

Semantic roles and verbless constructions: A Finnish challenge for verb-centered approaches¹

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Abstract

Semantic roles constitute one of the most notorious notions in linguistics, because they have been defined in numerous ways depending on the author's theoretical framework and goals. Typically these definitions are somehow, more or less explicitly, based on verbs and their properties. In this paper, semantic roles are discussed from a completely different perspective; we examine genuinely verbless constructions attested in Finnish newspaper headlines. The paper addresses three main questions. First, what kinds of constructions do not need a finite verb for expressing dynamic events? Second, what kind of information remains unconceptualized in verbless constructions? Finally, what are semantic roles based on if there is no verb? The goal of the paper is to show that verbs are not needed for defining semantic roles, because an array of semantic roles can be recognized even in constructions lacking a verb.

Keywords: semantic roles, verbless constructions, Cognitive Construction Grammar, Finnish, headlines

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1. Introduction

Semantic roles and closely related concepts, such as theta-roles, thematic roles, and thematic relations, constitute a recurring topic of linguistic studies. They have been defined in a variety of ways depending on the scholar and his purposes. However, as recently pointed out by Newmeyer (2010: 689), semantic roles represent one of the most notorious and ill-defined concepts in linguistics. Already almost two decades before Newmeyer, Dowty (1991) discussed the range of their definitions and functions in linguistic theories but, as noted repeatedly in the literature, there is still no consensus, for example, on which semantic roles exist, how they should be defined, and what is the nature of the roles and the correct set of roles we need for an adequate description of languages.

In most cases, semantic roles have been taken as lexical properties of verbs; verbs are seen to assign semantic roles to their arguments. Despite a verb-centered approach, semantic roles themselves have often been defined independently of verbs as semantic primitives (e.g. Gruber 1965; Fillmore 1968, 1970; Jackendoff 1972, 1976) or as bundles of features (e.g. Rozwadowska 1988, 1989; Reinhart 1996, 2000, 2001, 2002). On the other hand, Dowty (1989, 1991) defines semantic roles in direct relation to verbs. He sees them as prototype categories that consist of recurring clusters of lexical entailments imposed by groups of verbs on their arguments. Furthermore, Næss (2003, 2007) introduces bundles of features that resemble those in the work of Rozwadowska (1988, 1989) but do not directly correspond to semantic roles seen as subcategorized by verbs. Instead, she intends that terms like agent and patient indicate “labels for clusters of properties exhibited by noun phrases (or, strictly speaking, by their referents) when these function as core arguments of specific clauses” (Næss 2003: 106, 2007: 37). The later work of both Fillmore and his colleagues on Frame Semantics and the FrameNet Project encompasses elaborate notions of several linguistically relevant role types of which “frame elements” and “semantic roles” relate most directly to the aforementioned notions: frame elements are event participants involved in semantic frames evoked by lexical units, whereas semantic roles are their “linguistically motivated abstractions in that they pick out specifically those properties that tend to display the same behavior in morphosyntax” (Fried & Östman 2004: 42). Finally, in her Cognitive Construction Grammar approach, Goldberg (1995, 2006) allows for constructions to assign arguments “argument roles”, while verbs are associated with “participant roles”. This division partly resembles the difference between frame elements and semantic roles in Fillmorean Construction Grammar, but the role types are given different theoretical statuses in the two constructional frameworks.

In addition to numerous definitions of semantic roles, the number of roles distinguished also varies drastically. For example, when dealing with subject and object selection, theories of so-called generalized semantic roles distinguish only two roles; in Role and Reference Grammar they are labeled as actor and undergoer. These “macroroles” subsume several more specific thematic relations that are based on verbal semantics (Van Valin & LaPolla 1997: 139–142). In Basic Linguistic Theory (see e.g. Dixon 2010), the number of semantic roles is usually around 15–20; in addition to agents and patients, roles such as instrument, recipient, beneficiary, path, comitative, source, and location are acknowledged. As a rule of thumb, fewer roles are needed for syntax than for lexical semantics.

Regardless of the number of roles distinguished, what most current accounts of semantic roles have in common is that they employ, in one way or another, and more or less explicitly, events and their properties when defining the semantic roles of linguistic elements. For example, Croft (1991: 149–182) suggests that the causal structure of events provides relevant semantic features on which semantic roles are based. He analyzes events by verbal decomposition, which takes the form of a causal chain. DeLancey (1991), for his part, presents a localist theory of event structure for characterizing semantic roles. Næss (2003, 2007) also defines semantic roles as participants in events, even though no direct reference to verbs is made. In other words, the events coded constitute the starting point when semantic roles are examined, and as they are coded by verbs, verbs are central in most definitions, although it is important to state clearly that not all scholars use verbs explicitly for this purpose.

The present paper adds an entry to the list of studies of semantic roles, but the roles are studied from a drastically different viewpoint. We examine semantic roles in constructions that lack a verb altogether, which naturally means that verbal semantics cannot be responsible for the role assignment. Similarly to Næss (2003: 104–106, 2007: 35–37), we define semantic roles as event-based semantic generalizations without assuming that they are subcategorized by verbs. In addition, our approach has features in common with the Cognitive Construction Grammar of Goldberg (1995, 2006) where two types of roles are identified: more coarse-grained semantic roles, or argument roles, are associated directly with argument structure constructions, and fairly detailed participant roles, for their part, are associated with semantic frames which may be expressed with a number of different verbs. In instances of argument structure constructions these roles are fused in principled ways (see Goldberg 1995: 43–66). However, since we discuss non-elliptic verbless constructions, their participant roles cannot be defined in relation to any verb either. Instead, we assume that participant roles are associated directly with semantic frames evoked by lexical units used in constructions. In fact, Goldberg

(2006: 8) has also noticed verbless constructions: “Many languages have constructions in which no verb is expressed at all. These cases are prime examples of arguments structure constructions, since their meaning cannot naturally be attributed to a (non-existent) verb.” She does not address the issue in more detail, but we will elaborate on these constructions by discussing their inherent meanings including the semantic roles of their arguments.

Our paper addresses three main topics. First, we will look at the kinds of constructions that do not need a finite verb for expressing dynamic events. Second, we are interested in the kind of information on events that remains unconceptualized if a given construction does not involve a verb. Finally, on the basis of the previous questions, we will investigate what semantic roles are based on in verbless constructions. All of this will be done by analyzing how the nominal elements in verbless constructions are formed and organized in order to express events independently, and how their lexical semantics combined with different pragmatic factors, such as world knowledge, contributes to their readings. The discussion in this paper is based exclusively on Finnish, but due to the strong theoretical flavor of the discussion, we believe that the findings of this paper have a more general relevance for our understanding of semantic roles also in other languages.

The organization of this paper is as follows. In Section 2, we will discuss previous accounts of semantic roles in more detail. This is necessary for the discussion in Sections 4 and 5. Section 3 presents our data. In Section 4, the three questions noted above will be examined, and Section 5 summarizes the most important findings of the paper.

2. Previous approaches to semantic roles

In what follows, we will discuss some of the basic ways in which semantic roles have been defined in previous studies. In other words, our goal is to briefly discuss what has been done thus far regarding semantic roles; our own way of defining semantic roles will be elaborated in Section 3. It is not the purpose of this section to exhaust the field by discussing all possible definitions of semantic roles, but we will focus on definitions that are relevant to the discussion in this paper.

A typical, yet in some cases only implicit, way to see semantic roles is that verbs constitute the basis by referring to the event denoted, while arguments are responsible for specifying the identity and the nature of participants present in typical clauses (see Eriksen et al. 2010 for a discussion of this). In this view, the verb ‘eat’ in ‘the child is eating vegetables’ refers to the

given event, while the nouns ‘child’ and ‘vegetables’ specify who is doing what to whom/what. Put another way, the verb assigns semantic roles to the arguments, and, depending on the level of abstraction, we may call ‘child’, for instance, the (affected) agent or eater and ‘vegetables’ the patient or the thing eaten. The verb that refers to the event in question is thus responsible for the semantic roles. On the other hand, the roles borne by participants may vary with different verbs. For example, one and the same participant may be more or less agentive, or more or less affected depending on context. It is important to note that individual roles are not dependent on verbs and that verbs do not assign semantic roles to arguments in a dichotomous manner, but the degree of agency or affectedness may naturally vary. For example, the causer – understood in a broad sense as covering all causers/causes of events, not only canonical agents – of ‘break’ can be a canonical agent, an involuntary agent, or a force.

However, it has been argued by, for example, Eriksen et al. (2010) that there are cases in which the division of labor between arguments and verbs may deviate from the aforementioned principle, and that there are events which cannot be divided into meaningful components. Illustrative examples are represented by meteorological events. These cannot be divided into more and less active participants in the same manner as typical events, such as ‘the child is eating fruit’, can (see also Croft 1991: 141ff). They also lack salient human participants, which makes them different from the canonical events. This has the consequence that meteorological events can, in principle, be exhaustively described by a predicate or an argument alone. For example in (1), the verb ‘come’ accompanying the noun is semantically rather vacuous and has a grammatical function:

Korean (Jae Jung Song, p.c.)

- (1) *Pi-ka /nwun-i /wupak-i o-nta.*
 rain-NOM /snow-NOM /hail-NOM come-IND
 ‘It is raining/snowing/hailing.’

Second, as was already hinted at above and as has been discussed by, for example, DeLancey (1984) and Dowty (1991) for agent and Rappaport Hovav and Levin (2008) for goal and recipient, verbs do not strictly assign their arguments a single role but allow variation. One of the roles, such as Dowty’s proto-agent, may be seen as the expected role, while deviations from it need to be highlighted, for example, by modifying the marking of argument(s). Consider:

Lezgian (Haspelmath 1993: 292)

- (2) a. *zamara-di get'e xa-na*
 Zamira-ERG pot break-AOR
 'Zamira broke the pot.'
- b. *zamara.di-waj get'e xa-na*
 Zamira-ADEL pot break-AOR
 'Zamira broke the pot accidentally/involuntarily.'
- c. **didedi-waj gam xkaž-na*
 mother-ADEL rug lift-AOR
 For: 'Mother accidentally lifted the rug.'

In Lezgian, the verb 'break', along with other labile verbs allows two roles, which can be labeled as agent and involuntary agent. In (2a), A (i.e. the agent argument) appears in the ergative case, and it refers to a canonical agent. Example (2b) illustrates the Involuntary Agent Construction of Lezgian; A appears in the adelative case, and the referent of A causes the event involuntarily. (2b) illustrates a typical example, where the deviant reading is a combination of case marking and verb semantics. A labile verb combined with adelative coding results in an involuntary reading. It should also be noted that the adelative coding of A is not possible with ordinary transitive verbs, such as 'lift', which makes (2c) ungrammatical (see Kittilä 2005 for a more detailed discussion). This underlines the fact that non-canonical marking is more intimately associated with a certain semantic role. In the canonical cases, such as (2a), in turn, the arguments coded by grammatical cases (ergative and absolutive in Lezgian) are more directly related to the semantics of the verb.

Third, the lexical semantics of arguments has been shown to play a role in determining their semantic roles (see e.g. Rappaport Hovav & Levin 2008; Kittilä 2008 for the effects of animacy on goals and recipients; Song 2011 for agents). The roles borne by arguments may be sensitive to their own semantic nature with certain verbs. Examples include cases such as 'John sent the parcel to Lisa' and 'John sent the parcel to Dunedin'. In the first case, the event denoted may, for example, be said to include an agent (or source), theme, and a recipient, while in the second case, we have a goal instead of a recipient. The main difference lies in the animacy of R (see Kittilä 2008 who also admits that animacy is not the only difference between the arguments, but their semantic roles also vary). Differently from (2), the lexical semantics of the given arguments is responsible for the attested differences. In (2a–b), the referent of A is potentially a canonical agent due to animacy, and (2a) and (2b) differ in that only in (2a) does the agent

act volitionally. In the sending events discussed, in turn, only animate endpoints of transfer have the potential of being recipients.

Finally, in Cognitive Construction Grammar (Goldberg 1995, 2006), semantic roles may be seen as constructional properties in such a way that the lexical semantic features of a noun do not strictly define the roles that it can bear, nor do lexical semantic features of a verb directly determine the roles that can appear in a clause together with it. Instead, semantic roles are based on constructions that encode event types basic to human experience (Goldberg 1995: 39–40). Speakers may construe states-of-affairs in the world from different vantage points and thus portray individual participants in different roles (see also DeLancey 1991). Typically, it is possible to use a single verb in different constructions, which then impose different semantic roles as well as other semantic and pragmatic properties on their arguments. For instance, traditionally the semantic role of *a golden key* has been labeled as instrument in both *Hannah opened the gate with a golden key* and *A golden key opened the gate*, whereas from the perspective of Cognitive Construction Grammar it is possible to analyze the latter case such that *a golden key* is conceptualized metaphorically also as an agent (or force, if the need arises to differentiate between animate and inanimate instigators). In other words, cognitive linguistics aspires to analyze how the world can be construed using language, not the world itself, and to recognize conventional pairings of form and meaning (e.g. Leino 2001: 34). Nevertheless, this does not exclude the possibility of analyzing verbal semantics at a different level of description, that is, in terms of participant roles, which are extralinguistic entities. In Cognitive Construction Grammar this premise can be seen in the formulation that argument structure constructions bear semantic roles that are semantically constrained relational slots in the dynamic scene associated with the construction. They are fused with participant roles which, for their part, are relational slots in the dynamic scene associated with the verb (Goldberg 1995: 43–52).

In addition to the different theoretical statuses given to semantic roles, there are clear differences in how the differences between suggested roles are manifested and how seriously formal differences between the roles should be or have been taken. When should we speak of distinct roles and when not? In the most evident cases, formal differences are semantically motivated, as in (3) (see also (2)):

Finnish (personal knowledge)

- (3) a. *lapsi rikko-i maljako-n*
 child break-3SG.PST vase-ACC

‘A/the child broke a/the vase.’

- b. *lapsi viha-a maljakko-a*
 child hate-3SG.PRS vase-PTV
 ‘A/the child hates a/the vase.’

The event denoted in (3a) can be said to include an agent and a patient, while in (3b) the roles present can be defined as experiencer and stimulus. This difference is manifest also formally in that O (i.e. the object of a transitive clause) bears accusative coding in (3a), while in (3b) it appears in the partitive case. In (2) from Lezgian, the patient role is maintained but there are evident differences in the agent role. In (2a), we are dealing with a canonical agent, while in (2b), the event denoted is instigated accidentally and the agent is best labeled as an involuntary agent in the sense of Haspelmath (1993: 292) and Kittilä (2005).

In (4) and (5), in turn, the differences are merely semantic:

Finnish (personal knowledge)

- (4) a. *lapsi maala-si maljako-n*
 child paint-3SG.PST vase-ACC
 ‘A/the child painted a/the vase.’
 b. *lapsi näk-i maljako-n*
 child see-3SG.PST vase-ACC
 ‘A/the child saw a/the vase.’

Lezgian (Haspelmath 1993: 292; Moor 1985: 112)

- (5) a. *zamara-di get'e xa-na*
 Zamira-ERG pot break-AOR
 ‘Zamira broke the pot.’
 b. *ničayval-di ruš q'ena*
 disease-ERG girl killed
 ‘The disease killed the girl.’

Similarly to (2)–(3), examples (4a)–(5a) can be analyzed as including an agent and a patient, and the marking pattern is NOM-ACC or ABS-ERG depending on the language. As in (3b), in (4b) we have a similar event with an experiencer and a stimulus. However, in contrast to (3b), the semantic difference is not manifested formally. In (5), we are dealing with a similar case;

differences between canonical agents and forces are not made explicit formally. Semantically, the differences between the roles are evident as they are in (2) and (3), but they have no formal realization.

Semantic roles are descriptive and theoretical tools developed and used by linguists for analyzing and describing languages. This makes formal differences central to their definition, especially in grammatical description; in verbal semantics, in turn, formal differences are less relevant. In other words, any well-grounded distinction between semantic roles should be based on formal evidence (see e.g. Lazard 1998: 163–166; Næss 2007: Chapter 3). This makes examples (4) and (5) potentially problematic for the analysis of semantic roles. (However, a considerable part of the problem is that, in individual studies, particular roles are often not defined in any way, so it is not at all clear whether certain labels of semantic roles in different studies refer to the same roles or not.) Put another way, we do have a distinction between patients and stimuli (of emotions) in Finnish, and between prototypical and involuntary agents in Lezgian, because these roles are formally distinct. On the other hand, we do not have a distinction between forces and agents in Lezgian, and patients and other stimuli in Finnish. However, differences between semantic roles cannot be made in such a dichotomous manner but other things must be considered. A case in point is illustrated in (6):

Finnish (personal knowledge)

- (6) a. *opettaja lähett-i kirja-n lapse-lle*
 teacher send-3SG.PST book-ACC **child-ALL**
 ‘The teacher sent a/the book to the child.’ (recipient)
- b. *opettaja lähett-i lapse-n talo-lle*
 teacher send-3SG.PST child-ACC **house-ALL**
 ‘The teacher sent a/child to the house.’ (goal)
- c. *opettaja lähett-i lapse-n rehtori-n luo*
 teacher send-3SG.PST child-ACC **principal-GEN to**
 ‘The teacher sent the child to the principal.’ (vicinal goal)

The examples in (6) illustrate three roles labeled as recipient (6a), goal (6b), and vicinal goal (6c) by Kittilä and Ylikoski (2011). Semantically, as the authors discuss in detail, goal and vicinal goal are close to each other as they both denote endpoints of motion without caused possession, and they are clearly different from the recipient that involves caused possession as well. Despite this, goal and recipient are accorded the same formal treatment and marked

differently from the vicinal goal in Finnish. If we then rely on formal evidence for defining semantic roles, the most natural conclusion is that we have two roles, a goal/recipient role and a vicinal goal role. However, this kind of definition does not seem satisfactory, because the semantically close roles are seen as distinct. The examples in (6) thus show that formal evidence does not always provide us with a definitive answer. In (6), the differences and similarities in coding follow different principles. The roles of goal and recipient are distinguished from each other based on animacy in a sufficient manner; goals are inanimate, while recipients are animate. This renders a formal distinction superfluous. On the other hand, the role of vicinal goal is not directly retrievable from animacy or any other feature. Moreover, vicinal goals resemble goals, but the two roles are nevertheless distinct, which makes it necessary to resort to formal means for distinguishing them explicitly. The three goal roles (understood in a broad sense) show that arguments are not marked solely based on their semantic roles but other factors also make a contribution, which further makes defining semantic roles a tricky issue.

3. Data

We base our study on 500 instances of verbless constructions used as newspaper headlines collected from the Finnish Language Bank.² More precisely, the data was collected from the Finnish Text Collection, a selection of electronic research material containing written Finnish from the 1990s. There are several subcorpora, among which Aamulehti 1999 was chosen. Aamulehti is a daily newspaper published in Tampere (in Southern Finland), and the number indicates its year of publication. We decided to employ newspaper language data, because it is considerably easier to retrieve clause-like verbless expressions from written language corpora than from spoken language corpora, and because verbless constructions are particularly common in headlines.³ This is not, however, to say that verbless constructions do not occur in spoken language (see e.g. Helasvuo 2001: 105–131 and references therein). In order to illustrate certain points better, we present elicited examples as well. It should also be noted that

² For more information on the Language Bank, see <<http://www.csc.fi/english/research/sciences/linguistics>>.

³ Despite the fact that our data consists of headlines, our purpose is not to discuss grammatical, textual, or discourse properties specific to headlines. There is quite a long, albeit not very extensive, tradition of studying grammar as well as other features of headlines in different languages (see e.g. Straumann 1935; Åkermalm 1965; Conon 1973; Mårdh 1980; Simon-Vandenberg 1981; Vahtera 2009), but they cover aspects different from ours (cf., however, Schneider 2000).

we used the corpus for charting the possible types of verbless constructions that are highly clause-like and independent, and that express events, but we have not analyzed the data in any statistical way.

When speaking of constructions, we mean, following Goldberg (2006: 5), “learned pairings of form with semantic or discourse function”. She details the definition of a construction as follows: “Any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist. In addition, patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency.” There are many kinds of verbless constructions, such as predicate nominal and possessive constructions. As the present study concerns semantic roles, we focus on those genuinely verbless constructions that do not result from ellipsis, that can be construed as indicating dynamic events (instead of states), and that can be seen as productive or at least semi-productive. That is, our work goes far beyond studies of missing copulas and other similar constructions.

Naturally, such headline data varies structurally. What the investigated constructions have in common, however, is that they all include a noun phrase in a grammatical case (NP_{gram}), namely the nominative or partitive. (The third grammatical case of Finnish, the accusative, is not attested in our data.) In addition, most of the investigated constructions include an oblique phrase (ObIP) which may be another noun phrase in a so-called local case⁴ (NP_{loc}, cf. (7a)), an adposition phrase (cf. (8)), or an adverb phrase (cf. (9a–b)). Thus, at a minimum, the investigated constructions consist of two arguments, but a third argument – another oblique phrase – is possible as well (cf. (7b)). Also adjuncts, such as temporal modifiers, are common (see (9b)).

Finnish (Language Bank)

(7) a. *Suomalaislaittee-t* *kuu-hun*

Finnish.appliance-NOM.PL **moon-ILL**

e.g. ‘Finnish appliances go / are sent to the moon.’⁵

⁴ These are the inessive (‘in’), elative (‘from (inside)’), illative (‘(in)to’), adessive (‘on, at, by, near’), ablative (‘from’), allative (‘(on)to, for’), essive (‘as’), or translative (‘(changing) into’). For Finnish local cases, see e.g. Huumo & Ojutkangas (2006) and references therein. Note that in Finnish also many adverbs contain a local case suffix.

⁵ Note that it is a purely practical decision to translate instances of verbless constructions with a particular mood and tense. Construing them as denoting, for instance, the past is connected with pragmatics; the construction in itself does not involve any information on mood or tense.

b. *Fortumi-lle kilpailija lännestä?*

Fortum-ALL rival **west-ELA**

[company name]

e.g. ‘Fortum gets a rival from the west?’

(8) *Outo-a valo-a Tanska-n ja Ruotsi-n yllä*
strange-PTV light-PTV **Denmark-GEN** and **Sweden-GEN** above

e.g. ‘A strange light was seen above Denmark and Sweden.’

(9) a. *Väestötietojärjestelmä alas*
population.register.system **down**

e.g. ‘The population register system went down.’

b. *Kunna-n vero-t entisellään ensi vuon-na*
municipality-GEN tax-NOM.PL **unchanged** next year-ESS

e.g. ‘The taxes of the municipality are kept unchanged next year.’

Two instances in our data contain a nonfinite verb form expressing manner or means (InfP, cf. (10)) occupying the slot of the oblique phrase. In three instances, the construction consists of an NP_{PTV} and a quantifying expression (cf. (11)). Furthermore, there are three instances of a relatively idiomatic construction consisting of an NP_{NOM} and an expression of age (cf. (12)).

Finnish (Language Bank)

(10) *Uusi vuosi luistel-len*
new year **skate-INF**

e.g. ‘The new year goes skating.’

(11) *Huume-i-ta entis-tä enemmän*
drug-PL-PTV **former-PTV** **more**

e.g. ‘Drugs are used even more than before.’

(12) *Kauppi-n sairaala 60 vuot-ta*
Kauppi-GEN hospital **60** **year-PTV**

e.g. ‘The Kauppi hospital celebrated 60 years of existence.’

In the next section, we will provide a more detailed description of the above-mentioned constructions in the light of analyzing what dynamic construals of verbless expressions are based on. However, the focus of our examination will not be on specific morphosyntactic

characteristics of Finnish verbless constructions, because we believe that our approach could be applied to other languages as well.

4. Semantic roles and verbless constructions

4.1. Dynamicity without verbs

In this section, the data presented in Section 3 is discussed from the perspective of how verbless constructions are able to express dynamic events without a verb. Thus, we do not endeavor to exhaust all the possible verbless constructions that could fit within the scope of the present study. Instead, we intend that our analysis, emerging from our data, will be an initial contribution to this topic.

We see semantic roles as event-based bundles of semantic features that are constructional attributes and thus connected with certain morphosyntactic features (cf. argument roles in the spirit of Goldberg 1995, 2006). It is therefore possible to draw a parallel between basic sentence types that involve a verb and the verbless constructions investigated in the present study. On these grounds, our approach includes adopting Goldberg's Scene Encoding Hypothesis that states "constructions which correspond to basic sentence types encode as their central senses event types that are basic to human experience". Event types, for their part, are relatively abstract classifications of different states-of-affairs in the world. (Goldberg 1995: 39–40.) Thus semantic roles indicate participants that are conceptualized as conventional parts of some basic event type. For defining semantic roles, this means that it is crucial to recognize the event type denoted by the construction in question, and if verbless constructions encode event types, they necessarily involve semantic roles.

Events are indisputably denoted by verbs. However, in many languages static events, or rather states, such as existence or possession, can be expressed without (copula) verbs (see Payne 1997: 113ff for a discussion). However, our data clearly shows that also some dynamic event types can be expressed without verbs (see Västi 2011a, 2011b, 2012 for senses of two specific constructions; see also Vahtera 2009 for a comparison between Swedish and Finnish, and Kopotev 2007a, 2007b for a comparison between Russian and Finnish). Dynamic events are defined here as involving concrete motion or some kind of abstract change, which is typically coded by verbs. Thus, in verbless constructions, some element other than a verb must code the change or motion. Moreover, this element must have a relatively specific meaning,

which constrains possible verbless constructions. In constructions expressing highly transitive events with an explicit agent and patient, for example, arguments are typically marked with elements bearing extremely schematic meaning (such as the nominative and accusative case) if they are marked at all, which makes transitive events bad candidates for being expressed by verbless constructions. Nevertheless, as several examples above in Section 3 suggest and as will be seen later in this section, verbless constructions can be used to express even transitive events.

The core of most discussed cases is composed of an NP in a grammatical case and an ObIP (see Section 3). These constructions are illustrated schematically in Table 1.

Table 1. Typical verbless construction types denoting dynamic events in Finnish.

non-existential constructions	existential constructions
setting constructions [NP _{gram} + ‘event setting’]	setting constructions [‘event setting’ + NP _{gram}]
source constructions [NP _{gram} + ‘change from’]	source constructions [‘change from’ + NP _{gram}]
target constructions [NP _{gram} + ‘change to’]	target constructions [‘change to’ + NP _{gram}]

Table 1 illustrates the possible construction types from the perspective of the relative word order of the first two arguments, which dictates whether the construction in question is existential or non-existential. In Finnish, linearity plays a role in differentiating between basic sentence types, and it contributes to the semantics of the constructions under investigation. A more thorough discussion of linearity, however, lies outside the scope of this paper. We have labeled the constructions with the initial-position NP_{gram} as non-existential, and the constructions with inverse word order as existential.⁶ This is in line with the tradition in Finnish linguistics and is applicable to the constructions studied in this paper. The constructions are further divided into setting, source, and target constructions according to the meaning of the ObIP, which may indicate the setting of the denoted event (‘event setting’), or either the source state (‘change from’) or target state (‘change to’) of the NP_{gram}’s referent. The meanings of

⁶ For semantics of Finnish existential sentences, see e.g. Huumo (2003).

these constructions cover several event types in the spatial, possessive, temporal, identificational, and circumstantial domains, to name only the most typical ones.⁷

The ability of a verbless construction to express dynamic events is largely due to the ObIP accompanying the NP_{gram}. As for Finnish verbless constructions, Helasvuo (1991: 40–41, 2001: 123–125) and Västi (2011b: 46–50, 2012) have suggested that local case suffixes may function as their independent predicates, and the same analysis can be extended to apply to adpositions and adverbs. Also Kopotev (2007b: 129–131) has proposed a somewhat similar theory of the existence of verbless constructions in Finnish. The approaches of both Helasvuo and Västi are founded on Siro (1964: 26–29) who introduced the term “quasi-predicate” into Finnish linguistics. The term quasi-predicate designates those local case suffixes and adpositions – and adverbs, we may add – that are used to mark the arguments of a verb. It “refers to” the subject in an intransitive clause and to the object in a transitive clause. This analysis can be reformulated so that in an intransitive clause the subject acts as an argument of the quasi-predicate and, respectively, in a transitive clause the object acts as an argument of the quasi-predicate. Thus, the quasi-predicate indicates a semantic relationship between its stem and argument. As regards verbless constructions, consider (13) which consists of an NP in the nominative case (*Hägglund* [surname]) and an NP in the illative case (*Naton kokoukseen* ‘to a NATO meeting’):

Finnish (Language Bank)

- (13) *Hägglund Nato-n kokoukse-en*
 Hägglund NATO-GEN meeting-ILL
 [surname]
 lit. ‘Hägglund to a/the NATO meeting.’

In (13), there is only one argument (*Hägglund*) in addition to the quasi-predicate’s (-*en* ‘to’) stem (*Naton kokoukse-* ‘NATO meeting’), and hence the expression involves the meaning ‘Hägglund to a/the NATO meeting’. In the absence of a verb, the illative case suffix can be analyzed as a proper predicate instead of a quasi-predicate. In other words, in finite constructions, verbs act as predicates, and case suffixes, adpositions, and adverbs act as quasi-

⁷ Nevertheless, meanings of verbless existential constructions belonging to the circumstantial domain seem rather odd. There are no instances of those meanings in our data, nor are we able to intuitively form completely natural examples (?*Lakko-on posti-n työntekijö-i-tä* [strike-ILL postal.service-GEN employee-PL-PTV] e.g. ‘Postal workers go on strike.’).

predicates, whereas in verbless constructions, case suffixes, adpositions, and adverbs are the only or the main predicating elements. However, we are not saying that verbs and case suffixes etc. would have equal statuses as predicates in any context, but verbs predicate in a great more detail (see Section 4.2).

At this point, it is important to note that Finnish verbless constructions tend to be highly polysemous (which probably applies to similar constructions in other languages as well). Polysemy is a natural attribute of constructions (see e.g. Goldberg 1995: 31–39), but it is particularly substantive in verbless constructions, as their individual instances can often be construed as encoding remarkably dissimilar event types (see Västi 2011b for a more detailed discussion of polysemy in verbless constructions, and Västi 2011a, 2012 for empirical support for our semantic analysis of verbless constructions). Probably the most central aspect behind the semantic variation is that, in most cases, the NP_{gram} is construable as both a subject-like and an object-like argument, and often there is even a third possibility where the construction receives an existential meaning. This directly affects the makeup of the event type. In (13) above, the first two contradicting construals manifest themselves as different perspectives to the denoted event. Should *Hägglund* be interpreted as a subject-like argument, the event in question is understood as happening on Hägglund’s initiative; he goes to the NATO meeting voluntarily. On the other hand, if *Hägglund* is interpreted as an object-like argument, the event in question is understood as a transitive event without an explicitly mentioned actor; somebody causes Hägglund to go to the NATO meeting. That is, even though there is only one explicit argument, transitive construals are not excluded.

Verbless constructions can be construed as indicating dynamic events also in the absence of an ObIP with an inherently dynamic meaning, even if those construals are dynamic to a lesser degree compared to the example (13) discussed above. Consider (14), where the ObIP is in a static case, namely the inessive:

Finnish (Language Bank)

- (14) a. *Verilöyly Honolulu-ssa*
 massacre Honolulu-INE
 lit. ‘Massacre in Honolulu.’
- b. *Laaja puhdistus Albania-ssa=kin*
 extensive cleansing Albania-ADE=too
 lit. ‘Extensive cleansing in Albania too.’

In (14a), the inessive case functions as a predicate and *verilöyly* ‘massacre’ as its argument. The literal meaning of the expression is ‘A massacre in Honolulu’ which is not dynamic in itself. The lexical meaning of *verilöyly*, however, includes dynamicity because ‘massacre’ is an event, and should *verilöyly* be construed as a subject-like argument, the expression approximates the meaning ‘A massacre took place in Honolulu’. Contrary to the intransitive construal of (13) above, this conceptualization does not contain any instigator, but the event is portrayed as spontaneous. On the other hand, should *verilöyly* be construed as object-like, the expression roughly means ‘A massacre was carried out in Honolulu’.⁸ A lexical meaning of an NP_{gram} gains a particularly large role in dynamic construals of seemingly stative expressions in cases where the NP_{gram} is deverbal (cf. (14b)): a deverbal NP_{gram} specifies the nature of the process directly, which typically is not possible for verbless constructions (see Section 4.2). In any case, the pervasive ambiguity between event types applies to construing (14b) as well. That is, it may be interpreted as ‘There occurs an extensive cleansing in Albania too’ or as ‘An extensive cleansing is organized in Albania too’.

In addition to the construction types discussed above, our data contains sporadic instances of the more fixed constructions exemplified in (10)–(12) in Section 3. They cannot be analyzed similarly to (13)–(14) above, i.e. as involving a predicating ObIP that contributes to the dynamic meaning. Nevertheless, they too express events, so their dynamic meaning must be associated with a linguistic factor. In our data, there are only two instances of a type (10) construction that consists of an initial-position NP_{NOM} indicating time and of an InfP that indicates manner or means (but not the whole event). Consider (15) (see also (10) above):

Finnish (Language Bank)

- (15) *Lomapäivä* *vaikka* *tanssi-en*
 holiday for.instance dance-INF
 lit. ‘A/the holiday, for instance, dancing.’

The core elements of (15) are the NP *lomapäivä* ‘holiday’ and the InfP *tanssien* ‘dancing’ that together build a temporal profile for the expression. First, *lomapäivä* lexically refers to a span of time. Second, as a verb-form expression of manner, *tanssien* modifies an unspecified process

⁸ One might think that the most neutral construal for a construction like (14a) would be that there simply is an unexpressed copula verb. However, the expression cannot mean ‘A massacre is in Honolulu’. Instead, it is possible to conceive *Honolulussa* as a postmodifier to the head noun *verilöyly*. In that case, *Verilöyly Honolulussa* is interpreted as an NP and it does not fall into the scope of the present study.

which concerns the expressed holiday. In other words, *tanssien* suggests that a process indeed takes place. As in the previous cases (13)–(14), the NP_{gram} *lomapäivä* may be construed as subject-like or object-like, and thus the meaning of the expression may be glossed as ‘A/the holiday goes, for instance, dancing’ or as ‘A/the holiday is spent, for instance, dancing’.

Moreover, our data contains three instances of type (11) construction exemplified here with (16):

Finnish (Language Bank)

- (16) *Kotikiel-tä* *liian* *vähän*
 home.language-PTV too little
 lit. ‘Home language too little.’

The construction consists of an NP_{PTV} (here *kotikieltä* ‘home language’) and of a quantifying expression (here *liian vähän* ‘too little’), and it is especially the NP_{PTV} that seems to enable dynamic construals. Namely, the Finnish partitive is used to indicate, among other things, aspectual unboundedness, due to which the NP_{PTV} and the quantifying expression together have the potential of denoting a process. This unspecified, quantified action is, then, directed at the referent of the NP_{PTV}. The fundamental polysemy of verbless constructions can be seen here in alternative construals of the type ‘There is too little home language’ and ‘Home language is used too little’.

Finally, a type (12) construction is also represented by three instances in our data. It is a relatively idiomatic construction which consists of an NP_{NOM} and an expression of age in the form of years:

Finnish (Language Bank)

- (17) *Lielahde-n* *SPR* *30* *vuot-ta*
 Lielähti-GEN *SPR* *30* year-PTV
 [district] [The Finnish Red Cross]
 lit. ‘The SPR of Lielähti 30 years.’

Unlike the constructions discussed so far, this type only allows for one dynamic interpretation, namely ‘NP_{NOM} turns X years’, which probably is due to the construction’s idiomaticity and motivated by a semantic frame concerning birthdays, and not so much the construction’s grammatical and lexical elements as such. As regards semantic roles, this construction is not

as illustrative as the ones introduced above, because the idiomaticity reduces the effect of the semantic principles associated with the other constructions.

The discussion above is definitely not an exhaustive description of the semantic scope and variation in our data, but it should suffice for showing that, in verbless constructions, dynamicity can be associated with several different factors of which oblique elements with an inherently dynamic meaning are the most important ones. Several properties of individual elements influence particular construals, but they are not discussed in detail in this paper. This is thus a rather preliminary analysis of linguistic elements contributing to the dynamic meanings of the verbless constructions investigated in the present paper. Our objective is to underline the important point that also verbless constructions may denote diverse events, because this justifies assigning semantic roles to their core building blocks. That is, semantic roles represent conceptualizations of typical participants in typical events. It is rather easy to find potentially comparable constructions in other languages, as in Swedish (e.g. *Jeltsin till USA i september* [Yeltsin to the USA in September]; see Vahtera 2009 for a description of Swedish verbless constructions), and it is our hope that several different languages will be considered explicitly in later studies.

4.2. *Events coded by verbless constructions*

In the previous section, we showed that a verb is not necessary for expressing dynamic events and analyzed the means by which verbless constructions may predicate. However, we may expect that conceptualizing an event with a verbless construction is not the same as conceptualizing that event with a full clause containing a finite verb, because verbs typically provide detailed information about the qualities of the event. We will therefore discuss basic characteristics of verbless conceptualizations next.

Events are coded linguistically by argument structure constructions that include a reference to salient participants and relations between them. A typical division of labor between the elements of a construction is that a finite verb indicates the event while arguments specify its participants. For example, in *Paula painted her nails*, the verb ‘paint’ describes the event and the nouns identify its participants. However, as shown in the previous section, the overall picture is not quite as simple. In a language like Finnish, arguments also provide information about the denoted event; their coding reveals relations between participants, and those relations convey information about processes. This kind of information concerns mainly the given event type. That is, by means of arguments alone it is possible to express, for instance, causal relations

and the direction of energy flow between participants, but not to explicate the details of an event. Consider the example in (18) consisting of two arguments:

Finnish (Language Bank)

- (18) *Koulutukse-en lisä-ä raha-a*
 education-ILL more-PTV money-PTV
 lit. ‘To education more money.’

The illative suffix *-en* ‘(in)to’ functions as the predicate of the construction by specifying the relationship between its stem (*koulutukse-* ‘education’) and the other argument (*lisää rahaa* ‘more money’), much in the same way as a verb would do if present. Based on the inherent meaning of the illative, we can infer that more money goes to education, but we do not know *how* exactly. (18) can be interpreted from at least the two different perspectives presented in the previous section. That is, the NP_{gram} *lisää rahaa* may be construed as a subject-like or an object-like argument, but manner, means, and comparable semantic attributes are not included in the expression’s profile. In contrast, the full clause in (19) exemplifies the way a verb specifies the nature of the process:

Finnish (personal knowledge)

- (19) *Koulutukse-en kerä-tään/myönne-tään lisä-ä raha-a*
 education-ILL collect/grant-PASS.PRS more-PTV money-PTV
 ‘More money is collected/granted for education.’

In (19), the verb specifies the nature of the process by which more money is acquired. The semantic roles of the arguments remain the same regardless of the verb. Note, however, that this is not to say that (18) is an elliptic version of (19) but to illustrate differences between verbless and finite conceptualizations. In fact, as mentioned above, there are many possible ways to construe (18).

On the other hand, certain instances of verbless constructions, especially those containing a deverbal NP_{gram} and an ObIP with a stative meaning, do name the sort of the event – but they do so at the participants’ expense. Consider:

Finnish (Language Bank)

- (20) a. *Sri Lanka-ssa kiiva-i-ta taistelu-j-a vaali-en alla*
 Sri Lanka-INE fierce-PL-PTV **battle-PL-PTV** election-GEN.PL under
 lit. ‘In Sri Lanka fierce battles before elections.’
- b. *Kuolonkolari Harjavalla-ssa*
 fatal.car.accident Harjavalta-INE
 [town]
 lit. ‘A fatal car accident in Harjavalta.’

In (20a) (see also (14b)), the deverbal NP_{gram} *kiivaita taisteluja* ‘fierce battles’ specifies the nature of the event, while the participants and the relations between them remain unspecified. The initial ObIP *Sri Lankassa* ‘in Sri Lanka’ of course suggests that at least some of the participants involved are Sri Lankan, but the expression is primarily about naming the event, not about its participants. The internal structure of the battles is not described by the construction. According to the principles of construal stated in the previous section, the expression in (20a) approximates the meaning ‘Fierce battles are taking place before elections in Sri Lanka’ or ‘Fierce battles are fought before elections in Sri Lanka’. Furthermore, as shown by (20b), it is possible to form a similar conceptualization with an NP_{gram} which is not deverbal but otherwise lexically specifies the sort of the event (see (14a)).

Verbless constructions, then, represent events schematically in many respects: they specify neither the particular nature of the event nor its participants and the relations between them. Remaining information, however, is exactly the kind of information that is relevant as regards semantic roles. Namely, the form of a construction indicates the perspective from which an event has been conceptualized, e.g. which participant is seen as the energy source, and both lexical and pragmatic factors contribute to disambiguating between semantic roles that share some features such as animacy. This is the topic of the next section.

4.3. *Semantic roles attested in verbless constructions*

In Sections 4.1 and 4.2, we discussed how verbless constructions express events and what kind of information on events can be conveyed without verbs. In this section, we proceed to the main question of our study, i.e. what semantic roles are based on in verbless constructions and, possibly, also in general. It is important to note that defining individual roles and their correct or sufficient number lies outside the scope of this paper, although they are questions that

deserve in-depth studies of their own. Instead, our discussion has potential consequences for theories of semantic roles, as we argue with the help of verbless data that no direct link between verbs and semantic roles is needed but semantic roles are based on constructional semantics. The idea is closely related to Goldberg's (1995, 2006) theory of argument structure constructions that differentiates between the meaning of a verb and that of a construction. Semantic roles (argument roles) are part of a construction's meaning, whereas verbal semantics includes frame-specific participant roles (we use the concept of frame in the sense of Goldberg (e.g. 1995: 25–27, 2006: 38–40)). For instance, the meaning of the English ditransitive construction is analyzed as containing the argument roles of agent, patient, and (willing) recipient, and verbs with certain semantics – i.e. with certain kinds of participant roles – can be used in the construction. One of these verbs is *hand* whose participant roles *hander*, *handee*, and *handed* are fused with the above-mentioned semantic roles when used in the ditransitive construction (Goldberg 1995: 43–52, 141–151). It is not arbitrary which verbs may occur in which constructions, but there are principles guiding the fusion of participant roles and argument roles. Typically, constructions are polysemous, and their different senses are associated with different verb classes. The same largely applies to verbless constructions, except that usually there are several participant roles available for their arguments depending on the construal and, consequently, instances of verbless constructions tend to be ambiguous between different senses. That is, in a verbless construction lexical elements can be construed as belonging to different semantic frames.

Building on both our theoretical approach and data, we see constructional semantics as fundamental for associating particular semantic roles with particular verbless expressions; constructions have independent, relatively schematic meanings that determine semantic roles for their instances. This can be seen particularly clearly in the instances where a grammatical element bears an exceptional meaning in a verbless construction, and only in that construction. An example of this is the Finnish allative case which may indicate an agentive participant in a particular verbless construction (see Västi 2011a for a detailed discussion of the construction in question), but a similar meaning is not possible if a verb is present. Moreover, it is a highly atypical sense for any goal-marking morpheme (see Rice & Kabata 2007 for an extensive survey on their crosslinguistic grammaticalization patterns). Consider:

Finnish (Language Bank)

(21) *Lumpee-lle 100. NHL-maali*

Lumme-ALL hundredth NHL.goal

[surname]

‘Lumme scored [his] hundredth goal in NHL.’

(lit. ‘For Lumme the hundredth goal in NHL.’)

Based on our intuition, the only reasonable construal for (21) is that Lumme scores the goal as a result of his own intentional activity; it is not possible that the goal is scored by an unspecified player on behalf of Lumme, or that Lumme is a goalkeeper who for his hundredth time fails to make a save in the NHL. However, the meaning of the expression involves the information that scoring a goal remains in Lumme’s sphere of control as an abstract achievement. We may thus suggest that the semantic role of the argument *Lumpeelle* is, say, agentive recipient. It is a highly idiosyncratic role, but defining *Lumpeelle* as a recipient, for instance, would leave the clearly relevant semantic feature of agentivity out. We may add that if (21) were rephrased with a finite construction, *Lumpeelle* would appear as a subject in the nominative case (i.e. *Lumme*) underlining its agentive nature (see Västi 2011a for paraphrase tests on verbless constructions with an initial-position allative element).

If semantic roles are defined as feature bundles that are constructional attributes, then it follows that they are connected with certain morphosyntactic features. As repeatedly shown by cognitive-functional studies of grammar, marking of lexical elements is semantically motivated, be it synchronically transparent or not. In other words, grammatical elements have meanings of their own, and especially senses of semantic cases and adpositions are relatively specific, at least when compared to grammatical cases. Accordingly, recognizing semantic roles of a construction is largely based on the form of its elements. The relationship between the form and the function of a construction is typically rather direct but, as shown by (21), constructions may be more idiomatic as well. A construction with more predictable semantics is illustrated in (22):

Finnish (Language Bank)

(22) *Kapea systeemi Lahte-en*

narrow system Lahti-ILL

[town]

lit. ‘A narrow system to Lahti.’

In (22), the semantic role of the NP_{gram} depends partly on whether it is construed as a subject-like or an object-like argument, whereas there is only one available semantic role for the illative-marked argument, which could be called, for instance, goal.

The meaning of the explicitly marked element is rather directly dictated by its morphological marking in cases like (22). Morphology alone does not, of course, provide sufficient information for construing semantic roles in verbless expressions but, just as with any construction, lexical semantics plays an important role. There are several lexical semantic features affecting semantic role assignment, such as animacy and abstractness vs. concreteness of the referent. Effects of animacy are exemplified in (23):

Finnish (Language Bank)

- (23) a. *Patosilla-lle takorautakaitee-t*
dam.bridge-ALL wrought.iron.railing-NOM.PL
 lit. ‘To the dam bridge wrought iron railings.’
- b. *Minke-i-lle ehkä uima-allas*
mink-PL-ALL maybe swimming.pool
 lit. ‘To/for minks maybe a swimming pool.’
- c. *Maatalouskoulu-lle muistolaatta*
agricultural.school-ALL memorial.plaque
 lit. ‘To/for the agricultural school a memorial plaque.’

Examples in (23a–b) are formally similar but differ in the animacy of the allative-marked participant. Accordingly, the semantic role of the argument *patosillalle* ‘to a dam bridge’ in (23a) can be defined as goal and that of the argument *minkeille* ‘to/for minks’ in (23b) as recipient or beneficiary, depending on the construal. Also the example in (23c) is formally comparable, but its allative-marked argument *maatalouskoululle* ‘to/for an agricultural school’ is ambiguous with regard to the referent’s animacy; it is possible to construe it as a concrete building or, metonymically, as a group of people constituting the institution. Consequently, *maatalouskoululle* may function as a recipient or a goal. Morphology cannot be responsible for the differences in (23), but only the animacy of the allative-marked participant provides us with a satisfactory result.

In addition to constructional and lexical semantics, also pragmatic and contextual factors contribute to construing semantic roles for verbless expressions. There is no verb specifying the event but several alternative semantic frames evoked by arguments together may be

available, and the frames, for their part, may be compatible with different event types. In those cases, world knowledge and cultural knowledge influence choices between event types and, consequently, between semantic roles. That is, pragmatics influences construing a relevant event type for a verbless expression, and, as defined in Section 4.1, event types contain particular semantic roles. This is particularly relevant for those semantic roles that share one or more features (e.g. animacy, targetness). The situation is very different from constructions with verbs where the verbal semantics confines the possible variation. As mentioned above, Finnish allative-marked arguments may indicate agentive recipients when occurring in the initial position in a verbless construction (cf. (21)). Often it is possible to construe the same arguments as mere recipients, which is the predictable scenario on the basis of the allative marking. However, pragmatic factors, such as cultural knowledge concerning referents, seem to increase or decrease the possibility that those arguments might function as agentive recipients. This is illustrated in (24a–b):

Finnish (Language Bank, personal knowledge)

- (24) a. *Mika Häkkise-ille mökkitontti Enontekiö-ltä*
Mika Häkkinen-ALL cabin.lot Enontekiö-ABL
 [personal name] [town]
 lit. ‘For Mika Häkkinen a cabin lot from Enontekiö.’
- b. *Työttöm-i-ille mökkitontti Enontekiö-ltä*
unemployed-PL-ALL cabin.lot Enontekiö-ABL
 [town]
 lit. ‘For the unemployed a cabin lot from Enontekiö.’

The corpus example (24a) can refer both to an event where Mika Häkkinen buys the cabin lot for himself and also to an event where he receives the lot as a gift. That is, the argument *Mika Häkkiselle* ‘to Mika Häkkinen’ can function as a recipient or as an agentive recipient. Both construals are pragmatically plausible: as Mika Häkkinen is a famous (former) Formula 1 driver and thus wealthy, he is an excellent candidate for purchasing a cabin lot, and as in Finland lots are donated to successful sportsmen, he is at least equally likely to receive one given to him. The modified elicited example (24b), for its part, does not easily allow for the agentive recipient reading, even though it is identical in form with (24a). One probable reason for this is that it is culturally unlikely that unemployed people purchase cabin lots. However, in principle nothing in the form of the expression prevents the agentive recipient construal.

In the context of examples (23a–c), we discussed the role of lexical semantics for construing semantic roles focusing on a single element at a time. However, it is important to recognize the role of lexical context as well. In verbless constructions, the semantic role of an argument often strongly depends on the meaning of the accompanying argument: cases and adpositions tend to be polysemous, and individual lexical elements can appear in countless semantic frames, so the function of an argument may be contextually determined. Consider (25) where the initial-position argument occurs in the elative case:

Finnish (Language Bank)

(25) *Katajanpuisto-sta leikkipuisto*

Kataja.park-ELA playground

[juniper's park]

lit. 'From Kataja park a playground.'

The elative is a highly polysemous case in Finnish (see Leino 1993), but the concrete spatial sense 'from [somewhere]' can be seen as the central one. This sense would be compatible with the meaning of the stem *Katajanpuisto-* 'Kataja park' but not with the meaning of the accompanying argument *leikkipuisto* 'playground'; a playground cannot concretely come out of a park. Thus the argument *Katajanpuistosta* does not function as a physical source. The Finnish elative is used to indicate sources of more abstract changes as well, and accordingly (25) can be interpreted as, for instance, 'Katajanpuisto became a playground' or 'Katajanpuisto was turned into a playground'. The best label for the semantic role of the elative argument is unclear to us, but the existence of the role can be justified nonetheless.

Moreover, also adjuncts in verbless expressions may affect the semantic roles arguments receive. In fact, their function appears to be more crucial in verbless constructions than in full clauses containing a finite verb. Consider the examples in (26a–b):

Finnish (Language Bank, personal knowledge)

(26) a. *Kiinteistövero vain väkisin ylös*

real.estate.tax only by.force up

lit. 'The real estate tax up only by force.'

b. *Kiinteistövero ylös*

real.estate.tax up

lit. 'The real estate tax up.'

In principle, the corpus example (26a) corresponds to most instances of verbless constructions discussed above in that it is possible to construe the NP_{gram} *kiinteistövero* ‘real estate tax’ at least as a subject-like or an object-like argument. That is, (26a) can be interpreted as, for instance, ‘The real estate tax goes up only by force’ or ‘The real estate tax is raised only by force’. However, the particle *vain* ‘only’ and the adverb *väkisin* ‘by force’ together suggest that the denoted event is caused by an agent, which emphasizes the latter construal. A modified example (26b), which does not include any elements besides the core arguments of the construction, in turn, does not lay emphasis on either construal. In constructions with a verb, adverbs are less important for our understanding of semantic roles, because the verb disambiguates between the possible readings, even though agentive adjuncts, such as ‘with intent’ and ‘carefully’, may in certain cases disambiguate between, for example, anticausative and passive readings.

Finally, when dealing with verbless constructions, also situational context necessarily plays a role in assigning semantic roles. Consider examples (27a–b) (not included in our data but spotted in the newspaper *Kaleva*):

Finnish (headlines, *Kaleva*)

- (27) a. *Nokia House-lle rakennuslupa-t Peltola-an*
 Nokia House-ALL planning.permission-NOM.PL Peltola-ILL
 [district]
 lit. ‘For Nokia House planning permissions to Peltola.’
- b. *Kolme-lle sude-lle kaatolupa*
 three-ALL wolf-ALL shooting.license
 lit. ‘For three wolves a shooting license.’

At first glance, examples in (27) seem to be instances of the same verbless construction composed of an initial-position allative-marked ObIP and an NP_{gram}. In addition, in both cases the NP_{gram} is a compound word with the head *lupa* ‘permission, license’. Nonetheless, the instances do not allow for the completely same sets of construals. One of them for (27a) is ‘Nokia House [as a metonymically conceptualized community] gets a permission to build [something] in Peltola’, whereas, in a newspaper context, (27b) cannot be construed as ‘Three wolves get a permission to shoot [something]’. Instead, it can be interpreted as, for example, ‘A shooting license for three wolves is granted [to unspecified persons]’, in which case (27b)

is not an instance of the same construction as (27a). Yet the expression in itself does not block the recipient construal of wolves but, in a fairytale context for instance, it could denote an event where wolves receive a shooting license.

5. Discussion

In this paper, we have discussed the nature of genuinely verbless constructions in light of Finnish data. We have shown that semantic roles can be seen as a part of the meaning of a construction and that they are directly motivated by the construction's form, although lexical semantics plays an important role as well. Moreover, different pragmatic factors contribute to construing the roles for particular expressions. The relations between form and function are naturally language-specific, and all languages may not deal with verbless expressions equally well. We believe that semantic roles should be defined as relatively coarse-grained feature bundles tied to event types – semantic units that correspond to the kind of information that arguments of verbless constructions are able to provide – and that they exist independently of verbs (cf. Croft 1991; DeLancey 1991; Goldberg 1995, 2006; Næss 2003, 2007 whose proposals share features with ours). We may say that, in verbless constructions, it is the semantic layer of participant roles that is not explicated. They are nevertheless inferable: lexical elements of verbless expressions together evoke semantic frames within which participant roles are construed, along with semantic roles. Construals of verbless expressions, however, remain relatively fuzzy in any case, because nominal elements alone simply cannot convey all the information that a verb could.

We have also discussed the fact that verbless constructions can be analyzed as polysemous, similarly to argument structure constructions in the spirit of Goldberg (1995, 2006). Consequently, commonly arising alternative sets of semantic roles in verbless constructions can be associated with their different senses. It is thus a matter of context which senses are represented by individual instances in individual occasions. That is, the systematic ambiguity of particular instances of verbless constructions is not an indication of undetermined semantics but of regular polysemy of constructions. Certainly, the polysemy of verbless constructions is different from that in the argument structure constructions investigated by Goldberg in that verbless constructions allow variation in the perspective of construal – e.g. in construing the NP_{gram} as subject-like or object-like – and not only in the type of the denoted process. The

existence of alternative construals does not contradict seeing constructions as responsible for semantic roles.

As the brief discussion above implies, the most important finding of our paper is that verbs are not necessary for defining semantic roles, but roles similar to those attested in constructions with a verb are also found in genuinely verbless constructions. Dynamic meanings of verbless constructions are based on meaningful elements other than a verb, namely cases, adpositions, and adverbs, which function much like verbs as predicates. In the presence of such elements, the contribution of verbs to the reading of clauses is partially redundant, as the discussion of examples such as (19) has shown. In these cases, the function of the verb is rather to specify the nature of the process, and the semantic roles follow from the semantics of the constructions in question. This, of course, calls into question whether verbs should still be seen as the central elements of constructions, or is the construction as a whole indeed more important with regard to defining semantic roles. In our view, verbs contribute to the overall interpretation of the constructions but are not primarily responsible for the semantic role assignment. What implications this has for our understanding of the concept of semantic roles remains to be seen. We hope that our study is a first step towards numerous similar investigations of verbless constructions in other languages. Studying verbless constructions in formally and genealogically diverse languages would certainly make an important contribution to defining the concept of semantic roles. Below, we list some of the topics that we have not been able to address in this study but which are in need of closer research both in and across languages.

First, it is important to study what features semantic roles necessarily consist of and to consider if some of them should be seen as essential and some rather peripheral. In other words, do the features form any kind of hierarchy in which certain features are more relevant than others? Are the features recognized with the help of verbless constructions those that specifically should be integral parts of any definition of semantic roles? As our data has shown, similar features, such as agency, are relevant to defining semantic roles regardless of whether a given construction includes a verb or not. This question is central to our understanding of semantic roles, because verbs have played a leading role in the definitions thus far, while our study suggests that their importance has been exaggerated.

Second, the crosslinguistic limits of verblessness are in need of a closer scrutiny. Our study is based on one language and one type of data only, and we are looking forward to seeing in which contexts verbless constructions occur and how other languages deal with the lack of verb in similar constructions. Verbless constructions, just as constructions with a verb, are definitely different in nature in different languages, and by examining structurally diverse languages we

would get a better picture of the roles and features that are generally possible regardless of whether a given construction involves a verb or not. Finnish is a language with a rather rich case inventory, which may contribute to the lack of verb in an important way, but studies of other languages are needed in this respect. For example, are verbs more important and thus less frequently absent in languages that lack case markers and adpositions, or do contextual clues gain more relevance in those cases? What are the limits of verblessness; what kinds of verbless constructions are possible across languages?

Finally, an important issue that emerged from the discussion of cases such as (21) and (24) is that in verbless constructions grammatical elements, in this case the allative, have meanings they do not have in finite constructions. In finite constructions, the functions of the Finnish allative are typically related to motion, reception, and experience. However, in verbless constructions, a rather frequent semantic role of the allative is agentive recipient. One of the reasons for this atypical use of the allative in this particular verbless construction possibly lies in the agentive traits of the (willing) recipients present also in typical transfer events. In transfer events, the recipient needs to complete the event by accepting the transfer, which accords it certain agentive features. Furthermore, the agent is often unspecified in these cases. Are there comparable phenomena in other languages as well? Studying them could contribute to our understanding of semantic roles from a novel perspective, because unexpected traits may become relevant in verbless constructions and thus demonstrate the significance of constructional meaning.

Abbreviations

ABL = ablative

ACC = accusative

ADE = adessive

ADEL = adelative

AdvP = adverb phrase

ALL = allative

AOR = aorist

ELA = elative

ERG = ergative

ESS = essive

GEN = genitive

gram = grammatical case

ILL = illative

IND = indicative

INE = inessive

INF = infinitive

InfP = infinitive phrase

loc = local case

NOM = nominative

NP = noun phrase

OblP = oblique phrase	PRS = present
PASS = passive	PST = past
PL = plural	PTV = partitive
PP = adposition phrase	SG = singular

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