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Causative Spatial Expressions in Finnish and Swedish

Abstract

This article deals with some language-specific differences in Finnish and Swedish when expressing spatial causation. The focus is on the Finnish causative motion verbs *piilottaa* ('hide') and *hakea* ('fetch'), which refer to a causation of spatial events: hiding or fetching causes something (or someone) to move along a path in direction to or from some place. Syntactic-semantic differences between the languages are explained as conceptual phenomena. The formal lexical descriptions made are therefore based on the framework of conceptual semantics. In Finnish the causative motion verbs *piilottaa* and *hakea* are both conceptualized as a *path* of the Theme's movement, whereas the Swedish counterparts *gömma* and *hämta* are conceptualized as a *location* of the Theme <u>after</u> (*gömma*) respectively <u>before</u> (*hämta*) its movement. Through the theory of temporal structure, the language-specific differences can be explained through temporal relations within conceptual structure.

1. Introduction[1]

This article investigates the language-specific differences—in Finnish and Swedish—and the linguistic commonalities in expressing spatial causation. The starting point for the analysis is a group of Finnish causative verbs— causative motion verbs, e.g. *piilottaa* ('hide') and *hakea* ('fetch')—that refer to a causation of spatial events: hiding or fetching causes something (or someone) to move along a path in direction to or from some place. The motion and the result of the causation is expressed in the phrase that indicates a direction (see examples 1 and 2). It must be pointed out that the verbs *piilottaa* ('hide') and *hakea* ('fetch') can also refer to a causation that does not involve movement of the hidden/fetched object, e.g. *He hid the door by covering it with a bookcase*; *The data is fetched from the internet.*

However, in this article I describe the verbs only in the sense 'to cause spatial movement of the hidden/fetched object'.

The direction of the movement is encoded in the Finnish syntax by different locative cases. In the whole Uralic language family there is, as Hakulinen (1979: 522–526) points out, a "three-staged" locative case system that consists of the cases of *location*, 'olosijat' (expressing location <u>at</u> some place), the cases of *change*: 'tulosijat' (expressing movement in direction <u>to</u> some place) and 'erosijat' (expressing movement in direction <u>from</u> some place). According to Siro (1964), the main word connected to the cases of location is a *location* verb, whereas the main word connected to the cases of change is a *motion* verb. Thus, the locative case system in Finnish is organized along two dimensions: location and movement (see e.g. Karlsson 1978; Siro 1964: 25–40). The Indo-European languages, on the other hand, do not have this kind of three-staged locative case system. Swedish does not have morphological case at all, but prepositions or prepositional combinations (*in i, på, ut, ur, från* etc.) that correspond to the Finnish locative cases.

In traditional grammatical descriptions of Finnish, each locative case is described as being associated with a distinct basic meaning. For example the illative locative case (*keittiöön*), as in sentence (1), often expresses movement in direction <u>to</u> some place, whereas the elative locative case (*keittiöstä*), as in sentence (2), expresses movement in direction <u>from</u> some place. In Swedish, on the other hand, corresponding situations are encoded in the syntax by a preposition phrase that expresses location (e.g. *i, på, hos, under*):

(1) *Matti*   *piilott*   *-i*   *pallo -n*   *keittiö*   *-ön.*
     Matti   hide   -PAST-3SG   ball -ACC   kitchen   -ILLATIVE

     Matti   *göm -de*   *boll -en*   *i kök*   *-et.*
     Matti   hide -PAST   ball -DEF   i-PP-kitchen   -DEF

     'Matti hid the ball in the kitchen'

(2) *Matti*   *hak -i*   *pallo -n*   *keittiö*   *-stä.*
     Matti   fetch -PAST-3SG ball -ACC   kitchen   -ELATIVE

     Matti   *hämta -de*   *boll -en*   *i kök*   *-et.*
     Matti   fetch   -PAST   ball -DEF   i-PP-kitchen   -DEF

     'Matti fetched the ball from the kitchen'

In this article I concentrate on analyses of the differences between the Finnish verbs *piilottaa* ('hide') and *hakea* ('fetch'), and their Swedish counterparts *gömma* and *hämta*, respectively. I argue that situations are conceptualized by human beings in different languages in different ways. Thus, the syntactic-semantic differences between different languages must be explained by the Lexical Conceptual Structure (LCS) of the verb. To explain conceptual differences between languages I use the approach of conceptual semantics (see e.g. Jackendoff 1983, 1990; Nikanne 1990, 1995, 1997a–c and 2006), which provides formal tools for describing this phenomenon. I argue that the language-specific differences in this case concern temporal relations within conceptual structure. My aim is thus to provide a formal lexical description of the Finnish causative motion verbs *piilottaa* ('hide') and *hakea* ('fetch'), and their counterparts in Swedish.

In section 2 I present Finnish causative verbs in the light of the theory of conceptual semantics. In section 3 I use conceptual semantics in my analysis of Finnish causative motion verbs and their Swedish counterparts. In section 4 I conclude the results of the analysis.

2. Finnish causative verbs in conceptual semantics

The way that new words can be formed from already existing ones using derivational suffixes is one of the characteristic features of the Finnish language. Thus, it is a productive morphological process to derive causative verbs by using the causative suffixes ttA (or the suffix combinations ttA-ttA, U-ttA, ttA-U-ttA). In the Finnish verb *piilottaa* ('hide') the causative suffix *-tta* is attached to a nominal stem *piilo* ('hiding-place'), whereas in the verb *korjauttaa* ('make repair'), the causative suffix *-utta* is attached to a verbal stem *korjata* ('repair'). The deverbal causatives, which do not fall within the scope of this article, are in Finnish grammatical tradition called *kuratiivikausatiivit* (curative causatives) or *factitives* (the latter term is used in NS, Dictionary of Contemporary Finnish).[2] To give a formal description of the lexical conceptual structure of denominal causatives (e.g. *piilottaa*), I introduce the theory of conceptual semantics.

The goal of the theory of conceptual semantics is to find the optimal way of describing the human cognitive system in a way that explicitly

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[2] For deverbal causatives, see e.g. Kytömäki (1978, 1989) and Paulsen (forthcoming).

explains the interface between different cognitive systems related to language. Conceptual representation of a word or LCS is understood as the level of understanding linguistic information, a link between the linguistic representations such as phonology, syntax and other cognitive domains (spatial, social, haptic knowledge etc.).[3] As Nikanne (1997c: 157–158) points out, it has been more or less a standard assumption in generative grammar that the interface between syntax and conceptual structure is a trivial one-to-one mapping from syntax to semantics, and thus the syntactic structures are assumed to contain plenty of semantic information about event structure and thematic roles. Because the syntax and the semantics are separate representations, syntactico-semantic linking is a conceptual necessity (see e.g. Chomsky 1993, 1995; Jackendoff 1990; Nikanne 1997c: 158). In the framework of conceptual semantics, however, there is no trivial one-to-one mapping between syntax and conceptual structure.

In conceptual semantics, each constituent of a sentence is one of the major ontological conceptual categories, such as Events, States, Places, Paths, Time, and Direction (Jackendoff 1990: 22). There are two major tiers in conceptual structure: the *thematic tier* and the *action tier* which operate with thematic roles (Agent, Theme, Location etc.) and action roles (Actor, Undergoer). The thematic roles are determined in the conceptual structure. The lexicon is a part of the linking rule system. The conceptual structure is organized according to three zones that determine the order of the semantic functions (CAUSE, GO, TO, FROM etc.; see e.g. Jackendoff 1990; Nikanne 1990, 1995, 1997b). The organisation of the zones in Table 1 is given by Nikanne (1997b: 83):

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[3] See e.g. Nikanne (1997a, 2006).

ZONE 3 (causative zone)	ZONE 2 (thematic zone)	ZONE 1 (location zone)
CAUSE	GO BE	AT, ON, IN, UNDER,… (*place*-functions)
INCH	STAY EXT CONF MOVE	TO, TOWARD, FROM, VIA, AWAY-FROM (*path*-functions)
Agent	Theme	Location, Goal, Source, Route

Table 1: Zones and semantic functions

According to Jackendoff (1990), there are on a separate tier *semantic fields* that describe the cognitive backgrounds in which the events take place. The semantic fields Spatial, Temporal, Possessive, Identificational, and Existential are spread over the functions of zones 1 and 2, but not zone 3. Zone 3 has its own semantic fields. The most common ones are Physical, Social and Logical.[4]

The LCS of the denominal causative verb *piilottaa* ('hide'), then looks like in (3):

(3)   *Matti   piilott -i   pallo -n   keittiö -ön.*
       Matti   hide   -PAST-3SG   ball -ACC kitchen -ILLATIVE
       'Matti hid the ball in the kitchen.'

            AC   UN
            ↓   ↓

            Agent   Theme   Goal
            MATTI   BALL   KITCHEN
            ↑   ↑   ↑
            CAUSE → GO →   TO
            Physical   Spatial

The Finnish sentence *Matti piilotti pallon keittiöön* ('Matti hid the ball in the kitchen') is conceptualized as follows: 'Matti caused the ball to move along a path towards the kitchen'. The LCS of the verb *piilottaa* contains

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[4] For the principles in zone 3, see Nikanne (1990: 100–122).

one causation, assigned by the function CAUSE. The verb *piilottaa* has three potential syntactic arguments, because the LCS of the verb contains three functions [CAUSE, GO, TO]. The CAUSE function selects the function GO, which in turn selects the function TO. The selection is marked with arrows in the formal description. The lexical function chain (f-chain) of the verb *piilottaa* selects an Agent for CAUSE, a Theme for GO, and a Goal for TO. The Agent is subject (*Matti*), the Theme is object (*ball*), and the Goal is expressed in the syntax as illative locative case adverb (*kitchen*). The causation is described in the Physical field, and the transition of the ball in the Spatial field. In the action tier, there are one Actor (assigned by the function AC) and one Undergoer (assigned by the function UN).

Jackendoff (1987) assumes that the LCS of the verb also includes the *temporal tier* (T-tier). Jackendoff (1990) distinguishes between two types of temporal effects on causation: *Entrainment* describes causation that lasts as long as the caused event (e.g. *Matti dragged the car down the road*) and *Launching* is a causation that is related to the starting point of the caused event (e.g. *Matti threw the ball into the lake*).

Nikanne (1990: 190) gives a formal description of temporal tier relations of the *Entrainment* and *Launching* as follows:

(4)   Entrainment

       =

       …

(5)   Launching

       ⌐‾‾⌐   The T-tier of the causing event
       :
       ├___   The T-tier of the caused event
       ___

Three points in (4) indicate that the temporal tier in question does not have any specific form, and the equal sign (=) means that the causing event and the caused event have the same temporal structure. The horizontal line in (5) denotes time duration and the vertical line a point of time. The lines under the temporal structure indicate optionality. The colon stands for correspondence between the points of time, i.e. the end boundary of the temporal tier of zone 3 is the starting boundary of core zones 2 and 1.

(Nikanne 1990: 188–190.) For example the T-tier of the sentence *Matti hid the ball in the kitchen* has the characteristics of Entrainment causation, because the causing event (Matti's hiding the ball) lasts as long as the caused event (the ball coming to be hidden).

The time line of adjuncts falls outside the scope of the temporal tier discussed above. Nikanne (1997a: 344) suggests a separate temporal tier, *the constructional T-tier* or *CT-tier* that relates the temporal tier of a matrix clause to that of an adjunct. According to the theory of conceptual semantics, the T-tier of the matrix clause and the T-tier of the adjunct are separately linked to the CT-tier. The CT-tier itself has no exact structure but is a schematic notion. It is characterized only by the correspondence to a linear time course. It can be divided so that the beginning part of the shared T-tier describes the earlier time and the final part the latter time. If the CT-tier is divided, the abbreviation CT1 stands for the chronologically earlier part of the CT and CT2 stands for the chronologically latter part of the CT. The CT-tier can be described as in the following figure (Nikanne 1997a: 344–345):

    a. The unitary CT-tier:

              CT

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    b. The divided CT-tier:

           CT1   CT2

        -------- | --------

When the T-tiers of the matrix clause and the adjunct clause are related to the CT-tier, the notions "is equal to," "is included in" and in the negative "is not included in" are used. X stands for the T-tier of the adjunct and Y stands for T-tier of the matrix clause. The possible CT-relations are described as in (6):

(6) $X = Y$ means 'X is equal to Y'
       $X \in Y$ means 'X is included in Y'
       $X \notin Y$ means 'X is not included in Y'

The formal descriptions of the temporal tier relations are developed further in Pörn (2004). Pörn (2004: 32–36) gives a more explicit formalization of the temporal relationship between the matrix clause and the adjunct clause by defining explicitly the starting point and the final point of each situation

(the matrix clause and the adjunct clause). The following abbreviations are used:

$P_s(M) / (A)$ 'The starting point of the T-tier of the Matrix clause/Adjunct clause'
$P_f(M) / (A)$ 'The final point of the T-tier of the Matrix clause/Adjunct clause'

According to the formalization above the Entrainment and Launching causations can be described as follows:

(7)   Entrainment:
       $P_s(M) = P_s(A)$ and $P_f(M) = P_f(A)$ ('is equal to')

(8)   Launching:
       $P_s(M) \geq P_f(A)$ ('is later than or equal to') <u>or</u>
       $P_s(A) \geq P_f(M)$ ('is later than or equal to')

The option possibility in the Launching causation is based on whether the matrix clause or the adjunct clause is interpreted as the causing situation. In the analyses in section 3 I will show that the formal description made by Pörn (2004) can also be used to describe the causal and temporal relations within the matrix clause.

3.   Causative spatial expressions in Finnish and Swedish

3.1   The Finnish verb *piilottaa* ('hide') and its Swedish counterpart *gömma*

In this section I analyze the Finnish verb *piilottaa*, which is constructed with a case of change—the illative—that usually refers to movement in direction <u>to</u> some place. As already mentioned in section 2, the conceptual structure of the Finnish sentence *Matti piilotti pallon keittiöön* ('Matti hid the ball in the kitchen') is 'Matti caused the ball to move along a path towards the kitchen'. The verb *piilottaa* has three potential syntactic arguments, because the LCS of the verb contains three functions [CAUSE, GO, TO]. The LCS of the verb *piilottaa* is formally described in (9):

(9)   *Matti   piilott   -i   pallo -n   keittiö -ön.*
       Matti   hide   -PAST-3SG ball -ACC kitchen -ILLATIVE
       'Matti hid the ball in the kitchen'.

Path-structure:

[Matti$_2$ piilotti$_1$ pallon$_3$ keittiöön$_4$]$_5$.

SUBJ   OBJ   Syntactic functions

$$\begin{bmatrix} \text{Agent} & \text{Theme} & \textbf{Goal} \\ \text{MATTI}_2 & \text{BALL}_3 & \text{KITCHEN}_4 \\ \uparrow & \uparrow & \uparrow \\ \text{CAUSE}_1 \rightarrow & \textbf{GO}_1 \rightarrow & \textbf{TO}_1 \\ \text{Physical} & \text{Spatial} & \end{bmatrix}_5$$

Thematic arguments

Thematic functions

Semantic fields

T-tier: *Entrainment*: P_s (zone 3) = P_s (zones 2–1) and P_f (zone 3) = P_f (zones 2–1)

When describing the co-indexing of pieces of the lexical conceptual structure and the conceptual structure I use the formal description made by Nikanne (2000). The subscript indices determine the syntactico-conceptual linking. All the pieces of the conceptual and syntactic structure that are marked with the same subscript indices correspond to pieces of the lexical conceptual structure of the word that is marked with the same subscript indices. For example in sentence (9) all pieces in the conceptual structure that are marked with the subscript indices 1 correspond to the LCS of the verb *piilottaa,* which is marked with the same subscript indices in the syntax. The Agent MATTI that is marked with the subscript indices 2 in the conceptual structure corresponds to the subject *Matti* that is marked with the same subscript indices in the syntax.

As already noticed in section 2, the lexical function chain (f-chain) of the verb *piilottaa* selects an Agent for CAUSE, a Theme for GO, and a Goal for TO. The Agent is subject (*Matti*), the Theme is object (*ball*), and the Goal is expressed in the syntax as illative locative case adverb (*kitchen*). The situation expressed by the verb *piilottaa* is thus conceptualized as *path* or *direction* of the Theme's movement. This can be explained by referring to the LCS of the verb *piilottaa,* which contains an *event*-function GO that selects a *path*-function TO. The verb *piilottaa* occurs thus as a *path*-structure.[5]

The temporal tier (T-tier) in sentence (9) has the characteristics of *Entrainment* causation. The causing event (Matti's hiding the ball) lasts as long as the caused event (the ball coming to be hidden). Thus, the causing and the caused situations are temporally simultaneous. As Nikanne (1990:

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[5] For *path*-structures, see Nikanne (1997c).

177–186) points out, the temporal structure of the situation is in core zones 2 and 1 derived from the thematic structure features, such as directionality- and boundedness-features. These features are also important in the temporal structure of zone 3, where causation is located. The problem is to determine how the temporal structures of each situation, i.e. how the causing situation (in zone 3) and the caused situation (in core zones 2 and 1), are temporally related to each other. This is explicitly formalized by defining the starting point and the final point of each situation. Thus, the T-tier of sentence (9) is Entrainment: the starting point of the causing situation in zone 3 is equal to the starting point of the caused situation in core zones 2 and 1, and the final point of the causing situation in zone 3 is equal to the final point of the caused situation in core zones 2 and 1.

The Swedish counterpart of the Finnish sentence *Matti piilotti pallon keittiöön* is constructed with a PP-*i*, which usually refers to location at some place: *Matti gömde bollen i köket*.[6] The conceptual structure of the Swedish sentence is 'Matti caused the location of the ball to change place to be at the kitchen'. The verb *gömma* has four potential syntactic arguments, because its LCS contains four functions [CAUSE, INCH, BE, AT]:

(10) *Matti   göm -de   boll -en   i kök   -et.*
      Matti   hide -PAST   ball -DEF   i-PP-kitchen -DEF
      'Matti hid the ball in the kitchen'.

Interpretation 1: PP-*i*: *Argument*

[Matti$_2$ gömde$_1$ bollen$_3$ i köket$_4$]$_5$.

SUBJ   OBJ

$$
\begin{bmatrix}
\text{Agent} & \text{Theme} & \textbf{Location} \\
\text{MATTI}_2 & \text{BALL}_3 & \text{KITCHEN}_4 \\
\uparrow & \uparrow & \uparrow \\
\text{CAUSE}_1 \rightarrow \text{INCH}_1 & \textbf{BE}_1 \rightarrow & \textbf{AT}_1 \\
\text{Physical} & \text{Spatial} &
\end{bmatrix}_5
$$

T-tier: *Launching*: P_f(zone 3) = P_s(zones 2–1)

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[6] According to the Swedish dictionary *Svenskt språkbruk* (2003: 448), the verb *gömma* in the sense 'put away,' is constructed with a preposition phrase that expresses location at some place, e.g. *De hade gömt flyktingarna **i** källaren* ('They had hidden the refugees in the basement').

The lexical f-chain of the verb *gömma* selects an Agent argument for CAUSE, which is syntactically subject (*Matti*), a Theme for BE, which is syntactically object (*ball*), and a Location argument for AT, which is expressed in the syntax with the PP *i köket*. The Swedish verb *gömma* cannot, like its Finnish counterpart, occur as a *path*-structure. In Swedish the situation expressed by the verb *gömma* is **not** conceptualized as *path* or *direction* of the Theme's movement, but as the Theme's change of location. This can be explained formally by referring to the LCS of the Swedish verb *gömma*, which contains a change function INCH, which in turn selects a *state*-function BE that selects a *place*-function AT. The PP-*i* is linked to the argument structure of the verb, to the caused situation in core zones 2 and 1. Without explicit context the preference for the argument reading is strong. (For another interpretation of the Swedish PP, see 12.)

The T-tier of the Swedish sentence *Matti gömde bollen i köket* differs from that in Finnish. The causing and the caused situations cannot be temporally simultaneous. The causing event (Matti's hiding or changing the ball's location) is temporally separated from the caused situation (the ball's new location at the kitchen). The causing event (Matti's hiding the ball) ends at the same time as the caused event (the ball's location at the kitchen) starts. The temporal structure of the sentence thus has the characteristics of *Launching* causation. The end boundary of the temporal tier of zone 3 is the starting boundary of core zones 2 and 1. This is formally described as follows: the starting point of core zones 2 and 1 is equal to the final point of zone 3.
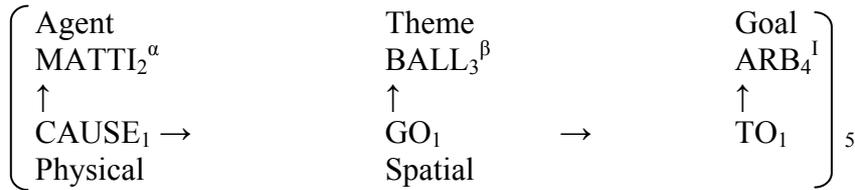
It must be pointed out that the Finnish *path*-structure, i.e. [*piilottaa* + NP-illative] is not the only possible syntactic structure of the Finnish verb *piilottaa*. If the purpose is to express the goal of the hiding operation, then the sentence *Matti piilotti pallon keittiössä* ('Matti hid the ball in the kitchen') is not correct in Finnish. The NP-inessive (*keittiössä*) cannot be interpreted as the goal of the ball's movement (i.e. hiding-place), as the illative (*keittiöön*) in (9). The sentence *Matti piilotti pallon keittiössä* must be interpreted as for example 'Matti piilotti pallon laatikkoon keittiössä' ('Matti hid the ball in a box in the kitchen'), i.e. 'Matti hid the ball <u>somewhere</u> and this event or hiding took place in the kitchen'. In the construction [*piilottaa* + NP-inessive] the goal of the ball's movement is not expressed in the syntax. The Goal is implicit, i.e. not linked to the syntactic representation by the LCS of the verb. This is indicated by the superscript index I in (11):

(11) *Matti   piilott   -i   pallo -n   keittiö -ssä.*
     Matti   hide   -PAST-3SG   ball -ACC kitchen -INESSIVE
     'Matti hid the ball while being in the kitchen'.

Place-structure:
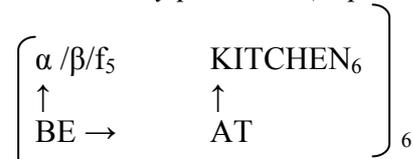
[Matti$_2$ piilotti$_1$ pallon$_3$]$_5$[keittiössä]$_6$.
Matrix clause: [Matti$_2$ piilotti$_1$ pallon$_3$]$_5$.

$$
\left[
\begin{array}{lll}
\text{Agent} & \text{Theme} & \text{Goal} \\
\text{MATTI}_2{}^{\alpha} & \text{BALL}_3{}^{\beta} & \text{ARB}_4{}^{\text{I}} \\
\uparrow & \uparrow & \uparrow \\
\text{CAUSE}_1 \rightarrow & \text{GO}_1 \quad\rightarrow & \text{TO}_1 \\
\text{Physical} & \text{Spatial} &
\end{array}
\right]_5
$$

T-tier: *Entrainment*: P_s (zone 3) = P_s (zones 2–1) and P_f (zone 3) = P_f (zones 2–1)

Add-on-adjunct: [keittiössä]$_6$
Secondary predicate (depictive) adjunct

$$
\left[
\begin{array}{ll}
\alpha\ /\beta/f_5 & \text{KITCHEN}_6 \\
\uparrow & \uparrow \\
\text{BE} \rightarrow & \text{AT}
\end{array}
\right]_6
$$

CT-tier: $P_s(M_5) = P_s(A_6)$ and $P_f(M_5) = P_f(A_6)$

The NP-inessive *keittiössä* cannot be linked to the argument structure of the verb *piilottaa*, but it stays outside the argument structure of the verb, as an *add-on-adjunct*. Nikanne (1997a: 342–343) divides adjuncts into two groups: *fill-in-adjuncts* and *add-on-adjuncts*. Fill-in-adjuncts (see sentence 14) are part of the core sentence. They express an argument that is lexically marked as implicit. These are not syntactic arguments but linked to a verb's semantic argument with an argument construction. Add-on-adjuncts, on the other hand, are not part of the core sentence, but add something to its meaning.[7] In sentence (11) the add-on-adjunct *keittiössä* only expresses where the hiding event takes place. Therefore, it is a secondary predicate, depictive adjunct.

     The conceptual structure of the secondary predicate adjunct is as follows: the argument of the function BE is Theme, which is located somewhere. The Theme of the secondary predicate can be *Matti* (Matti is in the kitchen), *the ball* (The ball is in the kitchen) or the whole *situation* expressed by the verb *piilottaa* (The hiding takes place in the kitchen). This

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[7] For adjunct constructions, see e.g. Nikanne (1990).

is formally described using Greek letters. As already mentioned, the subscript indices determine the syntactico-conceptual linking, whereas the Greek letters indicate binding relations within the conceptual structure: the superscript α indicates the binder, and the element marked with the normal-sized α is the bindee. These arguments are co-referential, following the marking system of Jackendoff (see Jackendoff 1990: 63). *Alpha* binds the argument of the function CAUSE (Agent) and *Beta* binds the argument of the function GO (Theme). The function AT selects the Location argument (*kitchen*), which is expressed in the syntax as NP-inessive. This kind of locative case adjunct is described as a *place*-structure (see Nikanne 1997c). Jackendoff (1990: 277) analyzes the English depictive adjunct as an idiomatic construction that links the adjunct structure to a conceptual structure and gives the function BE and the possible predication options as parts of the construction. Such a construction is given in (11).

I argue that the temporal condition of a *place*-structure is that both situations (expressed by the matrix clause and the adjunct clause) are temporally simultaneous: "Matti hid the ball while being in the kitchen". This is formally described in the CT-tier. The starting point of the matrix clause is equal to the starting point of the adjunct clause, and the final point of the matrix clause is equal to the final point of the adjunct clause. In this case the temporal relationship between the matrix clause and the adjunct clause is not about a causation event. The causation is expressed within the matrix clause. The T-tier of the matrix clause has the characteristics of Entrainment causation, as in (9). The Goal of the ball's movement, i.e. the final point of the caused situation in core zones 2 and 1, is implicit. Thus, it differs from that in (9).

An important point concerning the language-specific differences is that the Swedish PP-*i* expression in connection with the verb *gömma* is ambiguous. The most natural interpretation of the sentence *Matti gömde bollen i köket* is that given in (10), which means that the PP *i köket* expresses the hiding-place and is thus linked to the argument structure of the verb, to the caused situation in core zones 2 and 1. However, within another context the Swedish construction [*gömma* + PP-*i*], as in *Matti gömde bollen i köket*, can have another interpretation: 'Matti hid the ball <u>somewhere</u> and this hiding took place in the kitchen,' e.g. 'Matti gömde bollen i lådan i köket' ('Matti hid the ball in a box in the kitchen'). The Location argument (hiding-place) is thus implicit, whereas the PP *i köket* stays outside the argument structure of the verb, as a depictive adjunct. Thus, the PP occurs as a *place*-structure:

(12) *Matti   göm -de   boll -en   i kök   -et.*
      Matti   hide -PAST   ball -DEF   *i*-PP-kitchen -DEF
      'Matti hid the ball while being in the kitchen'.

Interpretation 2: PP-*i*: *Adjunct*

Place-structure:

[Matti$_2$ gömde$_1$ bollen$_3$]$_5$[i köket]$_6$.

Matrix clause: [Matti$_2$ gömde$_1$ bollen$_3$]$_5$.

$$
\left[
\begin{array}{lll}
\text{Agent} & \text{Theme} & \text{Location} \\
\text{MATTI}_2{}^{\alpha} & \text{BALL}_3{}^{\beta} & \text{ARB}_4{}^{\text{I}} \\
\uparrow & \uparrow & \uparrow \\
\text{CAUSE}_1 \rightarrow \text{INCH}_1 \rightarrow & \text{BE}_1 \quad\quad \rightarrow & \text{AT}_1 \\
\text{Physical} & \text{Spatial} &
\end{array}
\right]_5
$$

T-tier: *Launching*: $P_f(\text{zone } 3) = P_s(\text{zones } 2\text{–}1)$

Add-on-adjunct: [i köket]$_6$
Secondary predicate (depictive) adjunct

$$
\left[
\begin{array}{ll}
\alpha\,/\beta/f_5 & \text{KITCHEN}_6 \\
\uparrow & \uparrow \\
\text{BE} \rightarrow & \text{AT}
\end{array}
\right]_6
$$

CT-tier: $P_s(M_5) = P_s(A_6)$ and $P_f(M_5) = P_f(A_6)$

The conceptual structure of the secondary predicate adjunct PP-*i* is as follows: the argument of the function BE is Theme, which is located somewhere. The Theme of the secondary predicate can be *Matti* (Matti is in the kitchen), *the ball* (The ball is in the kitchen) or the whole *situation* expressed by the verb *gömma* (The hiding takes place in the kitchen). Thus, the conceptual structure of the Swedish PP-*i*—interpreted as an adjunct— corresponds to the construction [*piilottaa* + NP-inessive] in Finnish. (For detailed descriptions, see 11.)

3.2   The Finnish verb *hakea* ('fetch') and its Swedish counterpart *hämta*

In this section the focus is on the Finnish verb *hakea*, which is constructed with a case of change—the elative—that usually refers to movement in direction <u>from</u> some place. It must be pointed out that another Finnish verb, *löytää* ('find'), is also constructed with a NP-elative, and semantically a closer counterpart to the verb *piilottaa*, as in *Matti löysi pallon keittiöstä* ('Matti found the ball in the kitchen'). The verb *löytää*, however, differs conceptually from the verb *hakea* in that it does not entail that the object found is moved from the "hiding-place". In fact, the verb *löytää* is conceptualized as follows: 'to get information about the location of something/someone'. Thus, the verb *löytää* is not a causative verb at all and it does not express spatial movement. It will therefore not be dealt with here.

The conceptual structure of the Finnish sentence *Matti haki pallon keittiöstä* is 'Matti caused the ball to move <u>from</u> the kitchen'. The verb *hakea* has three potential syntactic arguments, because the LCS of the verb *hakea* contains three functions [CAUSE, GO, FROM]. The LCS of the sentence is formally described in (13):

(13) *Matti   hak   -i   pallo -n   keittiö   -stä.*
      Matti   fetch -PAST-3SG ball -ACC   kitchen -ELATIVE
      'Matti fetched the ball from the kitchen'.

Path-structure:

[Matti$_2$ haki$_1$ pallon$_3$ keittiöstä$_4$]$_5$.

SUBJ   OBJ

$$
\begin{bmatrix}
\text{Agent} & \text{Theme} & \textbf{Source} \\
\text{MATTI}_2 & \text{BALL}_3 & \text{KITCHEN}_4 \\
\uparrow & \uparrow & \uparrow \\
\text{CAUSE}_1 \rightarrow & \textbf{GO}_1 \rightarrow & \textbf{FROM}_1 \\
\text{Physical} & \text{Spatial} &
\end{bmatrix}_5
$$

T-tier: *Entrainment*: P_s (zone 3) = P_s (zones 2–1) and P_f (zone 3) = P_f (zones 2–1)

The lexical f-chain of the verb *hakea* selects an Agent for CAUSE, a Theme for GO, and a Source for FROM. The Agent is subject (*Matti*), the Theme is object (*ball*), and the Source is expressed in the syntax as elative

locative case adverb (*kitchen*). The situation expressed by the verb *hakea* is conceptualized as *path* or *direction* of the Theme's movement. Thus, it occurs, like the Finnish verb *piilottaa*, as a *path*-structure. This can be explained by referring to the LCS of the verb *hakea*, which contains an *event*-function GO that selects a *path*-function FROM. As in connection with the verb *piilottaa*, the temporal tier (T-tier) of the sentence has the characteristics of *Entrainment* causation. The causing event (Matti's fetching the ball) lasts as long as the caused event (the ball being fetched). Thus, the causing and the caused situations are temporally simultaneous. (For detailed descriptions, see 9.)

The corresponding sentence in Swedish is *Matti hämtade bollen i köket* ('Matti fetched the ball from the kitchen'). In the Swedish dictionary *Svenskt språkbruk* (2003), the verb *hämta* ('fetch'), in the sense 'pick up,' is, like the verb *gömma*, constructed with a preposition that expresses location at some place (*i*, *på* etc.), e.g. *Hon gick och hämtade paketet på ICA*[8] ('She went to collect a parcel from ICA'). In *Svensk ordbok* (2000, 79), the Swedish verb *hämta* is semantically described as 'go and get something or someone and bring them back,' e.g. *hämta barnen på dagis* ('to pick up the children from the kindergarten').[9] However, the Swedish verb *hämta* differs conceptually from the verb *gömma*. The verb *hämta* has three potential syntactic arguments, because the LCS of the verb *hämta* contains three functions [CAUSE, GO, FROM]. The LCS of the sentence *Matti hämtade bollen i köket* is formally described in (14):

---

[8] The Swedish verb *hämta* is often used with the preposition *från* ('from') in speech.

[9] According to the Finnish-Swedish dictionary *Suuri suomi-ruotsi-sanakirja* (1997), the Finnish phrase *hakea lapset päiväkodista* ('pick up the children at the kindergarten') is translated into Swedish with *hämta barnen på dagis*.

(14) *Matti   hämta -de   boll -en   i kök   -et*
  Matti   fetch   -PAST   ball -DEF *i*-PP-kitchen   -DEF
  'Matti fetched the ball from the kitchen'.

Interpretation 1: PP-i: Argument (Fill-in-adjunct)

[Matti$_2$ hämtade$_1$ bollen$_3$ i köket$_4$]$_5$
Matrix clause: [Matti$_2$ hämtade$_1$ bollen$_3$]

$$\left[\begin{array}{lll} \text{Agent} & \text{Theme} & \textbf{Source} \\ \text{MATTI}_2{}^{\alpha} & \alpha^{\,I} & \beta^{\,I} \\ \uparrow & \uparrow & \uparrow \\ \text{CAUSE}_1 \rightarrow & \text{GO}_1 \quad \rightarrow & \textbf{FROM}_1 \\ \text{Physical} & \text{Spatial} & \end{array} \right]_5$$

T-tier: *Entrainment*: P_s (zone 3) = P_s (zones 2–1) and P_f (zone 3) = P_f (zones 2–1)

Fill-in-adjunct: [i köket$_4$]

$$\left[\begin{array}{ll} \text{BALL}^{\alpha}{}_3 & \text{KITCHEN}^{\beta}{}_4 \\ \uparrow & \uparrow \\ \text{BE}_1 \quad \rightarrow & \textbf{AT}_1 \\ \text{Spatial} & \end{array} \right]_6$$

CT-tier: P_s (M$_5$) = P_f (A$_6$)

Although both the Swedish verbs *gömma* and *hämta* are constructed with a PP that expresses location at some place, the sentence *Matti hämtade bollen i köket* cannot be conceptualized as 'Matti caused the location of the ball to change place to be at the kitchen' (c.f. 10, *Matti gömde bollen i köket*). The subject argument (*Matti*) cannot be interpreted as the Agent of the ball's location, but as the Agent of the ball's transfer from the kitchen. In connection with the verb *hämta* the Swedish PP expresses the Theme's location <u>before</u> its transfer from the source. The *path* of the Theme's movement is implicit in Swedish. Thus, the PP *i köket* must be described as a *fill-in-adjunct* that is linked to the argument structure of the verb *hämta*, to the caused situation, in core zones 2 and 1. *Alpha* binds the argument of the function BE (Theme) of the fill-in-adjunct and *Beta* binds the argument of the function AT (Location). The Theme argument of the function BE in (14) must be *the ball*. The Theme argument can be neither *Matti* nor the whole situation expressed by the verb *hämta*, as in the sentence (12). The PP-*i* is thus part of the core sentence in the expression [*hämta* + PP-*i*].

However, it must be noticed that the Swedish expression [*hämta* + PP-*i*] is, like [*gömma* + PP-*i*], ambiguous (cf. add-on-adjunct in 16).

The temporal tier (T-tier) of the matrix clause in (14) has the characteristics of *Entrainment* causation. The causing event (Matti's fetching the ball) lasts as long as the caused event (the ball being fetched). This means that the causing and the caused situations are temporally simultaneous. However, the fact that the ball is located at the kitchen before it can be transferred from the kitchen is described formally in the CT-tier as follows: The starting point of the matrix clause is equal to the final point of the adjunct clause. The CT-tier of the expression in (14) encodes that the situation expressed by the adjunct clause takes place <u>before</u> the situation expressed by the matrix clause. Thus, the temporal relationship between the matrix clause and the adjunct clause in (14) differs from that in (12).

The Finnish verb *hakea* can, like the verb *piilottaa*, also be constructed with a NP-inessive and thus occur as a *place*-structure. The sentence *Matti haki pallon keittiössä* ('Matti fetched the ball in the kitchen') can, within another context, be interpreted as for example 'Matti oli keittiössä hakemassa palloa laatikosta' ('Matti was in the kitchen fetching the ball from the box'). To put it differently, the adverb *keittiössä* only describes the *location* of the fetching event, or where the fetching takes place.

(15) *Matti hak -i   pallo -n   keittiö -ssä.*
Matti   fetch -PAST-3SG ball -ACC kitchen -INESSIVE
'Matti fetched the ball in the kitchen'

Place-structure:

[Matti$_2$ haki$_1$ pallon$_3$]$_5$[keittiössä$_6$].
Matrix clause: [Matti$_2$ haki$_1$ pallon$_3$]$_5$.

$$
\begin{bmatrix}
\text{Agent} & \text{Theme} & \text{Source} \\
\text{MATTI}_2^{\alpha} & \text{BALL}_3^{\beta} & \text{ARB}_4^{\text{I}} \\
\uparrow & \uparrow & \uparrow \\
\text{CAUSE}_1 \rightarrow & \text{GO}_1 \quad\quad \rightarrow & \text{FROM}_1
\end{bmatrix}_5
$$

T-tier: *Entrainment*: P_s (zone 3) = P_s (zones 2–1) and P_f (zone 3) = P_f (zones 2–1)

Add-on-adjunct: [keittiössä]$_6$

Secondary predicate, (depictive) adjunct

$$
\begin{bmatrix}
\alpha /\beta/f_5 & \text{KITCHEN}_6 \\
\uparrow & \uparrow \\
\text{BE} \rightarrow & \text{AT}
\end{bmatrix}_6
$$

CT-tier: P_s (M$_5$) = P_s (A$_6$) and P_f (M$_5$) = P_f (A$_6$)

The NP-inessive *keittiössä* cannot be interpreted as the source of the ball's movement, as the NP-elative in the sentence *Matti haki pallon keittiöstä*. The sentence *Matti haki pallon keittiössä* must be interpreted as 'Matti fetched the ball <u>from</u> <u>somewhere</u> and this event or fetching took place in the kitchen'. The source is implicit, whereas the locative case adverb stays outside the argument structure of the verb, as an *add-on-adjunct*. Despite the differences concerning the Goal respectively the Source argument in zone 1, the construction [*hakea* + NP-inessive] corresponds to the construction [*piilottaa* + NP-inessive]. (For detailed descriptions, see also 11.)

As already mentioned, the Swedish expression [*hämta* + PP-*i*] is, like [*gömma* + PP-*i*], ambiguous. The most natural interpretation of the expression *Matti hämtade bollen i köket* ('Matti fetched the ball from the kitchen'), is that the PP is linked to the argument structure of the verb, as a *fill-in-adjunct* (see 14). Without explicit context the preference for the argument reading is strong. However, within another context the PP can stay outside the argument structure of the verb, as an *add-on-adjunct* (i.e. depictive adjunct). Thus, it occurs as a *place*-structure, e.g. 'Matti hämtade

bollen i lådan i köket' ('Matti fetched the ball from the box in the kitchen'). (cf. 14.)

(16) *Matti   hämta   -de   boll   -en   i kök   -et.*
     Matti   fetch   -PAST   ball   -DEF   *i*-PP-kitchen   -DEF
     'Matti fetched the ball in the kitchen'.

Interpretation 2: PP-*i* = *Adjunct*

Place-structure:

[Matti$_2$ hämtade$_1$ bollen$_3$]$_5$[i köket$_6$].

Matrix clause: [Matti$_2$ hämtade$_1$ bollen$_3$]$_5$.

$$\begin{bmatrix} \text{Agent} & \text{Theme} & \text{Source} \\ \text{MATTI}_2{}^{\alpha} & \text{BALL}_3{}^{\beta} & \text{ARB}_4{}^{I} \\ \uparrow & \uparrow & \uparrow \\ \text{CAUSE}_1 \rightarrow & \text{GO}_1 \quad\rightarrow & \text{FROM}_1 \end{bmatrix}_5$$

T-tier: *Entrainment*: P_s(zone 3) = P_s(zones 2–1) and P_f(zone 3) = P_f(zones 2–1)

Add-on-adjunct: [i köket]$_6$

Secondary predicate, (depictive) adjunct

$$\begin{bmatrix} \alpha / \beta / f_5 & \text{KITCHEN}_6 \\ \uparrow & \uparrow \\ \text{BE} \rightarrow & \text{AT} \end{bmatrix}_6$$

CT-tier: P_s(M$_5$) = P_s(A$_6$) and P_f(M$_5$) = P_f(A$_6$)

The conceptual structure of the Swedish PP-*i*—interpreted as an add-on-adjunct—corresponds to the NP-inessive in Finnish. (For detailed descriptions, see 15.) The formal description of the *place*-structure in connection with the verb *hämta*, given above, corresponds to that in connection with the verb *gömma* (given in 12).

4. Conclusions

This article describes formally some language-specific differences—concerning the Finnish causative motion verbs *piilottaa* ('hide') and *hakea* ('fetch'), and their Swedish counterparts—through the theory of conceptual

semantics. I have pointed out that syntactic-semantic differences between the languages can be explained as conceptual phenomena. By developing the theory of the temporal structure I have explained the language-specific differences through temporal relations within conceptual structure. In Finnish the causative motion verbs *piilottaa* and *hakea* are both conceptualized as a *path* (or *direction*) of the Theme's movement, whereas the Swedish counterparts *gömma* and *hämta* are conceptualized as a *location* of the Theme <u>after</u> (*gömma*) respectively <u>before</u> (*hämta*) its movement. There is thus a mapping between spatial and temporal tier within conceptual structure in Finnish, whereas there is no such mapping in Swedish.

I assume a one-to-one mapping between syntax and conceptual structure in Finnish. The Finnish verbs *piilottaa* and *hakea* can, depending on the syntactic structure, occur both as *path*- and *place*-structures. The expressions [*piilottaa* + NP-illative] and [*hakea* + NP-elative] have the *path*-structure reading, whereas the constructions [*piilottaa* + NP-inessive] and [*hakea* + NP-inessive] have the *place*-structure reading. The *path*-structure reading reflects the NP-illative/elative as argument, whereas the *place*-structure reading reflects the NP-inessive as adjunct. In Swedish, on the other hand, both the *path*- and the *place*-structure reading correspond to the PP-*i* in Swedish. The Swedish PP-*i* is ambiguous, i.e. it can occur both as argument and adjunct. There is thus no one-to-one mapping between syntax and conceptual structure in Swedish.

References

Chomsky, Noam (1993) A Minimalist Program for Linguistics Theory. In Kenneth Hale & Samuel Jay Keyser (eds.), *The View from Building 20*, pp. 1–52. Cambridge, MA: MIT Press.
—— (1995) *A Minimalist Program for Linguistics Theory*. Cambridge, MA: MIT Press.
Hakulinen, Lauri (1979) *Suomen kielen rakenne ja kehitys*. Helsinki: Otava.
Jackendoff, Ray (1983) *Semantics and Cognition*. Cambridge, MA: MIT Press.
—— (1987) The Status of Thematic Relations in Linguistic Theory. *Linguistic Inquiry* 18: 369–411.
—— (1990) *Semantic Structures*. Cambridge, MA: MIT Press.
Karlsson, Fred (1978) *Finsk Grammatik*. Helsinki: SKS.
Kytömäki, Leena (1978) Kuratiivikausatiivit. In Alho Alhoniemi et al. (eds.), *Rakenteita*. Juhlakirja Osmo Ikolan 60–vuotispäiväksi 6.2.1978, pp. 29–150. Turku: Turun yliopiston suomalaisen ja yleisen kielitieteen laitoksen julkaisuja 6.
—— (1989) Teettoverbit: johdon ja taivutuksen välimaastoa. *Sananjalka 31*: 61–79.
Nikanne, Urpo (1990) *Zones and Tiers*. Helsinki: SKS.

—— (1995) Action Tier Formation and Argument Linking. *Studia Linguistica* 49: 1–31.

—— (1997a) Suomen infiniittisten adjunktien temporaalinen tulkinta. *Virittäjä* 3: 338–357.

—— (1997b) Lexical Conceptual Structure and Syntactic Arguments. *SKY Journal of Linguistics* 1997: 81–118.

—— (1997c) Locative case adjuncts in Finnish: Notes on Syntactico-Semantic Interface. *Nordic Journal of Linguistics* 20: 155–178.

—— (2000) Some Restrictions in Linguistic Expressions of Spatial Movement. In Emile van der Zee & Urpo Nikanne (eds.), *Cognitive Interfaces: Constraints on linking cognitive Information*, pp. 77–93. New York: Oxford University Press.

—— (2006) *Konseptuaalisen semantiikan perusteet.* http://www.abo.fi/fak/hf/fin/kurssit/KONSEM/index.htm.

NS = *Nykysuomen sanakirja I–IV* (1951–1961). Porvoo: WSOY.

Paulsen, Geda (forthcoming) Temporal and causal relations of Finnish deverbal causatives. In Mila Dimitrova-Vulchanova & Urpo Nikanne (eds.), *Causatives.* Oslo: Novus forlag.

Pörn, Michaela (2004) *Suomen tunnekausatiiviverbit ja niiden lausemaiset täydennykset*. Helsinki: SKS.

Siro, Paavo (1964) *Suomen kielen lauseoppi*. Helsinki: Tietosanakirja.

Suuri suomi-ruotsi-sanakirja (1997) Porvoo-Helsinki-Juva: WSOY.

Svensk ordbok (2000) Charlotta af Hällström & Mikael Reuter. Schildts.

Svenskt språkbruk: *Ordbok över konstruktioner och fraser* (2003) Utarbetad av Svenska språknämnden. Norstedts ordbok.

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