceived” and “non-perceived” portions of the *-ing*). (Duffley 1995: 4); consequently, the observer or experiencer views the situation as an ongoing state of affairs.

2) And secondly, the main clause subject is not fully responsible for the content of the complement clause: the complement clause subject can suspend the action or decide to “go out of” the viewing frame (this is symbolized by a vertical dashed arrow).

In sentences such as *I remember my father / diving into the sea* and *I see my father / diving into the sea*, the *-ing* can be interpreted as I recall / see my father as he dived, with emphasis on the performer, hence a participle.

#### IV. CONCLUSIONS

On the whole, our analysis suggest that in English, the “NP + *-ing* form” can be interpreted as a single constituent with physical perception verbs.

We have provided evidence from different sources. Semantically, the “NP + *-ing* form” functions as a direct object. Syntactic criteria which license the attribution of the DO function to the complex constituent “NP + *-ing* form” are: reformulation by genitive or a possessive pronoun, the possibility of pseudo-cleft sentences and pronominalization. Finally, thematically “the NP + *-ing form*” has been shown to bear an “eventive” reading.

Our hypothesis is further supported by the analysis of the relationship between physical and cognitive perception verbs. We have shown that these verbs allow the same readings: an “abstract reading” and a “concrete reading”. We think that it is precisely a question of “first” and “second” percept: physical and cognitive perception verbs are more easily associated with one particular percept each, “first” percept, but both have a “second” percept as a second possibility. Thematically, the first percept of physical perception verbs is an “individual” and secondly an “event”; whereas for cognitive perception verbs it is the other way around: an “event” and an “individual” as its first and second logical percept respectively. The literature provides the “first” reading for each kind of verb, but in order to have a complete picture of perception verbs with *-ing* form, one should bear in mind the two possibilities, “first” and “second” readings.

Although our results are preliminary, we claim that *the ing* form in this construction (preceded by an NP and having as main verb a physical perception verb) has two possible readings: a “concrete reading”, hence participle, and an “abstract reading”, hence gerund.

**NOTES:**

1. Hamawand (2002), Langacker (1991) and others.
2. The percept role of this construction is an individual (NP), and the participle functions as its complement; note the term “individual” refers to all perceptible objects, either human entities or things (i.e. *I see / remember the sea moving*).

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