

## NOMINALIZATION MECHANISMS IN VERBA PERCEPIENDI COMPLEMENTS

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### ABSTRACT

The article deals with the interplay of syntax and semantics manifested in the domain of perception. The nominalized complements of *verba perceiving* display certain syntactic patterning that is argued here to be semantically motivated. The aim of this paper is to show that the type of nominal derived from a dependent complement clause depends on the semantics of the perception verb in the matrix clause. The author attempts to prove the above thesis by examining the derivational mechanism of nominalization from two perspectives: semantic and syntactic. For this purpose English and Russian examples will be contrasted. English is used because it has a particular type of non-finite complementation with perception verbs, whereas Russian examples are illustrative because both active present and active past participles (прыгающий – прыгнувший) are syntactically more mobile than their English counterparts in that they can occupy both prenominal and postnominal positions.

From the pragmatic-semantic point of view, the speaker describing a perception event may focus either on the perceived process or the participant in the process. Depending on different pragmatic foci, two nominalization mechanisms may operate on the embedded clause that codes the perceived event. In syntax, this results in two types of nominalization products depending on the matrix perception verb. With verbs of vision the sentential complement is nominalized into a participle modifying the head noun that codes the participant; with verbs of hearing the sentential complement is nominalized into a genitive noun phrase.

### 1. Distributional scope

The complements of the verbs of perception are commonly formalized as noun phrases (NPs); but can all types of nouns co-occur with these verbs?

It is accepted in the literature that nominal complements referring to physical entities in space do not represent any semantic or grammatical challenge; they are rather straightforward in their meaning and function. The examples (1-5) below illustrate the use of the central lexical exponents of the perception verbs in English, ordered according to the perception hierarchy. According to this theory, the “higher”

verbs are verbs of visual and auditory perception, while the exponents of the other three senses belong to the verbs of “lower” perception (Miller and Johnson-Laird 1976).<sup>1</sup>

- (1) I saw/looked at the girl/milk.
- (2) I heard/listened to the girl/\*milk.
- (3) I smelled the milk.
- (4) I touched the milk.
- (5) I tasted the milk.

Verbs of visual perception co-occur with both animate and inanimate objects.<sup>2</sup>

However, agentive verbs of “lower” perception bind only with “inanimate” nouns.<sup>3</sup> Alternative use is considered to be a metaphoric extension of the prototype. Agentive verbs are perception verbs that code a volitional event, e.g., their first arguments refer to a human instigator of the event coded by a verb of perception. Verbs of hearing are semantically more complex due to the nature of their second argument. They can refer either to a source of sound (animate or inanimate objects) or to a result of sound-producing process encoded by a noun/gerund.

There are two semantic constraints on syntactic transformations of perception verb complements:

a. Only subordinate clauses of the verbs that denote primary perception (processes) are susceptible to nominalization operations. The “lower” perception verbs typically do not subcategorize for sentential complements. The following examples illustrate the complementation of the lower perception verbs:

- (6) ?I smelled the soup boil/boiling.
- (7) \*I tasted the soup boil/boiling.

<sup>1</sup> This semantic hierarchy has proven to have far-reaching effects in all segments of language: in syntax, in the lexicon of respective semantic fields (richness of vocabulary), as well as in metaphoric extension such as the ability to build phrases and idioms (cf. Cooper 1974, 1976).

<sup>2</sup> The Russian translations of the English examples support this claim. English does not lexically differentiate between agentive and patientive “lower” perception verbs, while Russian does. In English the same verb, but with different subcategorization frames, is used to code both a volitional event and an involuntary sensation. In Russian, another verb or expression should be used to describe the latter meaning.

Я видел/смотрел (на) девочку/молоко.

Я слышал/слушал девочку/\*молоко.

? понюхал/\*пахло молоко.

? попробовал молоко.

? дотронулся до молока.

<sup>3</sup> Agentive and patientive perception verbs differ as to whether the human participant is a conscious instigator of the perception event or a passive receiver of external sensory stimuli e.g., *listen-hear*, *watch-see* (see Rogers 1974, Viberg 1983, Kopytko 1990).

However, with the verb *feel* some examples seem to be acceptable:

- (8) I felt the spider crawl/?crawling up my leg.
- (9) I feel the spider \*crawl/crawling up my leg.

It seems that the acceptability depends on the temporal frame of both main and subordinate events. A perception event with present time reference (*feel*) requires a concurrent, unbounded event (9). A past sensory event combines with a telic, completed action (8).

b. The second constraint is that finite complements of primary perception verbs are nominalized into a prepositional phrase (PP). “Higher” perception verbs describing a non-overlapping perceived event become in fact verbs of cognition (van der Meer 1994, Lyons 1977).<sup>4</sup> Therefore, they are excluded from this analysis. Examples (10) and (11) illustrate the difference between two types of *hear*:

- (10) Я слышала что девочка плакала. > Я слышала о девочке  
(о плаче). (PP)  
I heard that the girl cried. > I heard about the girl/?about the crying.
- (11) Я слышала как девочка плачет. > Я слышала плач девочки. (NP)  
I heard the girl crying. > I heard the crying of the girl.

## 2. Derivation and communicative perspective

Our discussion is based on the thesis that subordinate processual clauses can undergo two types of nominalization transformations depending on the pragmatic focus of the utterance: whether the emphasis is on the participant of the perceived process/event or on the unfolding event itself (process).<sup>5</sup>

The pragmatic focus of the embedded event determines the main syntactic property of the complement clauses of perception verbs, that is, the presence of a joint or external argument that constitutes the structure of both matrix and subordinate predications. The shift in the speaker’s focus triggers the advancement (raising) of the second argument from the embedded proposition to the main, which causes a change in the syntax of the sentence. The subject of the subordinate clause moves into the propositional frame of the matrix clause; this, in turn, obscures and erases the borders between the two clauses.

<sup>4</sup> See note 5.

<sup>5</sup> “Processual” clauses are non-finite complements in English and *как*-clauses in Russian. They code an action that takes place simultaneously with the perception: both actions overlap in time (Dik and Hengeveld 1991). The finite complementation in both languages codes a perceived event that has taken place prior to perception. The perceiver has a mental image of the event and for this reason the verbs of hearing and seeing shift semantically into the domain of cognition.

The non-finite complement of the perception verb in English is an example of a conversion of a prototypical complement clause (finite) to its nominalization via a non-finite clause.<sup>6</sup> As mentioned above, depending on the pragmatic focus of the perceived embedded event, the two types of processual complements derive into two types of nominalization transformations. The resulting two kinds of nominals differ in their referential content: the first nominal points to the perceived process itself, the second — to the participant of this process. The mechanisms of nominalization are illustrated by Russian and English examples given in the following sections. According to the degree of unification between the event of perception and the perceived event two stages of clause integration can be distinguished: a non-unified event and a unified one. As will be shown below, the derivation can take place only in the unified event frame.

### 2.1. A non-unified event

The perception event is viewed as consisting of two linked events: the speaker's perception and the perceived activity. In the surface structure the perception event is coded by a biclausal structure: main and subordinate. If the speaker focuses on the event itself, the second (joint) argument remains in the embedded proposition. Its surface realization will be a "processual" *как*-clause. It may code a bounded or an unbounded event, which is typically expressed by the aspect of the subordinate verb.

#### 2.1.1. Boundedness of the second event

The perceived event is seen as a bounded, telic action – information signaled by the perfective aspect of the subordinate verb.<sup>7</sup> This interpretation imposes aspectual restrictions on the nominalization outcome in the second phase, i.e., in the unified event frame. The constraint is that the derived NP must be a resultative, count noun. For instance, the English *cry* has a momentary reading, but not its Russian equivalent *плач* because the latter denotes a longer activity. This is evidenced in the complement with the imperfective subordinate verb whose nominalization is acceptable.

- (12) Я услышала как девочка заплакала. > \*Я услышала плач девочки.  
 (13) Я услышала как девочка плачет. > Я услышала плач девочки.

<sup>6</sup> According to Langacker (1991) the prototypical finite clause when "de-processed" (i.e. stripped of its temporal reference) loses its finiteness and finally is nominalized. The process of "de-procession" goes through several stages:

process > complex atemporal relation > simple atemporal relation > thing/notion.  
 In English this scalar transition is coded by the derivation of a finite verb > present participle > gerund > noun.

<sup>7</sup> See Comrie (1976) and Tobin (1993) for detailed discussion of aspect.

- (14) I heard the girl cry. > I heard the girl's cry.

With the verbs of visual perception the subordinate event implies anteriority:

- (15) Я видела как девочка прыгнула через лу'у. >  
 (16) Я увидела прыгнувшую через лу'у девочку.  
 (17) I saw the girl jump over the puddle. >  
 (18) I saw the girl who had jumped over the puddle.

#### 2.1.2. Unboundedness of the second event

The second proposition renders an atelic, unbounded event. It means that it expresses an open-ended process coded by the imperfective aspect of the subordinate verb. In this case, the result of the nominalization in the second stage of the derivation (see Section 2.2) is a "processual" noun. The English participial clause condenses into a noun phrase whose head is the noun/gerund denoting the embedded process itself. The complements of the verbs of auditory perception display a tendency for this type of nominalization.

- (19) Я слышала/видела как девочка плачет. > Я слышала/  
 \*увидела плач девочки.  
 (21) I heard/saw the girl crying. > ?I heard/\*saw the crying of the girl.

### 2.2. A unified event

The perception event is viewed as a single unified event in which the speaker's perception is focused on the participant of the perceived action.

The formal consequence of such semantic blend is a syntactic fusion: the event is formalized by a single sentence, in which the main and the subordinate clauses are **fused**.<sup>8</sup> The direct object realization of the joint argument in the matrix predication blocks the sentential formalization of the embedded event, thus producing a subordinate relative *как*-clause or a participial clause.

In line with the previous discussion, we can presume that nominalization in Russian is carried out in two stages:

- a. The advancement of the internal argument to the propositional frame of the first predication results in meaning shift. Consequently, a shift occurs from a non-unified event frame to a unified one.

<sup>8</sup> Givón (1993) argues that a unified complex event is coded in syntax when the second event is expressed by a nominal; then the event integration is maximal. In the opposite case, when it is viewed as separate from the first, the second event is the least incorporated and has the form of a finite clause. English perception non-finite complements have a high integration degree. By the same token, the Russian equivalent *как*-clauses should be less fused with their matrix clauses.

- b. The *как*-clause transforms into a modifier (with verbs of vision) via morpho-syntactic adjustment of the surface realization to the new modification semantics.

The first stage is not formalized in Russian; the semantic-syntactic derivation takes place in the underlying structure. Only the product of the second stage is coded by the surface realization (see 22). Conversely, English does not formalize the non-unified event frame, and the first stage is realized by a non-finite clause (23). What follows is a more detailed description of the above processes.

### 3. Mechanisms of nominalization

#### 3.1. Formation of a pseudo-relative clause

The advancement of the second argument to the propositional frame of the first predication, i.e., in the direct object position of the matrix clause, triggers a modification reading of the *как*-clause. In other words, subject-to-object movement in a *как*-clause results in the formation of a pseudo-relative *как*-clause.

The raising movement triggers syntactic conversion of a two-clause complex sentence into a single simple sentence with an embedded modifying clause or phrase (cf. van der Auwera 1985). Visual perception complements show a tendency for this type of modification transformations. In Russian, the raising movement is not formalized syntactically, but the next stage of modification transformation is realized on the surface.

- (22) Я видела как девочка плакала. > \*Я видела девочку как она плакала >  
Я видела девочку которая плакала. > Я видела плачущую девочку.
- (23) I saw the girl when she was crying > I saw the girl crying. > I saw the girl who was crying. > I saw the crying girl.

But compare (22) with (24) and (25):

- (24) Я слышала девочку которая плакала. >  
Я слышала плачущую девочку.  
I heard the girl crying. > I heard the girl who was crying.
- (25) Я слышала как девочка плачет. > Я слышала плач девочки.  
I heard the girl crying. > I heard the girl's cry.

Examples (24) and (25) show that the complements of the verbs of hearing derive into two types of nominal phrases. The reasons for the difference in the nominalization output are explored in the next section.

#### 3.2. Nominalization

The pseudo-relative *как*-clause transforms into an active participle because its form must adjust morpho-syntactically to the new modification meaning: the *как*-clause converts into a modifier that precedes the head noun phrase (the realization of the second argument). The resultant NP consists of a participle and a noun.

It is important to understand that the two factors that cause nominalization of the perception complement clause work hand in hand. The derivation of the subordinate verb into a participle is caused by the shift of the pragmatic focus from the action (verb) to the second argument (NP). The other reason is the atemporal reading of the embedded proposition brought about by the unbounded character of the event (signaled by the aspect of the predicate). It loses its verbal characteristics (reference in time) and in the process gains modifying properties that describe the antecedent NP. English lacks the formalization of the starting stage of the derivation — a clause equivalent of the *как*-clause, but goes straight to the modification transformation (Section 2.2.2). On the other hand, in the surface realization, Russian does not code the initial stage: the advancement of the second argument into the propositional frame of the matrix predication. Like its English counterpart (the participial clause with a modifying reading), it undergoes morpho-syntactic transformation that turns it into a participle preceding the head NP. The noun refers to the participant of the embedded process.

- (26) \*Я видела девочку как она плакала > Я видела девочку которая плакала. > Я видела плачущую девочку.

- (27) I saw the girl crying > ?I saw the girl who was crying > I saw the crying girl.<sup>9</sup>

What is subjected to nominalization depends on the pragmatic focus of the speaker; whether s/he emphasizes the participant (henceforth marked by X) or the product of the process itself (marked by Y). As was mentioned above, verbs of hearing and verbs of vision display different nominalization mechanisms due to their different semantics.

##### 3.2.1. Verbs of hearing

- a. The symbolic representation of the structure *I heard somebody/something do something* is *I heard X Y*. When the speaker wants to focus on the argument X, the nominalization process is blocked. The predicate Y, being less informationally salient, is dropped. X remains unchanged; it implies the process Y but does not lexicalize it. For these reasons X cannot be considered a

<sup>9</sup> The dubious acceptability of (27) may derive from a demand for a temporal or a locative adjunct to modify the perceived action.

*nominalization product derived from the complement clause; instead, we are dealing here with the ellipsis of the embedded predicate.*

(28) I heard the dog (X) bark (Y); I heard the baby (X) cry (Y). >

(29) I heard the dog, the baby etc. (X-participant).

b. When the speaker focuses on the perceived event itself (Y), then the verbal predicate Y can be nominalized into a noun denoting the event in its entirety. The object of perception (X) that produces a particular type of sound becomes its “owner”, and therefore is coded in the genitive case.

(30) I heard the dog (X) bark (Y); I heard the baby (X) cry (Y). >

(31) I heard the barking (Y) of the dog (X), the cry (Y) of the baby (X).

In English the product of nominalization, the nominalized process (Y) can be a process nominal as in (30) or a result nominal as in (31). It names the output of the process rather than the process itself (cf. Grimshaw 1990).<sup>10</sup> The participant in the process (the second argument) loses its pragmatic saliency and establishes a possession relation with the result of the process coded by a genitive NP. The possessor argument is typically formalized as a postnominal prepositional *of*-phrase.

### 3.2.2. Verbs of vision

These verbs employ a reverse semantic-syntactic mechanism of derivation from the pattern discussed in 3.2.1.

a. We will represent the structure *I saw somebody/something do something* as *I saw X Y*. When the speaker wants to focus on X, the nominalization process is performed on the predicate: it is transformed into a modifier attributing a certain quality to the participant (X). On the surface it is formalized by a participle that modifies the head noun.

(32) I saw the dog (X) bark (Y); I saw the baby (X) cry (Y). >

(33) I saw the barking dog. I saw the crying baby. (X-participant).

b. When the speaker focuses on the perceived event itself (Y), then the nominalization process depends on its boundedness. Nominalization is pos-

<sup>10</sup> According to Grimshaw (1990) result nominals differ from complex event nominals in that the former can pluralize and have a determiner – i.e., behave like count nouns. Gerunds are process nominals, they code an unbounded event (the result nominals code a bounded one) and they behave like non-count nouns. Similarly to the complex event nominals the result/process nominals are argument-taking nouns. The argument is coded by a postnominal genitive (*of*-phrase in English).

sible with verbs coding unbounded processes, but it is blocked with verbs denoting telic events.

(34) I saw the dog (X) bark (Y); I saw the baby (X) cry (Y). >

(35) \*I saw the barking of the dog, the cry (of the baby). (Y – nominalized process).

## 4. Summary

For clarity, a summary of the nominalization processes of perception complements is given below in patterns A, B and C. They are classified according to the aspectual semantics of the subordinate verb and the pragmatic focus.

### 4.1. Imperfective subordinate verb

The previous discussion has helped establish two patterns of nominalization: A and B. Verbs of visual perception tend to use pattern A. The nominalization outputs of auditory verb complements are possible but semantically questionable.

#### 4.1.1. Focus on the participant

The subordinate clause nominalizes into an NP containing a head noun premodified by a participle.

A. I saw X Ying > **I saw Ying X**  
I heard X Ying > **?I heard Ying X**

(36) I saw the girl singing. > I saw the singing girl.

(37) I heard the girl singing. > ?I heard the singing girl.

The border-line acceptability of (37) derives from the need for temporal or locative modifier of the auditory event.

(38) I heard the singing girl in the garden/yesterday...

The Russian examples conform to pattern A as well:

(39) Я видела девочку которая прыгала через лу'у. >  
I saw the girl jumping over the puddle.

(40) Я видела прыгающую через лу'у девочку.  
?I saw the jumping over the puddle girl.

(41) ?Я слышала девочку которая прыгала через лу'у. >  
?I heard the girl jumping over the puddle.

- (42) ?Я слышала прыгавшую через лу'у девочку.  
?I heard the jumping over the puddle girl.

#### 4.1.2. Focus on the process

The subordinate clause nominalizes into an NP containing a head noun postmodified by a genitive NP.

- B. I saw X Ying > \*I saw Ying of X  
I heard X Ying > **I heard Ying of X** (restrictive use)

- (43) I saw the girl singing. > \*I saw the singing of the girl.

- (44) I heard the girl singing. > ?I heard the singing of the girl.

The B nominalization pattern has a limited range of application because not all verbs have processual nominal equivalents. (e.g., *fire – a shot – shooting; стрелять – выстрел – стрельба*; but: *страдать – φ - страдание*). As in English, the pattern B in Russian works only with verbs of visual perception:

- (45) Я видела/слышала как девочка прыгала через лу'у >  
I saw the girl jumping over the puddle.

- (46) ? \*видела/\*слышала пры'ок девочки через лу'у >  
\*I saw/heard the jumping over the puddle of the girl.

The result nominal *пры'ок* has no processual counterpart (?прыгание). However, with a large number of processual nominals such as *хохот, смех, плач* etc. the pattern is productive as in:

- (47) Я слышала рыдание девочки в углу.  
I heard the sobbing of the girl in the corner.

#### 4.2. Perfective subordinate verb

There are two patterns of nominalizations with perfective subordinate verbs: B<sub>1</sub> and C. The B<sub>1</sub> pattern is formally identical with B, but differs in the type of nominal. The former is formed with a processual nominal while the latter with a result. Being variations of the same pattern they are marked by the same symbol B.

Verbs of auditory perception typically employ pattern B<sub>1</sub>, whereas Russian verbs of visual perception use pattern C. English does not apply this pattern because it lacks the formal equivalent of the Russian active past participle.

##### 4.2.1. Focus on the process

The subordinate clause nominalizes into an NP containing a head noun postmodified by a genitive NP. The head is a result nominal.

- B<sub>1</sub>. I heard X Y > **I heard Y (of X)**  
I saw X Y > ?**I saw Y (of X)**

- (48) I heard the girl sing. > I heard the song (of the girl).

- (49) I saw the girl sing. > \*I saw the song (of the girl).

- (50) Я видела как девочка прыгнула через лу'у. >  
I saw the girl jump over the puddle. >

- (51) Я видела пры'ок девочки.  
?I saw the girl's jump.

##### 4.2.2. Focus on the participant

The subordinate clause nominalizes into an NP whose head is preceded by a participle. The head is a non-event noun modified by a present or past participle depending on the aspect of the nominalized verb.

- C. I saw X Y > I saw X who Yed > **I saw Yed X** (in Russian only)

- (52) Я видела девочку которая прыгнула/прыгала через лу'у. >  
I saw the girl jump over the puddle. >

- (53) Я видела прыгнувшую/прыгающую через лу'у девочку. (I saw Yed X)  
\*I saw the jumped over the puddle girl. (the girl who jumped).

#### 5. Conclusion

It has been established that factors such as the internal structure of the perceived event (unboundedness) and the pragmatic focus of the speaker determine the choice of a particular nominalization pattern of *verba percepiendi* complements. In order to reach relevant generalizations reflecting the distribution of nominalization patterns, these factors are related to the type of perception verb in the discussion below. Accordingly, each of the two types of perception verbs manifests certain regularities and tendencies in the nominalization of its complements.

Three nominalization patterns are possible with matrix verbs of VISUAL PERCEPTION:

- imperfective pattern (A) with focus on the participant;
- perfective pattern (C) with focus on the participant (in Russian);
- perfective and imperfective pattern (B) with focus on the process (restrictive use due to the semantics of *see*).

The following nominalization patterns are possible with matrix verbs of AUDITORY PERCEPTION:

- a. imperfective pattern (A) with focus on the participant;
- b. perfective and imperfective pattern (B) with focus on the process (restrictive use due to the lexicon “gaps”).

The above analysis shows that the nominalization mechanisms operating on the complements of the verbs of vision and hearing are structured, regular, and semantically motivated. Two productive patterns of complement nominalization in English and three in Russian have been filtered; in addition to those, one pattern is of limited productivity. The complements of the verbs of vision are most susceptible to nominalization, because they can be condensed to two (three in Russian) kinds of NPs, compared to one NP pattern in auditory verbs. The former focus on the participant of the perceived embedded event, the latter on the “product” of the event itself. In semantic terms, the second event of the former derives into an attribute that modifies the second argument; the second event of the auditory perception derives into another argument that refers to a type of sound. The interplay of two factors: pragmatic focus and the aspectual semantics of the embedded proposition determine the choice of pattern. In addition, the semantics of the perception predicate influences the distribution of nominalization patterns.

Although English perception complements were not the subject of this paper the discussion on the nominalization of verba *percepiendi* complements has touched upon the nature of their English counterparts. The paper suggests that the English non-finite perception complements are in fact a syntactic blend of two clauses into a single one due to the need for participant prominence. They are like “unfinished” nominalizations where the “tipped” semantic balance between the two foci (participant and process) is re-established by aspect only (*ing*-form vs bare stem). In Russian, the balance is regulated by both aspect and biclausal syntax.<sup>11</sup>

<sup>11</sup> Moreover, the process of nominalization is enabled by the advancement of the second argument into the propositional frame of the main predication. The raising results in the formation of a pseudo-relative *как*-clause as a transitory stage. This stage is not formalized in Russian as compared to some Balkan languages Macedonian.

a. Vidov kako plače devojčeto. > Go vidov devojčeto kako plače. > ? > Go vidov devojčeto što plače. > ?

I saw as the girl was crying. > I saw the girl as (she) was crying. > I saw the girl who was crying.

The nominalization process stops here. In Russian it goes on to pattern A, while in Balkan languages pattern A is not activated because of the absence of active participles. But in Greek, Bulgarian and Serbian it proceeds one stage further than in Macedonian: the subordinate clause converts from finite to non-finite which results in its tighter integration with the main predication. This stage occurs between the raising and relativization stage of nominalization, e.g. in Greek:

b. Iða pos klei to koritsi. > Iða to koritsi pos klei. > Iða to koritsi na klei. > Iða to koritsi pu klei. > ? I saw as the girl was crying. > I saw the girl as (she) was crying. > I saw the girl to cry. > I saw the girl who was crying.

It has been mentioned that the nominalization process consists of several stages, the first stage being a finite complement clause, the last – a nominal. There are intermediate stages in which the finiteness and the clausal border are lost. When perception complements are subject to nominalization they are not necessarily realized in all stages in the languages mentioned above.

In conclusion, it should be emphasized that the semantic properties of verba *percepiendi* govern their syntactic behavior. The discussion above argues that this takes place in the realm of nominalization as well. The presented analysis of the nominalization mechanisms of the perception complement clauses shows that they derive into nominal categories with different constituent structure. The form of the derived NP depends on pragmatic and semantic factors: the information focus of the utterance (coding a perception event) and the interplay of the semantic properties of the matrix verb with the aspectual semantics of the subordinate verb.

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