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THE DYNAMICS OF FINNISH CAUSATIVE VERB DERIVATION PROTOTYPES AND CONSTRUCTIONS*

Abstract. The present paper proposes an alternative approach to the aspects of word formation and lexical processes by the example of the Finnish causative verbs derived with the suffix *(U)ttA*. The causative verb behaviour is argued to be affected by a relational network of both prototypical and construction-specific structures. The prototype structures defined by the derivatives' salient features in form of the conceptual structure and linking regularities are used to describe the general behaviour of the causative derivatives and to contrast to the idiosyncratic patterns occurring in connection with these verbs. The constructions discussed in this paper are the emotive causative construction and the middle construction.

Keywords: Finnish, causative derivation, conceptual semantics, prototypes, constructions.

1. Introduction¹

Generally, the linguistic categories are thought to be of two types: either classic, clear-cut categories or prototype-based, gradual types, emphasizing the different status of the members of a class (see e.g. Taylor 1989). The goal of the present paper is to show that for a more comprehensive account of the dynamics affecting the processes within a group of derivative verbs, it is useful to combine both the classical and prototype-based categories. The idea is that in order to specify the gradual discrepancy as well as the changeable and fixed semantic features of the members of a category, the decompositional analysis of the syntactic and semantic properties of the linguistic phenomenon is needed.

The subject of examination of this study are the morphological causative verbs in Finnish, derived with the suffix *(U)ttA*. I will argue that instead

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of the strictly morphosyntactic division of verbs into derivative classes, the derivative verbs can be considered as independent but related lexemes that are able to undergo certain syntactic and semantic-pragmatic alterations. The argumentation will propose a derivative verb alignment dependent on the participation of the verbs in the prototype and constructional patterns. The prototype templates in this study instantiate the shared general features of causatives and the constructional patterns represent special linking configurations in relation to the morphology, syntax or semantics. The constructions discussed here cluster around the reverse argument structure pattern, showing valency-retaining and even valency-reducing properties, i.e. the opposite direction in regard to the function generally connected to the causative derivation. The main patterns examined in this article are the emotive causative construction and the middle construction.

The analysis of the prototype structures and constructions of causatives is based on the framework of conceptual semantics, in particular its tier net model (Nikanne 1990; 1997; 2002; 2005; 2006), which provides a formal methodology to approach the natural language with basically classical categories. An introduction of relevant levels of description for the present purposes is given in section 3. Before that, the Finnish causative derivation is discussed briefly in section 2. The section 4 is devoted to the analysis of prototype structures and the section 5 discusses the constructional structures. The conclusions are drawn in section 6.

2. The causative verbs in Finnish

Within Fennistics, the causative verbs are generally explained as verbs that denote causation of the root word's semantic content (Hakulinen 1968 : 219; Penttilä 1963 : 533), implying a valence-raising derivative relation. The precondition of the causative suffixation is seen as the narrow approach on causatives in the reference grammar of Finnish, "Iso suomen kielioppi" (Hakulinen, Vilkuna, Korhonen, Koivisto, Heinonen, Alho 2004 : §463); in a broader approach, causatives are any verbs that express a causative situation. The focus of this paper is on the derived causatives and the lexical/constructional relationships between them. In Finnish, the causative verbs are regularly produced² by attaching the suffix (*t*)*tA* to nominal or verbal stems: *kunno-sta-a* 'to mend', *vaale-nta-a* 'to whiten'; *kivi-ttä-ä* 'to throw stones', *puoli-tta-a* 'to halve'; *kehrä-yttä-ä* 'to make s.o. spin'. The suffix (*U*)*ttA*³ is even used recursively in suffix combinations *ttA-ttA*, *ttA-UttA*: *tuo-ta-tta-a* 'make s.o. bring', *tutki-t-utta-a* 'to make s.o. (make s.o.) investigate'.

² The possible root word scale of causative derivatives is large, as there are no structural restrictions to the causativisation process (about the productivity of the deverbal causatives, see Kytömäki 1978). There are, however, also lexicalised *ttA*-verbs like *jonottaa* 'queue', *odottaa* 'wait'.

³ The suffix *-UttA-* can be analysed as a subtype of *-ttA-*, because the semantic motivation (reflexive, automative or translative) of *-U-* is not assumed to be present in causative derivatives; the suffixes with the consonant combinations *-stA-* and *-ntA-* are analysed as the variants of *-tA-* (e.g. Karlsson 1983; Hakulinen, Vilkuna, Korhonen, Koivisto, Heinonen, Alho 2004 : §318). The surface form of *ttA* stands for the variations *t*, *ta*, *tä*, *ttA*, *ttä* and the surface form of *U* for *u*, *ü*, the *a/ä* and *u/ü*-variation depending on the vowel harmony of a word in Finnish (Kytömäki 1992 : 8). The *t*-element thus represents the causative component and the main function of *U* between causative suffixes is to bond the causative suffixes phonologically.

In this article, I will discuss particularly the causatives with the morphological form (*U*)*ttA* and its combinations; these are typically deverbal derivatives. There is a class of causatives derived with (*U*)*ttA* that are traditionally identified as *curative causatives* (Fin. *kuratiivikausatiivit*), encoding two active, typically human, arguments and activating the meaning 'X makes Y do something'. The classification of curatives is divided in generally two approaches: based on morphosyntactic requirements⁴ (Penttilä 1957; Hakulinen 1968; Hakulinen, Karlsson 1979; Hakulinen, Vilkuna, Korhonen, Koivisto, Heinonen, Alho 2004 : §313–315)⁵ or additionally also on semantic criteria (Kytömäki 1978; 1989). According to the first school, curatives are only the causatives derived from transitive root verbs, and as the marker of a curative verb the derivative governs an adjunct in the adessive case. The derivation process changes the valence of the root verb, affecting the relation between the constituents of the sentence. The derivative adds a subject argument to the proposition and a curative verb itself is assumed to be syntactically always transitive (Kytömäki 1989 : 62). The subject argument of the root verb, the implicit agent, is degraded to the adjunct position in the constituent structure of the derivative, whereas the object argument of the root verb keeps its position. An example of a curative causative sentence is given in (1); the subject argument of the root verb (*työmiehet* 'workmen') is expressed as the adessive adjunct:

- (1) *Matti rakennuttaa työmiehillä talon*
Matti build-CAUS-3SG workman-PL-ADE house-ACC
'Matti makes the workmen build the house'

An account of curative causatives based on the transitivity criterion has its roots in the generative grammar tradition, treating causatives as a product of syntactic transformation. Kytömäki (1978 : 137–139) recognises the relative nature of verb transitivity and the need for an inclusion of the semantic conditions when classifying curatives. She points out that transitive verbs may be semantically different, like for instance *surra* 'to aggrieve' and *lyödä* 'to hit': the derivative *surettaa* expresses a direct causation (the subject referent has an immediate effect on the object), whereas *lyöttää* involves an indirect causation (the subject argument gives the hitter an order to act). Kytömäki (1978 : 139–145) emphasises the socially interactive nature of the first causation and adds two semantic criteria to the definition of the curative verb class. I refer to these criteria enabling the curative forming of intransitive root verbs as the *activity criterion* and the *non-participation criterion* (see also Paulsen 2011):

- (2) The semantic criteria of curative causatives:
a. the *activity criterion* — the root verb of a curative may be an intransitive verb as long as it indicates action

⁴ According to Kytömäki (1992 : 241), the difference between ordinary causatives and curatives is partly morphological — the general causative suffix *tA* does not produce curatives, whereas (*U*)*ttA* gives both causatives and curatives; the suffix combination *ttA*-(*U*)*ttA* ascertains the curative reading.

⁵ Siro (1964) does not analyse curatives as a separate class but categorises them under the upper concept of causatives and considers the causative derivation itself as a syntactic process.

- b. **the non-participation criterion** – the subject argument of the derivative (the indirect agent) must not be involved in activity denoted by the root verb, whereas the subject argument of the root verb (the direct agent, realized as the object of the sentence or as an adessive adjunct) is the performer of this action.

Thus, causatives derived from basically intransitive activity verbs like *kävelyttää* 'make s.o. walk' or *laulattaa* 'make s.o. sing' can also be classified as curatives. An example with the verb *laulattaa* 'make s.o. sing' is presented in (3). Note that the subject argument of the root verb (*lapset* 'children') in (3) assigns the object position.

- (3) *Opettaja laulattaa lapsia*
 teacher sing-CAUS-PRES-3SG child-PL-PART
 'The teacher makes children sing'

The semantic criteria widen the view on the curative causatives and explain the essential properties of these verbs; however, a determination of curatives as a homogenous verb class is yet problematic. The participation of the indirect agent in the activity is a highly context-dependent phenomenon; for instance in the example (3) above, there are two possible inferences we can make: the teacher sings along with the children or remains silent while the children are singing. The types of activity denoted by verbs derived with the suffix (*U*)*ttA* also vary largely (not only physical and concrete but also for instance mental)⁶. The examples (4–5) present the derivatives of transitive non-active root verbs derived with the suffix (*U*)*ttA*, *rakastuttaa* 'make s.o. fall in love' (4) and *ihailuttaa* 'make s.o. admire'. The example (6), taken from Paulsen 2011 : 22, shows that even a basically stative verb like *jonottaa* 'to queue' can adopt the curative derivative pattern.

- (4) *Näyttelijä rakastutti yleisön rooliinsa*
 actor love-CAUS-PAST-3SG audience-ACC role-ILL-PX3SG
 'The actor made the audience fall in love with his role'
- (5) *Kiinteistönvälittäjä ihailuttaa asiakkaalla näköalaa*
 realtor admire-CAUS-3SG customer-ADE panorama-PART
 'The realtor lets the customer admire the panorama'
- (6) *Ovimies jonotutti ihmisiä ravintolaan*
 doorkeeper queue-CAUS-PAST-3SG people-PART restaurant-ILL
 'The doorman had people queue for the restaurant'

In addition, as we will see in section 5, these verbs are also able to occur in different patterns and the main arguments do not have to refer to human active participants. This study aims to an inclusion of these alterations; therefore, I refer to the causatives in question with the broader term *Causatives of Social Dominance* (hereafter *the CSDs*). The expressions of social influence describe situations that typically involve a human actor acting as a result of social interaction, appearing as pressure, an order, an instruction, manipulation, an effect of authority etc. The alternative approach to the transitivity-based theories, **the prototype-constructional**

⁶ For a more detailed discussion of the criteria defining the curative causatives, see Paulsen 2011.

view will be discussed in sections 4–5. Before that, I will briefly introduce the technology and theoretical basis of the analysis.

3. Conceptual semantics

3.1 The form of conceptual structure

The theoretical and methodological framework of this study is conceptual semantics, based especially on the work of Jackendoff (1983; 1990; 1997; 2007 etc.) and Nikanne (1990; 1997; 2005; 2006; 2008), also developed in Pörn 2004; 2008, Paulsen 2011 and Petrova 2011. Conceptual semantics strives for a comprehensive account of the knowledge we have about syntax and lexicon with the psychological reality of linguistic information (see Jackendoff 1983 : 11–18 about the grammatical and cognitive constraints of linguistic theory). As an extension of the generative grammar way of thinking, conceptual semantics theory claims that in accordance with syntax and phonology, linguistic meaning is also (cognitively) organized. A significant difference to the generative grammar approach to the relation between the linguistic form and meaning is that in conceptual semantics, the representations are not seen as derived from each other (e.g. the semantic representation is not derived from syntax by transformations) but as independent levels with their own primitives and principles of combination.

Semantics is in conceptual semantics treated on the level of *conceptual structure*, a representation in which linguistic information is organized and compiled with cognitive faculties as for instance dimensionality, spatial language, body representation and also social reasoning (see Jackendoff 1983 : 16–18; 2003 : 123). Each constituent of a sentence belongs to one of the major ontological conceptual categories — Events, States, Places, Paths, Time, Direction, etc. (Jackendoff 1990 : 22). The next step from ontological categories towards a well-formed conceptual counterpart of a sentence is the definition of the structure of conceptual constituents. According to Jackendoff (1990 : 23), each conceptual category is realised by the decomposition into a function-argument structure, and each argument is a conceptual constituent of some major category. The centre of the conceptual structure is the *thematic tier* architecture; the thematic tier expresses the situation structure involving notions such as change, causation, state, and consists of functions with their arguments. The causative situation can according to Jackendoff’s system generally be described as in (7); compare to the conceptual constituent structure of the sentence *Lisa threw the apple to Tom* in (8):

$$(7) \text{ [EVENT]} \rightarrow \left[\text{Event CAUSE} \left[\left\{ \begin{array}{c} \text{THING} \\ \text{EVENT} \end{array} \right\} \right], \text{ [EVENT]} \right]$$

$$(8) \text{ [Event CAUSE ([Thing LISA, [Event GO ([Thing APPLE], [Path TO ([Thing Tom])]])])}]}$$

In the *tier net* system of conceptual semantics developed by Nikanne (1990; 1995; 1997; 2002; 2005 etc.), the thematic tier is assumed to divide into three positional zones determining the order of the semantic functions (CAUSE, GO, TO, FROM etc.). The sequence of semantic functions is called *the function chain*, and its combination principle is based on the function

chain schema (see (9)). The number after the function *f* stands for the zone (one, two or three), the arrow indicates selection and the asterisk (*) after the symbol means that there can be none, one or several instances of the function in the *f*-chain. The *f*-chain schema states that the number of *f*1s and *f*3s may vary from none to several, but a well-formed *f*-chain must always include one and only one *f*2. Consequently, it can be said that zone 2 is the core zone of the conceptual structure (Nikanne 1990 and later).

(9) The function chain schema: $f3^* \rightarrow f2 \rightarrow f1^*$

The direction of the function chain is not arbitrary; it goes always from the causative zone towards the locative zone i.e. from left to right. Significantly, this principle also affects the thematic role hierarchy. The organisation of the thematic tier functions according to the zones and the division of the thematic roles is encapsulated to the following table in Nikanne (1997 : 83):

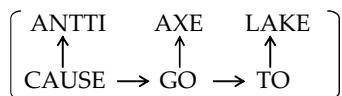
Table 1

Zones and semantic functions

ZONE 3	ZONE 2	ZONE 1
Causative zone	Thematic zone	Location zone
Non-monadic functions: CAUSE LET	Non-monadic functions: GO BE STAY	Monadic functions: AT, ON, IN, UNDER etc. (i.e. place functions)
Monadic functions: INCH	Monadic functions: EXT CONF MOVE	TO, TOWARD, FROM, VIA, AWAY FROM etc. (i.e. path functions)
Thematic role: agent	Thematic role: theme	Thematic role: reference object (location, goal, source, route, recipient etc.)

The thematic tier of a causative situation with functions and selected arguments is given in (10). The zone 3 function CAUSE selects the causer argument (ANTTI) and the zone 2 function GO. The function GO, expressing change, selects the theme (AXE) and the path function TO, that selects the goal (LAKE).

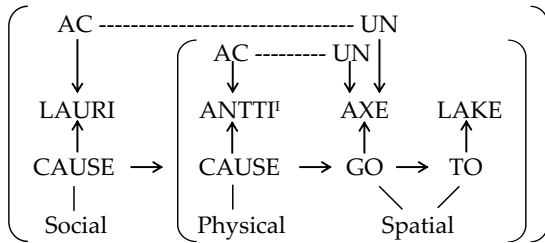
(10) *Antti heittää kirveen järveen*
 Antti throw-3SG axe-GEN lake-ILL
 'Antti throws the axe to the lake'



The semantic role theory of conceptual semantics involves an additional level of argument positions, the *action tier* (about the detailed

formation of the action tier, see Jackendoff 1990; Nikanne 1995). An argument that carries a semantic role in the thematic tier can thus get another role in the action tier, expressing dominance relations between the participants. The active participant in the event is the actor, who is dominating the passive argument of the action tier, the undergoer. The action tier operates with the functions AC (actor) and UN (undergoer); these roles are not significant in regard to the linking of conceptual arguments to syntax (see Nikanne 1995). An example of the CSD *heitättää* 'make s.o. throw' is analysed in (11):

- (11) *Lauri heittää Antilla kirveen järveen*
 Lauri throw-CAUS-3SG Antti-ADE axe-GEN lake-ILL
 'Lauri makes Antti throw the axe to the lake'



There are two causations in the conceptual structure of the example (11). It is characteristic to the CSDs that they encode two actor arguments and consequently have two action tier chains. Note that the argument LAURI marked in the conceptual structure with the superscript I is the lexically marked implicit agent, the adessive adjunct, also having a position in the argument structure⁷. Notice also the semantic field tier added to the description of (11), i.e. the cognitive background of the events in the situation. According to Nikanne (2002), the zones 1 and 2 share the same semantic field – the cognitive area of a linguistic expression is determined in zone 1, and the semantic properties of zone 1 spread to zone 2. The semantic fields of core zones, i.e. zones 1 and 2, are the *s p a t i a l*, *p o s s e s s i v e*, *t e m p o r a l*, *c i r c u m s t a n t i a l* and *c h a r a c t e r i z i n g* fields (see Jackendoff 1983 : 188–203). The semantic fields of zone 3 are not dependent on the semantic fields of the core zones, and the nature of causation can be described in *p h y s i c a l*, *s o c i a l* or *m a g i c* semantic fields (Nikanne 2002). From the point of view of the CSDs, the social semantic field is particularly relevant; in Paulsen 2011, this field is proposed to divide in further subfields (*c o m p e t i t i o n*, *p s y c h o s o c i a l*, *p s y c h o p h y s i c a l*).

3.2 The linking system

In addition to a description of the inner organization of linguistic structures, the essential question is how these systems are related to each other. As mentioned above, no level is in conceptual semantics assumed to be derived from each other; therefore, the central research question is the correspondence between the representations. According to Nikanne (2002; 2005; 2006), the

⁷ The linking of the adessive phrase to a zone 3 argument, i.e. to the agent is licensed by the *a d e s s i v e r u l e* (see Nikanne 1990 : 141). The implicit arguments are marked with the superscript index I (see e.g. Nikanne 1997 : 87).

modules lexicon, morphology and constructions are in this theory seen as linking devices, combining information from different levels and specifying a word's, morpheme's or construction's phonological form, syntactic category and conceptual characteristics. Whereas the representational modules (syntactic, phonological and conceptual modules) define well-formed representations, the mapping modules (lexicon, morphology and constructions) define the particular mappings between these representations that are allowed in the language in question. The definition of constructions within this approach is based on the distinction of different types of linking systems, regular and irregular linking. A construction-based linking relation specifies particular syntactic or conceptual configurations, lexical items or morphological categories; it also may refer to particular pragmatic information (Nikanne 2005). The overall architecture of grammar in conceptual semantic approach is illustrated as in Figure 1 (Nikanne 2005 : 196):

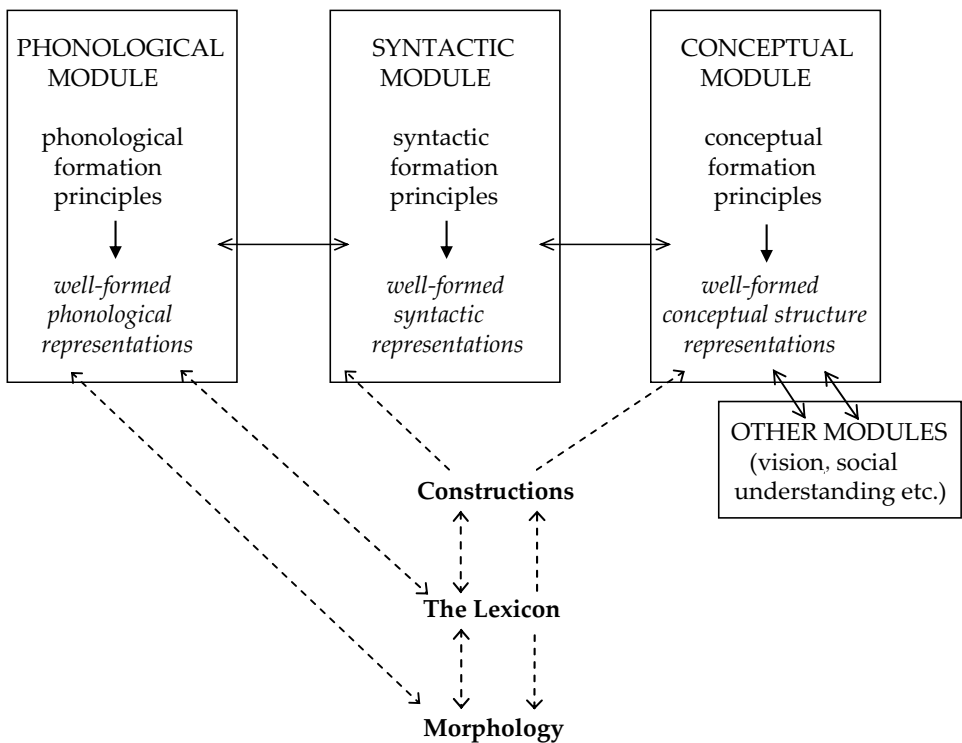


Figure 1. The organisation of grammar in conceptual semantics (Nikanne 2005 : 196).

An important remark is that in conceptual semantics, linking between representations is not assumed to be one-to-one. This is reflected for instance in the treatment of the theta-criterion: in contrast to the idea that there must be a one-to-one correspondence between noun phrases and thematic roles, also implicit arguments have a position in the argument structure (relevant in the description of the implicit adjunct in connection with the CSD's, as in the example (11) above) and a nominal may be assigned by several roles. An example of binding an argument with one syntactic position and multiple theta-roles is presented in (12), where the subject argument (Lisa) of the reflexive verb *pukeutua* 'to dress oneself' is at the same time the causer of the event and the theme

argument. The binder argument (LISA) is therefore marked with the superscript α and its bindee with a normal size α , following the notation of co-referential arguments with Greek letters proposed by Jackendoff (1990 : 63).

- (12) *Lisa pukeutuu iltapukuun*
 Lisa dress-REFL-3SG gardigan-ILL
 'Lisa dresses herself in the evening gown'
- | | | | |
|-------------------------------------|----------|---------|------|
| LISA ^{α} | α | EVENING | GOWN |
| ↑ | ↑ | ↑ | |
| CAUSE | → | GO | → |
| | | TO | → |
| | | | IN |

The main idea of syntactico-semantic linking is that the form of conceptual structure determines which conceptual argument is mapped to which syntactic argument. Nikanne (1997) argues that the thematic arguments are not directly linked to syntax but via an intermediate level that determines the subject argument and object argument of the sentence. This system is the *d i r e c t a r g u m e n t s y s t e m* (the DA-system), operating with two categories:

- DA1: first argument, 'logical subject'
 DA2: second argument, 'logical object'

Nikanne (1997) proposes the following principles determining the selection of syntactic arguments among the conceptual arguments:

- (13) a. Every thematic argument selected by the lexical function-chain is a potential DA.
 b. An implicit argument ([...]^I) cannot be a potential DA.
 c. The potential DAs are ordered from left to right (following the direction of the function chain, see (9) above, G.P.) as DA1 and DA2.

I will analyse the direct argument level of the example (11) presented above in (14). The linking of DAs follows the general principles: the causer argument LAURI is the leftmost argument in the thematic tier and is linked to DA1; the second causer is an implicit argument ANTTI^I and cannot assign the DA status. The argument next to the second causer, the theme AXE is selected as DA2. Consequently, the conceptual argument LAURI is linked to the subject argument in syntax and AXE to object argument.

- (14) *Lauri heittää Antilla kirveen järveen*
 Lauri throw-CAUS-3SG Antti-ADE axe-GEN lake-ILL
 'Lauri makes Antti throw the axe to the lake'
- | | | | |
|--------|--------------------|---------|------|
| DA1 | DA2 | | |
| ⋮ | ⋮ | | |
| LAURI | ANTTI ^I | AXE | LAKE |
| ↑ | ↑ | ↑ | ↑ |
| CAUSE | → | CAUSE | → |
| | | GO | → |
| Social | Physical | / \ | TO |
| | | Spatial | |

For an exacter description of the situating of the root verb arguments in the derivative structure, it is argued in Paulsen (2011), that the *m o r p h o l e x - i c a l o p e r a t o r s* presented in (15) are useful. The morphoroles are

needed in the lexical analysis of deverbal verbs as the lexical conceptual structure of these verbs consists of the structure of the root verb and the extra part of conceptual structure that comes with the derivational suffix.

- (15) SAD — Subject Argument of the Derived causative verb
 SAR — Subject Argument of the Root verb
 OAR — Object Argument of the Root verb
 ORadj — the Optional object or adjunct of the Root verb in the object place

As an illustration of this additional intermediate argument level, consider a sentence with the CSD *korjauttaa* 'make s.o. repair' in (16):

- (16) SAD SAR OAR
 | | |
Liisa korjauttaa Matilla pyörän
 Liisa repair-CAUS-3SG Matti-ADE bike-ACC
 'Liisa had Matti repair the bike'

The last operator in (15), the ORadj is an operator for non-typical DA2s. This is useful for instance in a separation of the lexical arguments from sporadic arguments, for instance in case of the adverbials in Finnish that are able to assign the object cases and even show the same case alternations of the object cases that verbal objects do. These adverbials of amount in object cases (Fin. 'objektin sijainen määrän adverbiali') typically express some kind of amount, like measure, duration, distance and frequency (see Vilkuna 1996 : 85; Hakulinen, Vilkuna, Korhonen, Koivisto, Heinonen, Alho 2004 : §972–§973). An inclusion of the non-typical objects to the analysis of the CSDs enables us also to account for the flexibility of the verbs regarding their behaviour as transitives or intransitives. As the example (17) shows, the adessive adjunct may also occur in connection with activity verbs as roots for the CSDs, in case the object position is filled:

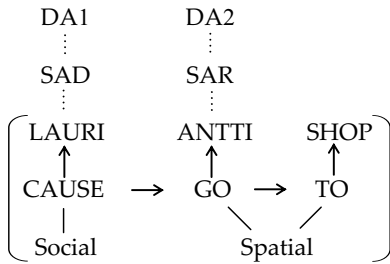
- (17) SAD SAR ORadj
 | | |
Liisa juokсутtaa Matilla tunnin
 Liisa run-CAUS-3SG Matti-ADE hour-ACC
 'Liisa had Matti run for an hour'

We can now add the morpholexical level to the conceptual structure and the direct argument level inserted to the example (14). Note that the DA2 is linked to the OAR, not to the SAR in (18):

- (18) *Lauri heittääh Antilla kirveen järveen*
 Lauri throw-CAUS-3SG Antti-ADE axe-GEN lake-ILL
 'Lauri makes Antti throw the axe to the lake'
- DA1 DA2
 ⋮ ⋮
 SAD SAR OAR
 ⋮ ⋮ ⋮
 LAURI ANTTI AXE LAKE
 ↑ ↑ ↑ ↑
 CAUSE → CAUSE → GO → TO
 | | | |
 Social Physical Spatial

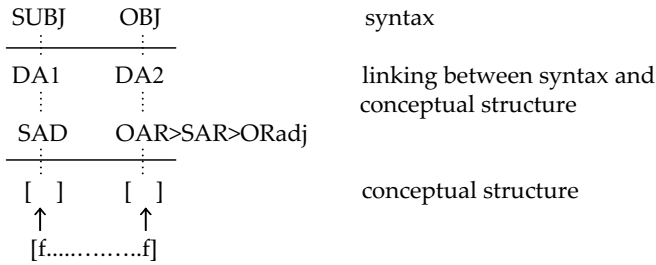
To a comparison, consider the linking relations of an example, where the SAR is linked to the DA2 position (not the OAR):

- (19) *Lauri marssittaa Antti kauppaan*
 Lauri march-CAUS-3SG Antti-ACC shop-ILL
 'Lauri makes Antti march to the shop'



The involvement of the intermediate linking level thus enables us to explicate the particular linking relationships of the root verb and the derivative in respect to the syntactic realisation of the conceptual arguments. The general (regular) linking principles of the CSDs are encapsulated in Paulsen (2011) as in (20). The SAD is linked to the leftmost thematic argument and thus selected as the DA1. There is a hierarchic relationship regarding the DA2 selection — if there is an OAR, it is licensed as the DA2; if no OAR is available, the SAR can be selected as the DA2. The ORadj is not a lexically determined argument, but it is also linked to syntax via the DA level and can assign the position of DA2.

- (20) The linking of direct arguments and morphoroles of the CSDs



4. Prototype structures of causative derivatives

The causative relations are in the tiernet approach, and in conceptual semantics in general, analysed as a relationship between a causer (an animate or inanimate thing or an event) or a causing event and a caused event. The internal structure of causation is formalised in Nikanne 2005 as in (21). The general structure (21) reflects the idea of causing the root word's semantic content; aspects like activity or volitionality related to the main arguments, number of causations or the semantic fields are not specialized.

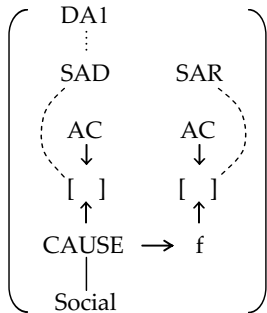
- (21) CAUSER (thematic argument)
 ↑
 f3 → SITUATION (f-chain)

As argued in section 3.2 above, a construction displays an exceptional linking relation between the subsystem of a representation in respect of default (rule-based) linking. However, before specifying an aberrant structure, the general principle it diverges from should be defined. Since the basis for the analysis of causative constructions following below is the prototype structures of the CSDs and their *r e g u l a r* linking configurations, I will give a brief outline of the topic in this section.

In Paulsen 2011, the prototype structures for the Finnish causative verbs encoding social causation are developed, suggesting that the systematic similarities between these verbs can be captured through the prototype patterns they occur in. The notion of prototype stands in this analysis for a complex of combinatorial primitives — it is a template of reduced structure behind the derivatives, instantiating the shared features of independent lexical units⁸. The description of CSD-prototypes involves the conceptual structure as well as the linking correspondence between morphosyntax and semantics. The central elements are social causation, activity of the direct (second) agent and the morpholexical linking, especially the linking of the SAR.

According to Paulsen (2011 : 169), the shared part of the CSD-prototype structures is formalised as *t h e c o r e p r o t o t y p e* in (22). Note that the simple *f* standing for an *f*3 or *f*2 reflects the possibility of the CSDs to have one or two causations in their conceptual structure.

(22) Core prototype of CSDs:

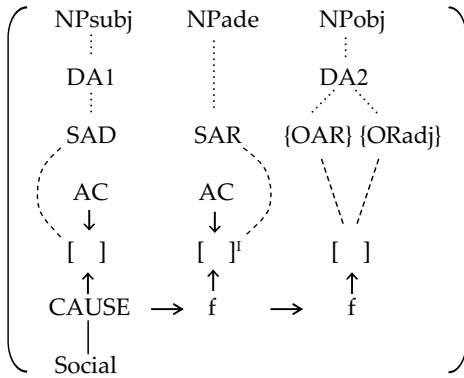


The core prototype does not specify the syntactic status of the SAR; the SAD as the leftmost argument is the DA1. This prototype is divided into two general prototype structures, according to the linking realisations of the SAR argument — as the crucial feature, the SAR may appear in syntax as the adessive adjunct (this is the characteristic feature of the prototype 1) or to the object position (as in the prototype 2). The number of causations in prototype structure analyses is not specified by marking the function with a general *f*, indicating that both prototypes are able to have single and double causative thematic tiers. The linguistic examples (23a–b) and (24a–b) illustrate the respective structures. Notice that the curled brackets { } around the morphoroles OAR and ORadj in (23) stand for the mutu-

⁸ This type of prototype represents the abstract type of prototype, *i n s t a n t i a t i n g* the prototype structure of salient features. There is also another employment of the notion of prototype, that of the central (typical) member or cluster of central members of a category. About the two different prototype categorizations, see Taylor 1989 : 54–59.

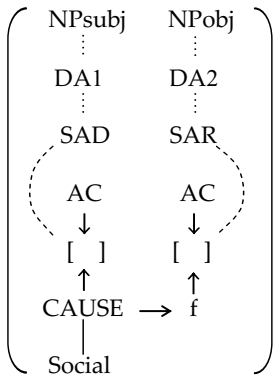
ally exclusive relation to the different positions. The prototypes are thus not bound to the transitivity-based criteria.

(23) Adessive adjunct-actor prototype (prototype 1):



- a. *Matti ompeluttaa Liisalla puvun*
 Matti sew-CAUS-3SG Liisa-ADE dress-ACC
 'Matti has Liisa sew the dress'
- b. *Matti juoksuttaa Liisalla kierroksen*
 Matti run-CAUS-3SG Liisa-ADE lap-ACC
 'Matti has Liisa run a lap'

(24) Objective actor prototype (prototype 2):



- a. *Matti ompeluttaa Liisaa*⁹
 Matti sew-CAUS-3SG Liisa-PART
 'Matti has Liisa sew'
- b. *Matti juoksuttaa Liisaa*
 Matti run-CAUS-3SG Liisa-PART
 'Matti has Liisa run'

The results of the general syntactico-conceptual linking analysis of the causatives in Paulsen 2011 : 177 suggest that the CSD-prototypes 1 and 2

⁹ The double causative CSD encoding the SAR as the actor (and not the object of activity, in which case *Liisaa* is interpreted as the OAR, as in 'Matti has s.o. sew Liisa') is one of the possible interpretations regarding this verb, as the results of an acceptability rating test and a syntactic test in Paulsen 2011 show. The tests affirm the tight connection of these verbs to context.

do not function as dividers of verbs into different classes. Neither is the number of causations fixed by the prototypes. The linking characteristic of CSDs shows a considerable flexibility capability in order to adjust the syntactic alternations. Principally, the CSD verbs belonging to either transitive or intransitive verbs according to their root verb properties are able to adapt both prototypes. Consider an example of a CSD with flexible linking pattern; in the example (25a), the verb *leikittää* 'make s.o. play' adopts the prototype 1 linking pattern and in (25b), the prototype 2 linking, respectively:

- (25) a. *Äiti leikittää lapsilla polttopalloa*
 mother play-CAUS-3SG children-ADE rounders-PART
 'Mother makes children play rounders'
- b. *Äiti leikittää lapsia*
 mother play-CAUS-3SG children-PART
 'Mother makes children play'

Thus, instead of a treatment of the causative derivatives as more or less static verb group and the adessive actor-adjunct pattern as a lexical property of CSDs, the adessive adjunct structure can be seen as one of the possible patterns for these verbs. In the next sections, we will see some further structural and semantic variations of the causative verbs.

5. Constructions

In general, the term *construction* is used to refer to a structure in general or to specific configurations. In this study, constructions are defined as an idiosyncratic linking relationship on the morphological, syntactic or conceptual level. This definition is in accordance with the assumption of conceptual semantics of regular (default) and irregular (construction-specific) syntactico-semantic mappings¹⁰ (Nikanne 2005). The basic idea is that in order to an exception to exist, there have to be general productive rules. Taken the general syntactic behavior of a sentence (like *John reads a book*), there is no need to refer to special semantic or morphological information. A construction, instead, licenses specific formations and linking relations, configurations that do not comply with the core rules in some aspects.

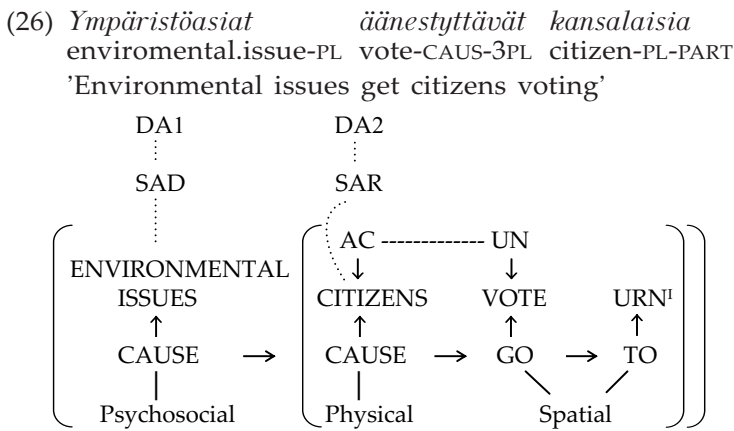
The prototype structures defined in the previous section describe the general shared attributes of the *ttA*-causatives regarding the argument structure and linking connections – these represent the main productive rules of the CSDs. The analysis of structures specifying particular syntactic or conceptual information in section 5 is based on the comparison to the prototypes. Basically, there are constructions that have the same syntax as

¹⁰ This viewpoint on constructions is thus compatible with the Construction Grammar framework (Fillmore 1988; Fillmore, Kay 1999; Goldberg 1995; Östman, Fried 2004) in that both theories acknowledge the idea that there exist grammatical phenomena other than the purely lexical entries added to sentences. There are differences in assumed weight of constructions in the language overall; for instance Croft (2001: 362) treats constructions as basic units of grammar (also Goldberg (2006) has a broad view on what is regarded as constructions).

the prototype structures defined above but different semantics and also constructions that display idiosyncratic syntactic or morpholexical behavior. In the discussion below, I will concentrate on the constructions that affect the argument structure and linking configuration of the causative verbs. The social implications affecting the semantic interpretation of the CSDs will not be included the discussion here (about pragmatic aspects related to the asymmetric relations of social dominance, see Paulsen 2011).

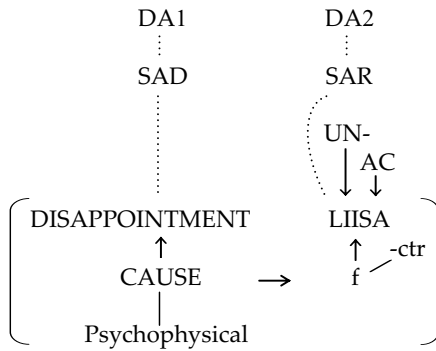
5.1 Structures with non-human SAD: the abstract causer construction

In the prototypical case, the SAD refers to a human participant that also is the actor of the higher action tier chain. However, the CSDs can also take a non-human SAD but otherwise match the core prototype structure (compare to (22)). Consider the example (26) with a phenomenon as the causer argument. Note that there is only one action tier chain present, because the causer argument, the SAD cannot be said to be an active participant in this situation. The semantic field of the first causation is *psychosocial*, denoting an affection of human behavior via a social event, discourse or norms and values of a society (about the subfields of the social causation, see Paulsen 2011 : 310). We can call the construction below *the abstract causer construction*.



A slightly different example with the verb *syötättää* 'make s.o. eat' is presented in (27). Also here the causer argument, the SAD is not an active human participant but a psychological phenomenon, a stimulus. The semantic field of the first causation is *psychophysical*, reflecting the complex mental-psychological influencing of (27), generally concerning the social desires, fears and psychological states. The conceptual structure of (27) involves a subrole of the undergoer, *malefactive* (marked with the notation UN-, see Nikanne 2002 : 2005), because the influence of the stimulus has a negative effect on the SAR (LIISA). This is also related to the control loss, in (27) marked with the semantic feature *-ctr* and indicating that the only human actor of this proposition, supposedly possessing the agentive properties, does not have control over its own activity (more about this construction, see Paulsen 2011).

- (27) *Pettymys* *syötättää* *Liisaa*
 disappointment eat-CAUS-CAUS-3SG Liisa-PART
 'Disappointment makes Liisa eat'



5.2 Reverse argument structure and causative constructions that do not raise the valence of the root verb

Adding a causative suffix to a word expectedly yields an agentive transitive verb, in our terminology, adds an actor-SAD to the root verb arguments. In this section, I will discuss causative constructions that do not involve an addition of the SAD argument but conversely, are valency-retaining or valency-reducing. The valency-retaining pattern is discussed in section 5.2.1 by example of the verb *leikittää* 'make s.o. play'. The section 5.2.2 deals with the emotive causative construction and 5.2.3 examples that associate with the middle characteristics as defined by Condoravdi (1989) and Lekakou (2005). Common to the constructions discussed below is that the OAR, the understood object is mapped to the subject position (not the SAD, as the general linking system of causative verbs posits).

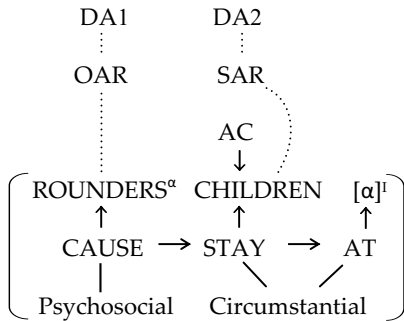
The general valency-reducing constructions are for instance impersonal and passives. It is noteworthy that the *ttA*-element used for causativisation in Finnic languages, is argued to have historically common root with the passive *tA*- and *ttA*-suffixes (see Lehtinen 1984; Hakulinen 1968). A common feature of Finnish causative and passive is that both demote the external argument or agent to an implicit agent.

5.2.1 Valency-retaining constructions

In section 4 we saw that the verb *leikittää* 'make s.o. play' adapts both prototype 1 and prototype 2 structures (see the examples 25a–b). A further argument structure variation of the verb *leikittää* 'make play' is presented in (28). The essential properties of (28) are related to the linking configuration: the OAR of this derivative is here linked to the DA1 position and the SAR is the DA2; no SAD argument is added to this structure. Note also that in (28), the NP *polttopallo* 'rounders' has two theta-roles, coindexed with α (recall the discussion about binding conceptual arguments in section 3.2). I mark the semantic field of causation as psychosocial, because it is related to the social life, even though the causer referent is not human. The zone 2 function STAY indicates staying at a (spatial or

abstract) place, here understood as the (circumstantial) situation of playing rounders.

- (28) *Polttopallo leikittää lapsia*
 rounders play-CAUS-3SG children-PART
 'Rounders makes children play'



We can assure the status of the argument of CAUSE as the OAR by combining it in a regular transitive sentence with the root verb of *leikittää*, i.e. *leikkiä* 'play' — the argument *polttopallo* 'rounders' is expressed as the partitive object in (29):

- (29) *Lapset leikkivät polttopalloa*
 children play-3SG rounders-PART
 'Children play rounders'

This is a difference in comparison to the examples discussed in previous section where the non-human argument of the first causation was defined as the SAD. When trying the causer argument in a root verb sentence, it takes a form of a causal adjunct as a subordinated structure (because of the concern about the environmental issues, the citizens are voting); the objective position is not grammatical. The test of the examples 26 and 27 is presented in (30a–b) and (31a–b), respectively:

- (30) a. *?Ihmiset äänestävät ympäristöasioita*
 people vote-3PL environment.issues
 b. *Ihmiset äänestävät, koska ympäristöasiat huolestuttavat heitä*
 'People vote, because the environmental issues worry them'
- (31) a. **Liisa syö pettymystä*
 'Liisa eats disappointment'
 b. *Liisa syö, koska hän on pettynyt*
 'Liisa eats, because she is disappointed'

5.2.2 Valency-reducing constructions. The emotive causative construction

In Finnish, the causative morpheme *ttA* is also a sign of psychological verbs, the so-called psych-verbs. The characteristic feature of these verbs is involvement of the semantic role *experiencer*, encoding the (typically animate) participant that perceives, thinks or feels something; the

expressed situation affects the experiencer's consciousness. A second role connected with the psych-verbs is *stimulus*, typically referred to as the entity the experiencer is sentient of; stimulus can be encoded as the cause of the mental state of experiencer¹¹ (about the semantic roles of emotive verbs, see e.g. Dowty 1991). Syntactically, these verbs occur in a special argument structure characterised by the (O)V(S) word order: the experiencer of the mental state is syntactically not expressed as the subject but as the object; if there is an element encoding a cause for the mental state, it is syntactically marked as subject (Siironen 2001; Pörn 2004; 2008). A conceptual semantics description of this phenomenon is presented in an example with a causative emotion verb in (32) and its underived variant in (33):

- (32) *Koira pelottaa tyttöä*
 dog-NOM be.afraid-CAUS-3SG girl-PART
 'The girl is frightened of the dog'
- | | | |
|---------|--------|---------------------|
| DA1 | DA2 | |
| ⋮ | ⋮ | |
| OAR | SAR | |
| ⋮ | ⋮ | |
| DOG | GIRL | [FEAR] ¹ |
| ↑ | ↑ | ↑ |
| CAUSE → | STAY → | AT |

- (33) *Tyttö pelkää koiraa*
 girl-NOM be.afraid-3SG dog-PART
 'The girl is afraid of the dog'

There are further differences between emotive causative verbs in Finnish depending on their lexical conceptual structure — they can be optionally or compulsory causative (Pörn 2004; 2008). This means that the mental state is not necessarily having a causal influence and the stimulus is not encoded. Even the verb *syötättyttää* 'make s.o. eat' is able to occur in a pattern lacking the cause, despite it is not a typical emotion verb but denotes in this proposition rather a physiological state. Note that in example (34), the experiencer is not (necessarily) an active participant, as we do not know if the activity denoted by the root verb is actually happening. A similar instance is (35), an authentic example from "Aku Ankka" (Donald Duck) 35/2010 of the verb *kiipeilyttää* [climb-CAUS], showing that even a causative derived from a motion verb can occur in the emotive causative construction. Notice that neither the experiencer nor the causer-stimulus is expressed in (35), which is possible in connection to the Finnish emotive causatives.

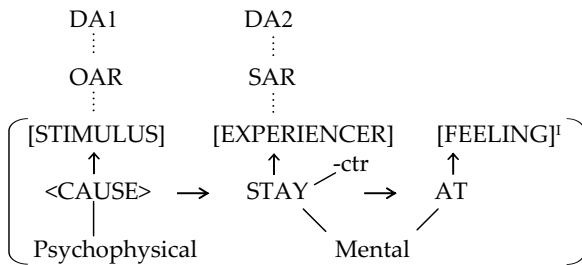
- (34) *Minua syötättyttää*
 I-PART eat-CAUS-CAUS-3SG
 'I feel like eating'

¹¹ Pörn (2004) argues that the Finnish causative emotion verbs express events, i.e. dynamic situations, and not states. Therefore, she analyses the conceptual structure of the emotive causative frame using the event-function STAY instead of the state-function BE. Also P. Leino (1986 : 119) suggests that emotions are conceptualized in the semantic system of Finnish as activities rather than states.

- (35) *Kun seuraavan kerran kiipeilyttää, suosittelen Mount Everestiä tai lasten leikkiuistoa*
 'Next time when [you] feel like climbing, I recommend Mount Everest or an adventure playground'

We can thus generalize the emotive causative construction with the morpholexical and syntactic linking system as in (36). The important aspect is that there is no SAD in this structure. In contrast to the previous structures, I do not mark the action tier in (36), even though the mental activity is emphasised. The angled brackets around the CAUSE-function denote optionality of the zone 3 function CAUSE in this structure. I add the psychophysical semantic field of causation and the mental semantic field of the state of the experiencer to the analysis.

- (36) The emotive causative construction and its linking configuration



5.2.3 Causatives — a candidate for a Finnish middle?

In addition to the causative constructions presented above, the causative verbs occur in semantically different one-valenced sentence type that is not an ordinary intransitive. Consider the examples (37–39):

- (37) *Polttopallo leikittää* (kuten aina)
 rounders game-CAUS-3SG
 'Rounders makes [X] play/plays (as ever)'
- (38) *Olut syötättää* (vietävästi)
 beer eat-CAUS-CAUS-3SG
 'The beer makes [X] eat (too much)'
- (39) *Ympäristöasiat äänestyttävät* (vilkkaasti)
 environment.issue-PL vote-CAUS-3PL
 'The environment issues get [X] to vote (lively)'

Besides the one-valenced pattern, these examples have in common that the SAR, referring to humans in general, is not syntactically expressed although the implicit agent (the player, eater and voter) is semantically present. The position of subject is filled by the OAR (or an abstract SAD as in (39)). Another characteristic feature is that the effect of the causer is understood in a general nature. These features bear resemblance to the semantic specification of the so-called *m i d d l e c o n s t r u c t i o n*; consider the example (40) of an English middle (e.g. Van Oosten 1977; Hoekstra, Roberts 1993). Note that in English, the middle construction requires the adverbial component, which in the Finnish examples is not compulsory.

(40) *This book sells well*

Middle is not found to have a consistent syntactic structure cross-linguistically, and as Condoravdi (1989) argues, it is best characterized as a semantic category. Lekakou (2005) concurs with this idea and encapsulates the cross-linguistically essential properties of the middle interpretation into three conditions:

- a. The argument that would normally be mapped to the object position ('the understood object' or 'the underlying object', in present terminology, the OAR argument) is the topic.
- b. The agent (the SAR in our terms) receives an arbitrary interpretation.
- c. The reading is non-eventive; middles do not make reference to an actual event having taken place, they rather report a property of the grammatical subject. The otherwise eventive verb becomes a derived stative and, more precisely, receives a generic interpretation.

Regarding their form, middles are generally argued to make use of reflexives (e.g. Kemmer 1993) or passive structures (Hoekstra, Roberts 1993). For instance, Vihman (2003) argues that in Estonian, middle appears with verb derivation morphology contrasting with the intransitive and transitive poles of the Hopper and Thompson's (1980) transitivity continuum. The example (41) of Estonian middle marked with the (generally defined as reflexive) *u*-suffix is from Vihman 2003 : 626. Klingvall (2006) proposes that in Swedish, the passive constructions correspond to the semantic definition of middle (the example (42) is from Klingvall 2006 : 75):

(41) *Pärnu kuubastub!*

Pärnu Cubanizes.3SG.MID

'Pärnu is becoming Cubanized / is Cubanizing itself!'

(42) *Den här texten är svåröversatt*

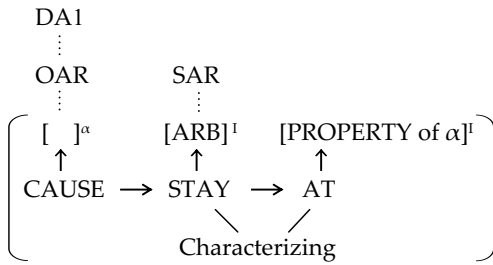
this text-DEF is hard.translated-PAST-PTS

'This text translates with difficulty / is difficult to translate'

In relation to genericity, Lekakou (2005 : 68) argues that the middle construction expresses an ascription of a dispositional property or quality to the OAR enabling the arbitrary agent to act on it in the way specified by the meaning of the verb together with the adverb's meaning.

The conceptual structure together with correspondence to the morpholexical and direct argument system of the middle construction can be analysed as in (43). The characteristic properties of this structure are the following: the causer argument is linked to the OAR and assigns the DA1 position; the implicit agent is an arbitrary (generic) participant, linked to the SAR. The zone 2 function BE selecting the arbitrary argument describes the continuous effect of the OAR to the SAR, and the characterising semantic field (this field expresses a feature or typifies something, see Jackendoff 1990 : 116–122) describes the constant property of the binded argument α . Notice that whereas the function STAY expresses a temporally related situation, the BE-function does not involve the notion of time; the existence of the notion of time can be seen as the distinguishing feature between states and events in general (Nikanne 1990; Jackendoff 1990).

(43) The middle construction



The relation of causatives to the middle construction awakes several questions that are not possible to answer within the limits of this paper. Which causative verbs in Finnish occur in this construction? Exactly what kind of related constructions are there? Are there other forms in Finnish that adopt this pattern? To a start, consider below the examples of a denominal causative *pelittää* [game-CAUS] with the meaning 'function, go around' (44), a lexicalized "middle" verb *jätättää* 'be slow' (45). It is remarkable that it is not possible to adjust the causative verb *luetuttaa* [read-CAUS-CAUS] to a reverse argument structure construction (see 46a). The root verb *lukea* 'read' derived to a reflexive (46b) does not correspond to the middle construction either; in connection with this verb, it is the 1st participle of passive form that gives the (modal) connotation of 'is readable' (46c).

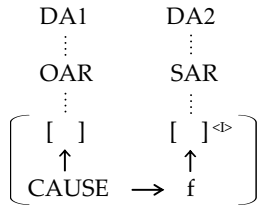
(44) *Systeemi pelittää* (kiitettävästi)
 system game-CAUS-3SG
 'The system goes around (quite well)'

(45) *Kello jätättää*
 clock leave-CAUS-3SG
 'The clock is slow'

- (46) a. ?*Kirja luetuttaa helposti.*
 book read-CAUS-CAUS-3SG easily
- b. ?*Kirja lukeutuu helposti.*
 book read-REFL-3SG easily
- c. *Kirja on helposti luettavissa.*
 book be-3SG easily read-PASS-1.PTS-PL-INE
 'The book reads easily/is easy to read'

After a presentation of the reverse argument structure constructions of the causative derivatives, it is time for a more general overview. How are the constructions related to each other? Is there a separate prototype template in the background of the (subjective) OAR structures, i.e. the reverse argument structures discussed in 5.2.1–5.2.3? The reverse argument structure constructions display an idiosyncratic pattern in respect to the general productive rules of causativisation, and the number of verbs adjusting to these constructions is clearly limited. Therefore, the core structure of these patterns is seen here as a constructional structure. The general formation of the linking system of these structures can be analysed as in (47).

(47) The linking system of the reverse argument structure constructions of the causatives



7. Summary

The examination of structural and semantic network of the Finnish (*U*)*ttA*-causatives in this article can be seen as a step towards a unification of the general productive causative rules and causative constructions into a comprehensive account. The general causative verb behaviour is described by two basic prototypes, the objective causative prototype and the adessive adjunct prototype. Additionally, the Finnish causative derivatives demonstrate a substantial ability to occur in constructions that do not adhere to the general valency-raising function of causativisation. The causative constructions discussed in this article — the abstract causer construction, the emotive causative construction and the middle construction — display idiosyncratic linking configurations in relation to the defined prototype structures. However, the outline in this article is not complete — all possible constructions and functions of the Finnish causative derivation are not even mentioned here. Additionally, the relation of causatives to the valence-reducing constructions as middle and the reverse argument structures in general needs a more elaborate analysis than the limits of this paper aloud.

The choice of the conceptual semantics methodology as the basis of the analysis has as purpose to demonstrate that an explicit formal description of the conceptual structure and the linking system of verbs can be used to generalise the salient features of both prototype structures and constructions of complex derivative verbs. The analysis of the mapping arrangement reveals the relations between both regular and irregular phenomena in connection with the causative verbs. The morpholexical linking system proved to be particularly useful for the distinction of the underlying mapping relationships of the derivative verbs.

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Abbreviations and symbols

<> — the angled brackets stand for the option nature of a notion; { } — the curled brackets stand for the mutually exclusive relation to different positions in the conceptual structure; AC — actor; ACC — accusative; ADE — adessive; CAUS —

causative; **CSD** — Causatives of Social Dominance; **DA1** — logical subject; **DA2** — logical object; **DEF** — definite article; **ILL** — illative; **INE** — inessive; **MID** — middle; **OAR** — object argument of root verb; **OARadj** — optional object or adjunct of root verb in object place; **PAST** — past tense; **PART** — partitive; **PL** — plural; **PRES** — present tense; **PTS** — participle; **PX** — possessive suffix; **REFL** — reflexive; **SAD** — Subject argument of the derived causative verb; **SAR** — Subject argument of the root verb; **SG** — singular; **UN** — undergoer.

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ГЕДА ПАУЛСЕН (Таллинн)

О ДИНАМИКЕ КАУЗАТИВНОЙ ДЕРИВАЦИИ В ФИНСКОМ ЯЗЫКЕ. ПРОТОТИПЫ И КОНСТРУКЦИИ

В статье рассматриваются связанные с каузативной системой словообразования лексические процессы в финском языке на примере каузативных производных глаголов, образованных с помощью суффиксов (*U*)*ttA*. При описании принципов действия глагольной деривационной системы в качестве альтернативного подхода предлагается сетевая модель прототипических и конструкционных структур. Прототипические структуры, послужившие основой для анализа, устанавливались по главным признакам каузативных производных, в центре внимания — определение концептуальной структуры и правил компоновки (линковки). Путем соотнесения с прототипическими структурами можно установить каузативные конструкции с идиосинкразическими свойствами, которые встречаются в связи с глаголами с суффиксами (*U*)*ttA*. Здесь анализируются такие конструкции, основанные на изменении структуры аргумента, как выражающие чувство каузативная или медиальная конструкции.