The Representation of Diatheses in the Valency Lexicon of Czech Verbs⋆

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Abstract. In the present paper, we deal with diatheses in Czech from a lexicographic point of view. We propose a method of their description in the valency lexicon of Czech verbs VALLEX. We distinguish grammatical and semantic diatheses as two typologically different changes in verbal valency structure. In case of grammatical diatheses, these changes are regular enough to be described by formal syntactic rules. In contrast, the changes in valency structure of verbs associated with semantic diatheses vary even within one type of diathesis. Thus for the latter type, we propose to set separate valency frames corresponding to their members and to capture the changes in verbal valency structure by lexical rules based on an adequate lexical-semantic representation of verb meaning.

Keywords: valency lexicon, grammatical and semantic diatheses, changes in valency structure of verbs, lexical-semantic representation of verbs.

1   Introduction

Valency behavior of verbs is so heterogenous that it cannot be described by general syntactic rules. Instead, it must be captured in the form of lexical entries separately for each verb. Prototypically, a single meaning of a verb corresponds to a single valency frame. However, in many cases, semantically close uses of verbs can be syntactically structured in different ways. See the following examples:

(1)   a. *Peter smeared butter on bread.* – b. *Peter smeared bread with butter.*

(2)   a. *Butter was smeared on bread (by Peter).* – b. *Bread was smeared with butter (by Peter).*

The uses of the verb *to smear* illustrated by the examples in (1) and (2) correspond to four different syntactic structures despite their obvious semantic similarity. However, listing separate valency frames for each of them makes the lexicon bigger than expected. Moreover, such a massive polysemy of verbs seems

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to be contraintuitive. Thus we propose to describe the changes in the valency structure of semantically related uses of verbs by means of formal syntactic and lexical rules.

First, let us focus on the pairs in (1a)-(2a) and (1b)-(2b), respectively. The changes in the valency structure of the verb *to smear* are expressed by grammatical means; we refer to the relation between these uses of the verb as a grammatical diathesis. In contrast, the changes in the valency structure of the verb *to smear* in pairs (1a)-(1b) and (2a)-(2b), respectively, are expressed by lexical-semantic means. We refer to the relation between such uses of verbs as a semantic diathesis.

The representation of grammatical and semantic diatheses is proposed here for the valency lexicon VALLEX, which aims at the explicit description of valency behavior of Czech verbs.[1] This lexicon takes the Functional Generative Description (henceforth FGD) as its theoretical background [7]. In FGD, valency is related primarily to the tectogrammatical layer, i.e., the layer of linguistically structured meaning. The valency characteristics are encoded in a form of a valency frame, which is modeled as a sequence of frame slots corresponding to valency complementations of a verb (labeled by (rather coarse-grained) tectogrammatical roles as 'Actor', 'Patient', 'Effect', 'Direction', etc. [5]). In addition, possible morphemic forms are specified for each valency complementation. For our purposes, we enhance FGD (i) with the concept of lexical-conceptual structures [6], representing lexical-semantic properties of verbs, and (ii) with the open set of labels for situational participants (as 'Agent', 'Recipient', 'Filler', 'Surface', etc.).

The paper is structured as follows: In Section 2, we define the notions situation and perspective, which play a crucial role in the characteristics of diatheses. Then on the basis of the correspondence between situational participants, valency complementations and surface syntactic positions, we distinguish two types of diatheses: grammatical diatheses (Section 3) and semantic diatheses (Section 4). In Section 3.1 and 4.1, the representation of grammatical and semantic diatheses in the valency lexicon is proposed, respectively. Conclusion and an outlook for future work is presented in Section 5.

2   Situation vs. Perspective

The members of both types of diatheses are usually characterized as constructions denoting the same situation, though, each time from a different perspective. Thus the concepts situation and perspective play a key role in the characteristics of diatheses.

First, let us focus on the concept of a **situation**. The term does not refer to a real-life situation, it is rather a situation modeled by language, i.e., a linguistic situation. The linguistic situation related to an event represents a set of facts and entities, i.e., participants, linked in a unified structure. Thus an analysis of a particular situation denoted by the verb must involve not only the specification

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of the relevant number of its participants but also the description of the relations between them, see e.g. [3]. For example, the situation portrayed by the uses of the verb *to smear* in examples (1) and (2) consists of three participants labeled as 'Agent', 'Cover' and 'Surface', and it may be informally described as 'an Agent covers a Surface of an object with a Cover'. We refer to this part of the verbal meaning as a **situational meaning** and to its components as **situational participants**. Situational meaning represents an abstract model of situation which has not yet been linguistically structured.

Sentences expressing the same situational meaning can be usually structured in several ways (i.e., different situational participants can occupy the syntactically prominent positions of subject and direct object). This results in different **perspectives** from which the situation is viewed, see e.g. [2]. In case of the verb *to smear*, the situation can be viewed from the perspective of 'Agent', (i.e., *Peter*), as in (1a) and (1b), from the perspective of 'Cover' (i.e., *butter*), as in (2a), or from the perspective of 'Surface' (i.e., *bread*), as in (2b). The different perspectives in these sentences are manifested by grammatical and lexical-semantic means.

As a result, we distinguish two typologically different changes in the verbal valency structure. **Grammatical diatheses** refer to the relation between the uses of verbs characterized by the differences in the mapping of valency complementations and surface syntactic positions, as in (1a)-(2a) and (1b)-(2b). These differences are based on grammatical means (Section 3). In contrast, **semantic diatheses** refer to the relation between the uses of verbs characteristic of the different correspondence between situational participants and valency complementations, as in (1a)-(1b) and (2a)-(2b). These differences are expressed by lexical-semantic means, i.e., by the change of lexical unit (Section 4).

3   Grammatical Diatheses

Sentences related by a grammatical diathesis express the same situational meaning; however, they are characterized by different perspective which results from the changes in the mapping between valency complementations and surface syntactic positions. Further, within this type, the linking of situational participants and valency complementations remains unchanged. This can be illustrated by the pairs of examples (1a)-(2a) and (1b)-(2b), the first one repeated here as (3).

(3)   a. *Peter smeared butter on bread.* – b. *Butter was smeared on bread (by Peter).*

Grammatical diatheses are connected with the morphological category of verbal voice, see esp. [4]. Based on the unmarked/marked form of the verb (with respect to the category of voice), a member of a grammatical diathesis is considered to be unmarked or marked, respectively. Grammatical diatheses are not restricted to well-delimited semantic classes of verbs. They rather relate to a great number of verbs with similar syntactic properties regardless of their semantic class membership. The members of grammatical diatheses satisfy the following criteria:

1. The use of the marked member of grammatical diatheses is conditioned by the grammatical meaning of the verb (represented by a specific verbal grammateme in FGD [4]). In Czech, verbal forms of these marked members typically consist either of auxiliaries and non-finite form of lexical verb or they have a reflexive form.
2. The marked member of grammatical diatheses is prototypically connected with the shift of some of situational participants from the prominent surface syntactic position of subject to a less prominent syntactic position.
3. The correspondence between situational participants and valency complementations remains unchanged; thus the set of situational participants is directly encoded in the valency frame by a sequence of valency complementations. It implies that the number of valency complementations and their type are preserved and the changes in the valency frame are limited only to the changes in morphemic forms of the valency complementations.

The asymmetry between the mapping of the situational participants and the surface syntactic positions corresponding to the verb *to smear* in example (3) is illustrated in Figure 1.
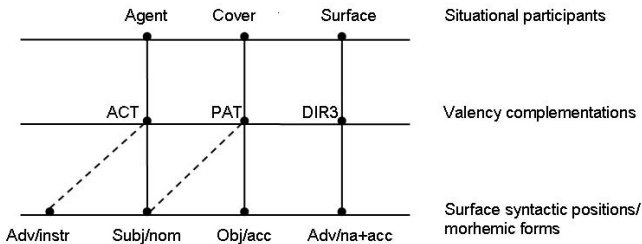

Fig. 1. The changes in the mapping of the valency complementations and the syntactic positions of the verb *to smear* associated with the passive grammatical diathesis

3.1   Representation of Grammatical Diatheses

In this section, we propose the representation of grammatical diatheses in the valency lexicon VALLEX. The changes in valency structure associated with grammatical diatheses are regular enough to be described by general syntactic rules; these rules are stored in the **grammar component** of the lexicon. Then it is sufficient to indicate the applicability of a certain rule in a special attribute attached to each relevant lexical unit of a verb in the **data component** of the lexicon.

Let us demonstrate our approach on the example of the **recipient diathesis**. The marked construction (as in (5)) is characterized by the verbal form consisting of the auxiliary *dostat* 'to get' and the past participle of a lexical verb. The structural condition on the recipient diathesis is the presence of a valency complementation expressed by the dative case in the valency frame corresponding

to the situational participant 'Recipient'. The following verbs satisfy this condition: *doporučit* 'to recommend', *nahradit* 'to recompense', *nařídit* 'to command', *nařezat* 'to thwack', *přidělit* 'to allocate', *vynadat* 'to rebuke', *zaplatit* 'to pay', etc. We propose the following representation of the recipient diathesis in the lexicon:

(i) A formal syntactic rule describing the changes in the valency structure of verbs is stored in the grammar component of the lexicon.
(ii) In the data component, both verb uses are represented by a single lexical unit described by an unmarked valency frame. The applicability of the formal syntactic rule is ascribed to each relevant lexical unit.

This approach is exemplified by the verb *přidělit* 'to allocate', sentences (4)-(5). The valency structure of this verb consists of three valency complementations: obligatory ACT ('Actor') expressed by the nominative case, obligatory ADDR ('Addressee') expressed by the dative, and obligatory PAT ('Patient') in the accusative. ADDR corresponds to the situational participant 'Recipient'. In the marked construction of the recipient diathesis (5), ACT is shifted from the subject position into the less prominent position of an adverbial. The vacated position of the subject is filled by the valency complementation ADDR. The remaining valency complementation PAT stays in the same syntactic position.

(4) *Ministerstvo kultury.*ACT$_{nom}$ *přidělilo obci.*ADDR$_{dat}$ *dotaci.*PAT$_{acc}$ *na opravu kostela.*
Eng. The Ministry of Culture.ACT has awarded a grant.PAT for the repair of the church to the village.ADDR.

(5) a. *Obec.*ADDR$_{nom}$ *dostala přidělenu dotaci.*PAT$_{acc}$ *na opravu kostela (od Ministerstva kultury).*ACT$_{od+gen}$
Eng. The village.ADDR has been awarded a grant.PAT for the repair of the church (by the Ministry of Culture).ACT

The shifts of the valency complementations ACT and ADDR are manifested by changes in their morphemic forms. This can be described by a syntactic rule Recip.r.

Commentary on the Recip.r
(1) The specific verbal meaning, underlying the use of the marked member of recipient diathesis, is represented by the verbal grammateme 'Recip': its value for the unmarked construction is 0 and for the marked construction, it is 1.

Table 1. Recip.r rule for the recipient diathesis

Recip.r	Unmarked	Marked	Note
verbal grammateme	Recip: 0	Recip: 1	(1)
valency frame	ACT$_{nom}$	ACT$_{od+gen}$	(2)
	ADDR$_{dat}$	ADDR$_{nom}$	(3)

(2) The shift of the valency complementation ACT from the subject position into the adverbial position is manifested by the change of its morphemic form from the nominative into the prepositional group *od*+genitive.

(3) The shift of the valency complementation ADDR from the indirect object position into the prominent subject position is expressed by the change of its morphemic form from the dative into the nominative.

(4) Every valency complementation that is not listed in the rule is preserved.

For example, if we apply the rule Recip.r to the valency frame describing the unmarked use of the verb *přidělit* 'to allocate', example (4), we derive the valency frame corresponding to the verb in the marked construction of the recipient diathesis, example (5), as follows:

$$\text{ACT}_{nom}\ \text{ADDR}_{dat}\ \text{PAT}_{acc}$$
$$\Rightarrow_{\text{Recip.r}}\ \text{ACT}_{od+gen}\ \text{ADDR}_{nom}\ \text{PAT}_{acc}$$

Other grammatical diatheses may be described in the same way:

Passive diathesis

Zaměstnanci informovali vedení podniku o stávce. – Vedení podniku bylo zaměstnanci informováno o stávce.

Eng. The employees have informed the top management about the strike. – The top management has been informed about the strike by the employees.

Deagentive diathesis

Dělníci stavějí novou školu. – Staví se nová škola.

Eng. The workers build a new school. – '(they) build - *Refl* - new - school$_{acc}$' (= A new school has being built.)

Resultative diathesis

Matka uvařila babičce oběd. – Babička má uvařen oběd (od matky).

Eng. Mother has prepared lunch for the grandmother. – 'Grandmother$_{nom}$ - has - prepared - lunch - (by mother)' (= Grandmother has got lunch (prepared by mother).)

Dispositional diathesis

Učím se matematiku. – Matematika se mi učí dobře.

Eng. I learn math. – 'Math$_{nom}$ - *Refl* - me$_{dat}$ - learn - well.' (= Mathematics is easy for me to learn.)

4   Semantic Diatheses

Sentences related by a semantic diathesis express the same situational meaning, similarly as grammatical diatheses. However, in case of semantic diatheses, the different perspective is reflected by the changes in the mapping of situational participants and valency complementations. This can be illustrated by examples (1a)-(1b) and (2a)-(2b), the first one repeated here as (6).

(6)   a. *Peter smeared butter on bread.* – b. *Peter smeared bread with butter.*

In contrast to grammatical diatheses, semantic diatheses are not connected with changes of grammatical categories of verbs. They are rather related to a small number of well-delimited semantic classes of verbs which share certain facets of meaning. The members of semantic diatheses satisfy the following criteria:

1. Semantic diatheses are expressed by lexical-semantic means, i.e., by different lexical units. The members of semantic diatheses do not differ from each other in a specific grammatical meaning of a verb; instead, they differ in structuring situational participants into a valency frame.
2. Semantic diatheses are characterized by shifts of some of situational participants from the prominent surface syntactic position of object or subject to a less prominent syntactic position.
3. The changes in a verbal valency structure arisen from the changes in the correspondence between situational participants and valency complementations may affect the number of valency complementations, their type as well as their morphemic form(s).

The asymmetry between the correspondence of the situational participants and the valency complementations of the verb *to smear* in example (6) is illustrated in Figure 2.
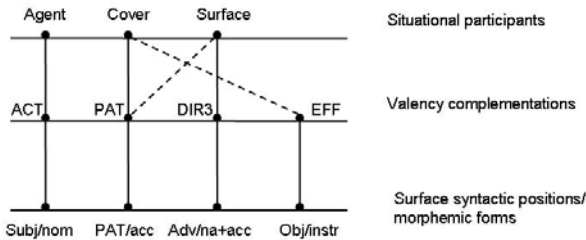

Fig. 2. The changes in the mapping of the situational participants and the valency complementations of the verb *to smear* associated with the semantic diathesis

4.1 Representation of Semantic Diatheses

In this section, we propose the representation of semantic diatheses in the valency lexicon VALLEX. As the members of semantic diatheses differ in the correspondence between situational participants and valency complementations, an appropriate lexical-semantic representation of the situational meaning of the verb is necessary for their adequate description. For this purpose, we adopt the lexical-conceptual structures proposed in [6].

Furthermore, contrary to grammatical diatheses, the changes in the verbal valency structure associated with semantic diatheses vary even within a single type of diathesis. It follows that they cannot be described by general syntactic

rules. For these reasons, we propose to specify separate lexical units corresponding to the individual members of semantic diatheses in the **data component** of the lexicon; these lexical units are interlinked by a relevant type of semantic diathesis. In the **grammar component**, the changes in the verbal valency structure are represented by lexical rules. Our approach can be explained on the example of the **locative semantic diathesis**, see below. Let us mention some other types of Czech semantic diatheses that may be described in the same way:

Material-Product diathesis

   *Nařezal kládu.*PAT-Material *na tři polena.*EFF-Product.
   Eng. He cut the log.PAT-Material into three pieces.EFF-Product
   *Nařezal tři polena.*PAT-Product *z klády.*ORIG-Material
   Eng. He cut three pieces.PAT-Product from the log.ORIG-Material

Source-Substance diathesis

   *Slunce.*ACT-Source *vyzařuje teplo.*PAT-Substance
   Eng. The sun.ACT-Source radiates heat.PAT-Substance
   *Teplo.*ACT-Substance *vyzařuje ze Slunce.*DIR-Source
   Eng. Heat.ACT-Substance radiates from the sun.DIR-Source

Agent-Location diathesis

   *Včely.*ACT-Agent *se hemží na zahradě.*LOC-Location
   Eng. Bees.ACT-Agent are swarming in the garden.LOC-Location
   *Zahrada.*ACT-Location *se hemží včelami.*PAT-Agent
   Eng. The garden.ACT-Location is swarming with bees.PAT-Agent

Representation of Locative Semantic Diathesis. Whereas grammatical diatheses are primarily conditioned by syntactic properties of verbs, semantic diatheses are rather associated with semantic characteristics of verbs. For example, the locative diathesis is typical of the verbs denoting 'co-occurrence' in a broad sense. This class of verbs is, however, semantically heterogeneous: some verbs indicate 'creating co-occurrence', e.g., *naložit* 'to load', *natočit* 'to draw', *namazat* 'to smear', whereas others express 'destroying co-occurrence', e.g., *setřít* 'to wipe', *sklidit* 'to clear', *vybrat* 'to pick out'. Moreover, the verbs from both these subclasses may be distinguished according to whether they express the relation 'inside' (connected with the situational participants 'Container' and 'Filler') or 'outwards' (the situational participants 'Surface' and 'Cover'). Then all these verbs are characterized by the ability to linguistically structure the meaning 'co-occurrence' in two different ways, see (7) and (8).

(7)   *Farmáři.*ACT-Agent *naložili seno.*PAT-Filler *na vůz.*DIR-Container
      Eng. The farmers.ACT-Agent loaded hay.PAT-Filler on the truck.DIR-Container

(8)   *Farmáři.*ACT-Agent *naložili vůz.*PAT-Container *senem.*EFF-Filler
      Eng. The farmers.ACT-Agent loaded the truck.PAT-Container with hay.EFF-Filler

We propose the following representation of the locative diathesis in the valency lexicon:

(i) In the data component, the members of semantic diathesis are represented by separate lexical units, which are interlinked by a relevant type of semantic diathesis.

(ii) In the grammar component, the changes in valency structure of verbs are captured by a lexical rule determining the changes in the mapping of situational participants and valency complementations.

Locative Diathesis of Verbs Indicating 'Creating Co-occurrence'. Let us demonstrate our approach on the example of the verb *naložit* 'to load'. With respect to its semantic properties, we determine the following three situational participants: 'Agent', 'Filler' and 'Container'. The situational meaning of the verb may be informally described as 'an Agent fills a Container with a Filler'. This meaning is syntactically structured in two ways, as in (7) and (8) above.

Both sentences (7) and (8) express the change of location of the situational participant 'Filler' caused by the participant 'Agent'. In comparison with the variant (7), variant (8) is semantically more complex – it implies, in addition, the change of state of the participant 'Container'. This change of state is associated with a holistic interpretation and it results from the change of location of the 'Filler'; i.e., variant (8) implies that the 'Container' is full of the 'Filler', in contrast to variant (7), see esp. [1].

Now let us formulate the lexical-conceptual structures (henceforth LCSs) representing the uses of the verb *naložit* 'to load' related by the locative semantic diathesis. The LCSs must necessarily reflect the situational meaning common to both uses as well as their semantic differences. The LCSs in (a) and (b) correspond to examples (7) and (8), respectively:

(a) [[x ACT$<_{LOAD}>$] CAUSE [BECOME [y INTO z]]]

(b) [x CAUSE [BECOME [z $<LOADED>$]] BY MEANS OF [[x ACT$<_{LOAD}>$] CAUSE [BECOME [y INTO z]]]]

Commentary on the LCSs. (a) This LCS represents a complex event – change of location – consisting of two subevents. (i) The first subevent represented as [x ACT$<_{LOAD}>$] identifies the action of the 'Agent'. The verb $<LOAD>$ in the subscript serves as a modifier of the action. This modifier specifies a way the action is carried out. (ii) The second part of the LCS [BECOME [y INTO z]] represents the change of location of the 'Filler' resulted from the first subevent, see the predicate CAUSE. The preposition INTO identifies the semantic modification of the locative diathesis 'creating co-occurrence' with the relation 'inside'. The labels of the situational participants are associated with the position of the variables in the LCS as follows: x ∼ 'Agent', y ∼ 'Filler', and z ∼ 'Container'.

(b) In comparison with the LCS (a), the LCS (b) is more complex. In addition to LCS (a), it contains the component [BECOME [z $<LOADED>$]] specifying the change of state of the 'Container' indicated as $<LOADED>$. Relating the component [BECOME [z $<LOADED>$]] with the whole LCS (a) indicates that this event arises as a consequence of the event identified by the LCS (a). In

the LCS (b), the same correspondence between the variables and the labels is preserved as in LCS (a).

With respect to the complexity, we consider the variant corresponding to the LCS (a) as unmarked and the variant characterized by the LCS (b) as the marked one.

Table 2. The possible mapping of the situational participants and the valency complementations of the verbs expressing 'creating co-occurrence' specifying the relation 'inside'

x ∼ 'Agent'	y ∼ 'Filler'	z ∼ 'Container'	examples
ACT	PAT	DIR	*naložit seno na vůz*
			nasypat mouku do pytle
ACT	EFF	PAT	*naložit vůz senem*
ACT	∅	PAT	*nasypat pytel *moukou*

Considering the mapping between the valency complementations and the situational participants represented by the variables in the LCS (a) and LCS (b) (Table 2), we formulate the lexical rule Loc.r1 for the locative diathesis. The rule Loc.r1 can be applied also to other verbs expressing 'creating co-occurrence' specifying the relation 'inside', e.g., *natočit* 'to draw', *nasypat* 'to pour', *doplnit* 'to add' (as well as to those verbs specifying the relation 'outwards', see below):

'inside'	'outwards'	LCS(a)/LCS(c)		LCS(b)/LCS(d)
Filler	Cover	PAT	$\Rightarrow_{Loc.r1}$	EFF / ∅
Container	Surface	DIR	$\Rightarrow_{Loc.r1}$	PAT

Commentary on the Loc.r1. On the left side of the rule, the valency complementations of the unmarked member of the diathesis are given, i.e., the situational participant mapped onto PAT in the valency frame of the verb represented by the LCS (a) (and LCS (c) below) is changed into EFF in the frame corresponding to the LCS (b) (and LCS (d)). If EFF is not present in the valency frame, then this participant is not linguistically structured, see ∅ in Table 2. The situational participant mapped onto the valency complementation DIR in the valency frame of the unmarked member of the diathesis corresponds to the valency complementation PAT in the frame of the marked member.

The rule Loc.r1 holds also for the changes in the mapping of situational participants and valency complementations of the verbs indicating 'creating co-occurrence' with the relation 'outwards', e.g., *natřít* 'to smear' and *namalovat* 'to paint'. Situational meaning of these verbs is represented similarly as for the verb *naložit* 'to load'. See the LCSs (c) and (d) representing the verb *natřít* 'to smear' in examples (9) and (10), respectively:

(9)   *Petr*.ACT-Agent *natřel barvu*.PAT-Cover *na zeď*.DIR-Surface
      Eng. Peter.ACT-Agent smeared the paint.PAT-Cover on the wall.DIR-Surface.

(10)   *Petr*.ACT-Agent *natřel zeď*.PAT-Surface *barvou*.EFF-Cover
     Eng. Peter.ACT smeared the wall.PAT-Surface with paint.EFF-Cover

(c) [[x ACT$<_{SMEAR}>$] CAUSE [BECOME [y ON z]]]
(d) [x   CAUSE   [BECOME   [z $<SMEARED>$]]   BY   MEANS   OF
    [[x ACT$<_{SMEAR}>$] CAUSE [BECOME [y ON z]]]]

However, in case of the verbs expressing 'creating co-occurrence' with the rela-
tion 'outwards', another set of labels for the situational participants is associated
with the variables in the LCS (c) and LCS (d): x ∼'Agent', y ∼'Cover', and z ∼
'Surface'. Despite the different set of labels, the changes in the mapping of the
situational participants and the valency complementations are described by the
same rule Loc.r1 as the changes of the verbs indicating the relation 'inside'.

Locative Diathesis of Verbs Indicating 'Destroying Co-occurrence'.
For the description of the changes in the correspondence between situational
participants and valency complementations of the verbs expressing the event
'destroying co-occurrence', we formulate the lexical rule Loc.r2. We demonstrate
this rule on the example of the verb *očistit* 'to clean', see (11) and (12).

(11)   *Jana*.ACT-Agent *očistila bláto*.PAT-Cover *z bot*.DIR-Surface
     Eng. Jane.ACT-Agent cleaned mud.PAT-Cover of the shoes.DIR-Surface

(12)   *Jana*.ACT-Agent *očistila boty*.PAT-Surface *od bláta*.ORIG-Cover
     Eng. Jane.ACT cleaned the shoes.PAT-Surface of mud.ORIG-Cover

With respect to the complexity of the events, we consider the use in (11)
as the unmarked one, see the corresponding LCS (e), whereas the use in (12),
represented by the LCS (f), as the marked one. The labels of the situational
participants are identified with the positions in the LCSs as follows: x ∼ 'Agent',
y ∼ 'Cover', and z ∼ 'Surface':

(e) [[x ACT$<_{CLEAN}>$] CAUSE [BECOME [y OF z]]]
(f) [x   CAUSE   [BECOME   [z $<CLEANED>$]]   BY   MEANS   OF   [[x
    ACT$<_{CLEAN}>$] CAUSE [BECOME [y OF z]]]]

The lexical rule Loc.r2 describes the changes in the correspondence of the
situational participants and the valency complementations of the verb *očistit* 'to
clean'. This rule can be applied also to other verbs indicating 'destroying co-
occurrence' expressing both relations 'outwards', as e.g., *sklidit* 'to clear', *setřít*
'to wipe', *oloupat* 'to peel off', and 'inside', e.g., *vybrat* 'to pick out', *vyklidit*
'to clean out' (in the latter case, the LCS variables are associated with the
labels for the situational participants as follows: x ∼ 'Agent', y ∼ 'Filler', and
z ∼ 'Container').

'outwards'	'inside'	LCS(e)		LCS(f)
Cover	Filler	PAT	$\Rightarrow_{Loc.r2}$	ORIG / ∅
Surface	Container	DIR	$\Rightarrow_{Loc.r2}$	PAT

Commentary on the Loc.r2. On the left side of the rule, the set of valency complementations representing the unmarked member of the diathesis is given. The situational participant 'Cover' or 'Filler' mapped onto PAT in the valency frame represented by the LCS (e) is mapped onto ORIG in the frame represented by the LCS (f). If ORIG is not present in the marked frame, then this participant is not expressed. The situational participant 'Surface' or 'Container' corresponding to the valency complementation DIR in the valency frame of the unmarked member of the diathesis, described by the LCS (e), is mapped onto the valency complementation PAT in the frame of the marked use, represented by the LCS (f).

5   Conclusion and Future Work

We have distinguished two types of relations between semantically close uses of verbs, which are syntactically structured in different ways: grammatical and semantic diatheses. We have proposed their representation in the valency lexicon VALLEX. The changes in a verbal valency structure associated with grammatical diatheses are described by formal syntactic rules which determine regular changes in morphemic form(s) of complementations. Thus both verbal uses may be represented by a single lexical unit, with ascribed information on applicability of individual formal syntactic rule for a relevant grammatical diathesis.

In contrast, the changes typical of semantic diatheses are represented by lexical rules which formally describe the changes in the mapping of situational participants and valency complementations. It implies that both verbal uses are represented by separate lexical units interlinked by a relevant type of semantic diathesis. In the future, we intend to represent typologically different changes in valency structure of verbs in the lexicon in a similar way.

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