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Clear from and *clear of*: The Asymmetric Syntax of Detaching

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Abstract

Verbs of detaching (*clear, wipe, squeeze,* etc.) may occur in two frames in Hebrew. In the Change of Location (COL) frame, the stuff is a direct object and the location is a locative source PP. In the Change of State (COS) frame, the location is a direct object and the stuff is an oblique PP. We demonstrate that this PP is headed by a null preposition, which is responsible to a cluster of peculiar syntactic effects. COL and COS are two instances of scalar changes. Alternating verbs do not lexicalize any scalar change; nonalternating verbs lexicalize either COL (e.g., *remove*) or COS (e.g., *relieve*), failing to occur in the opposite frame due to a constraint banning multiple scalar changes per argument. The advantages of this analysis are critically compared against previous accounts.

1. Introduction

This paper studies alternations of verbs that express *detaching*. For example:

(1) a. Tom cleared the dishes from the table.
b. Tom cleared the table of dishes.

Verbs of detaching are an understudied subclass of locative verbs. The more familiar locative verbs (*fill*, *load* etc.) all involve placing some stuff in (at, on etc.) some location; alternations like (1) involve detaching some stuff from some location.

The immediate question that alternations like (1) raise is what determines their scope. Many verbs that express some form of detaching do not alternate. Some occur only in constructions parallel to (1a), others only in constructions parallel to (1b) ((2) and (3), respectively). The question is why, are there systematic generalizations behind such facts, and whether they can be derived from fundamental principles of linguistic organization.

(2) a. Tom removed the dishes from the table.
b. * Tom removed the table of the dishes.

(3) a. * They robbed the jewels from Tom.
b. They robbed Tom of the jewels.

Our discussion will focus on Hebrew, with occasional forays into English. As it turns out, Hebrew provides a clearer empirical picture and additional syntactic effects that testify to the underlying structures of these grammatical constructions.

The paper proceeds as follows. In section 2 we describe the two classes of Hebrew verbs – alternating and non-alternating verbs. We pay attention to the prepositions introducing the oblique argument, focusing on the PP that denotes the stuff argument. Crosslinguistic evidence suggests that the overt head of this PP is highly variable, despite its semantic constancy (roughly meaning: 'without stuff'). This leads to the conclusion that there is an additional, phonologically null preposition in this PP, which is the semantically active head.

Section 3 examines the differences between the two frames exemplified in (1). Following Levin and Rappaport 1991, we associate the first frame with change of location (COL) and the second one with change of state (COS). We lay out the syntactic structure of each frame, to be defended below. Also discussed are the adjectival passive counterparts of the verbs, which display exactly the same split between alternating forms (whose subject is either the stuff or the location) and non-alternating forms (whose subject can only be the stuff).

In section 4 we develop the theoretical account of the alternation. First, we identify a lexical-semantic contrast between the two classes: Alternating verbs encode neither COS nor COL whereas nonalternating verbs (like *remove*) encode COL. This contrast is independently detectable in the entailments that persist when one of the arguments (stuff or location) is dropped. Second, we discuss a constraint on VP meanings, to the effect that at most one scalar change is allowed to be predicated of an argument. The failure of nonalternating verbs to alternate results from the clash between their lexicalized COL component and the frame-induced COS meaning.

In section 5 we turn to Levin & Rappaport's 1991 study of verbs of detaching in English. We show that the alternating class in English is larger than what Levin & Rappaport assumed, although it is rather unstable across speakers. We further point to certain inadequacies in Levin & Rappaport's theoretical account of the alternation.

Section 6 returns to the main innovative ingredient of the structural configurations proposed in section 3 – the occurrence of a null preposition as the head of the resultative PP in the COS frame. We present novel data supporting the existence of this null P, in the form of three peculiar restrictions on the stuff-PP: It cannot be pronominalized, it cannot undergo scrambling and it resists Ā-movement. Under plausible assumptions, all three restrictions follow from the null P head.

In section 7 we discuss a striking contrast between English and Hebrew: While the verbs of deprivational possession (as in (3)) in English encode COS, in Hebrew they encode COL. Correspondingly, they fail to alternate in both languages, but occur in the opposite frames (the COS frame in English, the COL frame in Hebrew). We discuss the interesting implications this state of affairs has for "crosslinguistic lexical semantics" and the underdetermination of grammatical form by conceptual structure.

Section 8 summarizes the main findings and conclusions of this study.

2. Verbs of detaching

2.1 Two classes

Events of detaching involve three participants: An agent, some stuff (sometimes called *locatum*) and a source location. The event consists in the agent detaching or removing the stuff from the location. Thus, verbs of detaching are typically ditransitive. The agent is mapped to the subject position, while the stuff and location are mapped to object positions. Exactly how the stuff and location arguments are realized and what determines their alignment is the subject matter of this paper.

We will investigate two syntactic frames of verbs of detaching. In one, the direct object is the stuff argument and the oblique PP is the location (typically construed as a locative source). In the other, the direct object is the location and the oblique PP is the stuff. This is the alternation illustrated in (1) above.

(4) *Two syntactic frames for verbs of detaching*
Frame A: DP_{Agent} V DP_{Stuff} PP_{Loc}
Frame B: DP_{Agent} V DP_{Loc} PP_{Stuff}

Verbs of detaching can be broken into two classes: those that alternate between the two frames and those that only occur in frame A.[1] Below we provide nearly exhaustive lists of the verbs in each class.

(5) <u>Alternating verbs</u>
pina ('clear'/'evacuate'/'evict'), *nika* ('clean'/'clear'), *roken* ('empty'), *nikez* ('drain'), *nigev* ('wipe'), *hifšit* ('undress'), *ša'av* ('vacuum'), *saxat* ('squeeze'), *hivriš* ('brush'), *maxak* ('erase'), *tite* ('sweep'), *sinen* ('filter'/'sift'), *geref* ('rake'), *šataf* ('wash'/'rinse'), *marat* ('pluck'), *gazaz* ('shear'), *gile'ax* ('shave'),

[1] In English (but not in Hebrew) there exist a small class of verbs (involving deprivation of possession) which only occur in frame B. We return to them in section 7. Hebrew and English also differ in the size of the alternating class, a point to which we return in section 5.1.

gazam (‘prune’/’trim’), *bazaz* (‘loot’), *šadad* (‘rob’), *kilef* (‘peel’), ni’er (‘shake off‘).

(6) Non-alternating verbs

šalaf (‘pull out’/‘extract’), *šifšef* (‘scrub’), *silek* (‘remove’/‘drive-out’/‘expel’), *akar* (‘uproot’), *hesir* (‘remove’), *hoci* (‘take-out’), *xilec* (‘release’/‘rescue’), *xalac* (‘uncork’), *talaš* (‘tear-off’/‘uproot’/‘pluck’), *macac* (‘suck’), *yanak* (‘suckle’), *hirxik* (‘distance’), *gereš* (‘expel’/’deport’), *zikek* (‘distill’), *mašax* (‘withdraw’/‘pull’), *saxat* (‘extort’), *liket* (‘cull’), *mica* (‘extract’), *šixrer* (‘free’, e.g., from enclosure).

Not all Hebrew speakers allow frame B (although as far as we know, frame A is uniformly accepted) and there are occasional disagreements about very few verbs. The data reported below, we believe, represent the judgments of the majority of speakers.

Examples (7)-(8) demonstrate the alternation.

(7) Alternating verbs: Frame A

a. Dan nika perurim me-ha-šulxan.
Dan cleaned crumbs from-the-table
‘Dan cleaned crumbs off the table.’

b. ha-iriya pinta et ha-polšim me-ha-binyan.
the-municiplaity evacuated ACC the-invaders from-the-building
‘The city authorities evacuated the invaders from the building.’

c. Dan nigev et ha-avak me-ha-madaf.
Dan wiped ACC the-dust from-the-shelf
‘Dan wiped the dust off the shelf.’

d. Gil šataf et ha-boc me-ha-madregot.
Gil washed ACC the-mud from-the-stairs
‘Gil washed the mud from the stairs.’

(8) Alternating verbs: Frame B

a. Dan nika et ha-šulxan me-perurim.
Dan cleaned ACC the-table from-crumbs
'Dan cleaned the table of crumbs.'

b. ha-iriya pinta et ha-binyan me-ha-polšim.
the-municiplaity evacuated ACC the-building from-the-invaders
Lit. 'The city authorities evacuated the building of the invaders.'

c. Dan nigev et ha-madaf me-ha-avak.
Dan wiped ACC the-shelf from-the-dust
Lit. 'Dan wiped the shelf of the dust.'

d. Gil šataf et ha-madregot me-ha-boc.
Gil washed ACC the-stairs from-the-mud
Lit. 'Gil washed the stairs of the mud.'

Compared to English, the Hebrew data possess two interesting features. First, the preposition introducing PP_{Loc} in frame A and the one introducing PP_{Stuff} in frame B are the same – *me-* 'from'. In English, the former is a locative source P (*from*/*off*) while the latter is *of*. Indeed, we will see shortly that the *me-* of PP_{Stuff} is not a source P at all. Second, frame B is more productive in Hebrew than in English; verbs like *wip*e participate in the Hebrew alternation but not in the English one, at least for some speakers (Levin & Rappaport 1991). We return to the English data in section 5.1.

Hebrew and English pattern alike with respect to non-alternating verbs. None of the verbs in (6) occur in frame B.

(9) Non-alternating verbs: Frame A

a. Dan mašax kesef me-ha-kaspomat.
Dan withdrew money from-the-ATM
'Dan withdrew money from the ATM.'

b. ha-menahel silek/gereš/hoci et ha-yeladim
the-principal expelled/drove-out/took-out ACC the-kids
mi-beyt-ha-sefer.
from-house-the-book
'The principal expelled/drove out/took out the kids from school.'

(10) Non-alternating verbs: *Frame B

a. * Dan mašax et ha-kaspomat me-kesef.
Dan withdrew ACC the-ATM from-money
Lit. 'Dan withdrew the ATM of money.'

b. * ha-menahel silek/gereš/hoci et beyt-ha-sefer
the-principal expelled/drove-out/took-out ACC the-school
me-ha-yeladim.
from-the-kids
Lit. 'The principal expelled/drove out/took out the school of the kids.'

We now turn to examine more closely the role of the preposition *me-* in the alternation.

2.2 The dual nature of *me-*

Most commonly, the Hebrew preposition *me-* is used to introduce a locative source, e.g. (11). In this function, it alternates with the free standing P *min* (from which it was plausibly derived). *min* is restricted to occur with morphologically definite DPs (containing *ha-* 'the'). Other than that, the only difference between the two prepositions as locative source markers is in register (*min* is less colloquial).

(11) a. Dani halax min/me- ha-bayit el ha-universita
Dani walked from-the-home to-the-university
'Dani walked from home to the university.'

b. Dani yaca min/me- ha-xeder.
Dani exited from-the-room
'Dani left the room.'

Interestingly, with verbs of detaching, *min* and *me-* part ways. Both are acceptable in frame A, where the PP denotes a locative source, but only *me-* is acceptable in frame B, where the PP denotes the stuff.

(12) a. Dan saxat et ha-mic *min/me-* ha-tapuz. *frame A*
Dan squeezed ACC the-juice from the-orange.

b. Dan saxat et ha-tapuz **min/me-* ha-mic šelo. *frame B*
Dan squeezed ACC the-orange from the-juice its
'Dan squeezed the juice from the orange.'

(13) a. Dan maxak et ha-nusxa'ot *min/me-* ha-lu'ax. *frame A*
Dan erased ACC the-equations from-the-blackboard

b. Dan maxak et ha-lu'ax **min/me-* ha-nusx'aot. *frame B*
Dan erased ACC the-blackboard from-the-equations
'Dan erased the equations from the blackboard.'

These contrasts strongly suggest that the preposition *me-* heading PP_{Stuff} is not the locative source *me-*. Indeed, frame B does not seem to convey the meaning of removal of an object from a location, but rather causing the location to be without the object (see section 3.1). The fact that *me-* introducing PP_{Stuff} does not alternate with *min*, an unambiguous source preposition, confirms this conclusion.[2]

The question remains, though, what *does me-* mean in frame B. Our answer might look surprising at first glance: It means nothing at all.

2.3 Crosslinguistic variation

Two independent arguments converge on the conclusion that *me-* in frame B is a semantically contentless marker – possibly just an oblique case marker. First, the choice of this preposition is remarkably variable across languages. Second, there is clear

[2] The Arabic cognate *min* does occur in both frames in Modern Standard Arabic (Mahmoud 2003), masking the ambiguity.

i. Farragha aHmad-u l-kutub-a min a-SSunduuq-i.
emptied Ahmad-NOM the-books-ACC from the-box-GEN
'Ahmad emptied the books from the box.'

ii. Farragha aHmad-u SSunduuq-a min al-kutub-i.
emptied Ahmad-NOM the.box-ACC from the-books-GEN
'Ahmad emptied the box of the books.'

syntactic evidence for a "hidden" preposition heading PP_{Stuff}, which is presumably the semantically active predicator. In this section we present the first argument. The second one will be developed in section 6.

Verbs of detaching alternate in their argument realizations in many languages. While frame A expresses PP_{Loc} with predictable locative source prepositions, PP_{Stuff} in frame B is strikingly variable. In the examples below, all set in frame B, we boldface the preposition introducing PP_{Stuff}. The glosses reflect the canonical meanings and uses of these prepositions in the relevant languages.[3]

(14) a. Jan töm-de bord-et **på** porslin *Swedish*
John empty-PRET table-DEF.NEUTER **on** china
'John cleared the table of dishes.'

b. John ochistil stol **ot** posudy. *Russian*
John cleared table **from** dishes.GEN
'John cleared the table of dishes.'

c. Jean a débarrassé la table **des** plats. *French*
Jean has cleared the table **of** the dishes
'John cleared the table of dishes.'

d. Vi tømte kontoen **for** penger. *Norwegian*
We emptied account.DEF.SG **for** money.
'We emptied the account of money.'

e. John rydd-ede bordet **for** tallerken-er. *Danish*
John clear-PST table.DEF **for** plate-PL.INDEF
'John cleared the table of dishes.'

f. John siivosi pöydän astioista. *Finnish*
John cleared table.DIRECT dishes.**ELATIVE**
'John cleared the table of dishes.'

g. Hesperiam exhausit acquis. *Latin*
Hesperia.ACC emptied water.**ABL**
'(He) emptied the Hesperia of water.'

[3] Data collected from from replies to a LinguistList posting in January 22, 2008.

PP_{Stuff} may be headed by *of, for, on* and *from*. In languages with oblique case morphology (like Russian, Finnish and Latin), the stuff argument may bear genitive, elative or ablative case. It seems doubtful that all these markers share some common semantic core, which furthermore can be established *independently* of their participation in frame B. At least, we think that anyone who maintains this position bears the burden of proof.

In the analysis to follow, we will simply assume that the overt preposition in PP_{Stuff} is not semantically active. This, of course, does not mean that the particular choice of that preposition in any given language is arbitrary. Quite the contrary, we believe that this choice *is* affected by the semantics of the *surrounding* material. As shown in Landau 2002, the Hebrew *me-* is associated with "negativity" in other contexts, specifically, it functions as a negative complementizer in infinitival complements of verbs like *nimna* 'refrain' and *mana* 'prevent'. We may assume that *me-* in frame B bears an uninterpretable [neg] feature. The negative interpretation itself, however, stems from a distinct (null) preposition, which selects a *me-*PP. This is not unlike what we find in complex prepositional structures, where a semantically active P selects a contentless P or case marker on its complement (e.g., *because of, despite of, instead of, due to*, etc.).

This view seems to be at odds with a proposal made by Beavers (2008a). Beavers takes *of* in frame B to be semantically contentful. Its meaning is compatible with either source (e.g., *We desired it of him*) or with a theme separated from a source – precisely our PP_{Stuff}, which he calls *abstrument*, following Hook 1983. He then goes on to claim that verbs selecting an abstrument (like *clear* in frame B) would license an oblique PP headed by a P whose meaning is compatible with this semantic role. Languages lacking such Ps, like Japanese, would therefore lack frame B altogether – as in fact they do.

The problem with this line of reasoning is that there is no *independent* evidence for *of* being endowed with the semantics of abstrument – other than its occurrence in frame B. But if the semantics of abstrument in frame B stems from a different component of the structure, then *of* might just be meaningless (as it is, uncontroversially, in other contexts, e.g., *pursuit of happiness*); nothing is gained by assigning semantics to it. Moreover, the crosslinguistic variability presented in this section casts serious doubts on Beavers' proposal, for it would seem to entail that Swedish *på* ('on'), Norwegian and Danish *for* ('for') and French *de* ('of') all embrace (are consistent with) the abstrument semantics – separating and detaching. This is not logically impossible, just unlikely. Again, one wonders how such a claim can be motivated independently of the facts in (14).[4]

[4] The grammatical situation described here is not uncommon. An observational correlation between a piece of syntax and a piece of meaning does not warrant, in the general case, the conclusion that the piece of syntax *denotes* the piece of meaning. In many languages, causative constructions implicate dative case

2.4 Theoretical questions

Having presented the main facts to be explained, we are in a position to pose some theoretical questions. These questions will guide the discussion to follow.

(15) a. What are the meaning components that distinguish the alternating and non-alternating verbs of detaching?

b. How are the semantic differences between the alternating and non-alternating verbs mapped onto the syntactic structures they project?

c. What grammatical principle, which is sensitive to these differences, is responsible for blocking frame B with non-alternating verbs?

d. How does the size of the alternating class vary across languages, dialects and speakers, and why?

Section 4.1 addresses (15a); section 3.2 addresses (15b); section 4.2 addresses (15c); finally, sections 5.1 and 7 offer some preliminary observations in the way of approaching (15d).

3. Two meanings, two structures

In this section we begin to look more closely at the meanings associated with frame A and with frame B (section 3.1). We offer a distinct syntactic structure for each frame (section 3.2) and demonstrate that the dichotomy between the two verb classes carries through to their corresponding adjectival passives (section 3.3).

3.1 The semantic import of the alternation

Consider again an example of the alternation with verbs of detaching.

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assignment to the causee, but it would be wrong to conclude that this dative case contributes to the semantics of causation. Similarly, a semantically contentful head which is phonetically null may select a semantically contentless head which is overt, giving the illusion that the latter is responsible for the interpretation. Landau (2007) mentions a certain clausal adjunct in Hebrew, expressing reason, whose prepositional head is null. The complementizer it selects (*ki*) is then superficially (but not in fact) associated with the semantics of reason. Likewise, rationale clauses in English may occur with or without *in order*. When occurring without it, the infinitival head *to* does not take on the semantics of purpose (which is assumed to reside with a null *in order*). Examples are numerous.

(16) a. Dan nika perurim me-ha-šulxan. *frame A*
Dan cleaned crumbs from-the-table
'Dan cleaned crumbs off the table.'

b. Dan nika et ha-šulxan me-perurim. *frame B*
Dan cleaned ACC the-table from-crumbs
'Dan cleaned the table of crumbs.'

The characteristic interpretation of frame A is that of a change of location (COL): In (16a), Dan causes crumbs to move away (be separated) from the table. Of course, particular verbs may encode additional information about how this removal process takes place (e.g., by wiping, squeezing or expelling), but the frame itself only conveys the fact that the event involves removal, a type of COL. This interpretation of frame A, schematized in (17a), is exhibited both by alternating and non-alternating verbs.

In contrast, the characteristic interpretation of frame B is that of a change of state (COS): In (16b), Dan causes the table to be without crumbs. Again, information about the manner or means of the action may inhere in the verb (e.g. *rake*) or not (e.g., *empty*). Note that the COS only holds with respect to the stuff mentioned; (16b) does not entail that the table is clean, only that it is clean of crumbs. The COS interpretation, schematized in (17b), is not available to the non-alternating verbs, for reasons we discuss below.

(17) a. COL interpretation (Frame A): [X **CAUSE** [Y **BECOME** [**NOT AT** Z]]]
b. COS interpretation (Frame B): [X **CAUSE** [Z **BECOME** [**WITHOUT** Y]]]

The basic distinction between the COL and the COS senses of the alternants was proposed by Levin & Rappaport (1991), and we fully agree with this insight. What we disagree with is the claim that *wipe*-verbs do not occur in frame B (in English) because they do not encode a resultant state (see section 5.2).

L&R also show that our understanding that frame A involves some COS and frame B some COL results from pragmatic knowledge. When crumbs are cleaned from a table, the table's state changes (it becomes cleaner), and when a table is cleaned of crumbs, the crumbs undergo a change of location. These inferences derive from what we know about the nature of these events, and not from grammatical encoding. This view is strongly supported by the existence of non-alternating verbs. Verbs that occur only in frame A typically do not entail any COS.[5]

[5] A lot, of course, depends on how one defines "state", or rather, how the grammar does so. What (18) shows is that a cabinet from which documents are removed does not thereby change its state *from the grammatical point of view* (although philosophers may disagree).

(18) a. John removed the documents from the cabinet.
b. * John removed the cabinet of the documents.

Conversely, verbs that occur only in frame B do not entail a COL. These are what L&R call *deprive*-verbs where the stuff argument is typically abstract and the location is a person. English does not encode these verbs as COL verbs, although Hebrew, perhaps surprisingly, does (see section 7).

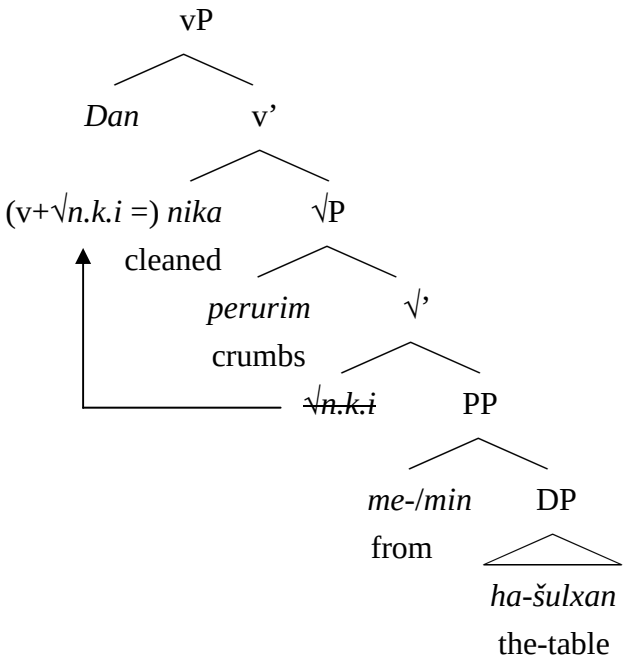
(19) a. The new bill deprives POWs of their fundamental rights.
b. * The new bill deprives fundamental rights from POWs.

3.2 The structures of the two frames

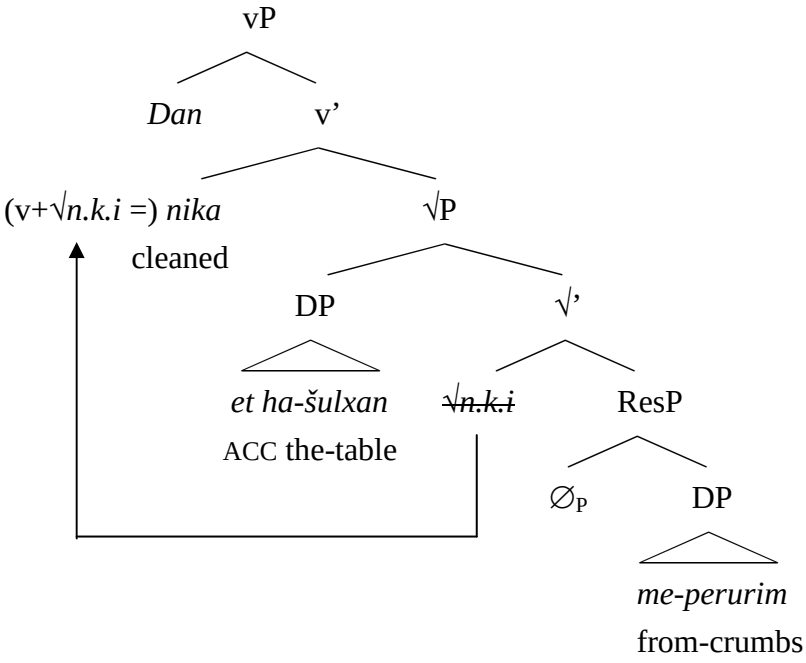
We assume the general framework of Distributed Morphology, as already applied to the Hebrew verbal system (Doron 2003, Arad 2005). A consonantal root projects a root phrase (√P), in which internal arguments are licensed. The external argument is introduced by a light v, which also supplies the vocalic template (*binyan*) of the verb.

Frame A expresses a change of location: A locative (source) PP is merged as the sister of the root and the stuff DP as its specifier. Frame B expresses change of state: A resultative phrase (ResP) is merged as the sister of the root and the location DP as its specifier. Thus, √' in (20a) predicates COL of its specifier while √' in (20b) predicates COS of its specifier.

(20) a. Dan nika perurim me-ha-šulxan. *Frame A*
Dan cleaned crumbs from-the-table
'Dan cleaned crumbs off the table.'



b. Dan nika et ha-šulxan me-perurim. *Frame B*
Dan cleaned ACC the-table from-crumbs
'Dan cleaned the table of crumbs.'



While (20a) is relatively straightforward, (20b) merits some comment. Recall the conclusion of section 2.3: The preposition *me-* heading PP_{Stuff} is not semantically active. Rather, the resultative semantics ("BE WITHOUT") is contributed by a null preposition, the head of ResP (we motivate this head in section 6). The question arises, then, whether it is even approrpriate to continue calling stuff *me-* a preposition. We believe that it is better viewed as a case marker (similar to the accusative case marker *et*), an assumption that gains some support in light of data we review in section 6.1. Strictly speaking, then, *me-* forms a DP with its complement; PP_{Stuff} becomes a PP in virtue of the null preposition (the head of ResP), not in virtue of *me-*. We will continue referring to PP_{Stuff} with this analysis in mind.

The structures in (20) locate the licensing of PP_{Loc} and PP_{Stuff} in the root itself. The claim is that roots of alternating verbs are compatible with either type of PP complement, whereas roots of non-alternating verbs are only compatible with PP_{Loc} complements. Before proposing an explanation for this contrast, we would like to establish that the relevant selectional contrast indeed inheres in the roots. The evidence comes from the adjectival passives of verbs of detaching.

3.3 Alternating and non-alternating adjectival passives

As the title of this section suggests, verbs of detaching give rise to two types of adjectival passives. One type (the alternating type) takes either the stuff or the location argument as its subject. The other type can only be predicated of the stuff argument. In both types, the non-subject argument may be expressed as an oblique *me*-PP.

It turns out that there is a nearly perfect correlation between the two types of verbs and the two types of adjectives. It is stated in (21).

(21) *Adjectival passives from verbs of detaching*
Given a root R that selects the arguments Stuff S and Location L:
$[DP_{S/L}\ AdjPass_R]$ is possible iff $[V_R\ DP_{S/L}]$ is possible.

In other words, adjectival passives based on roots of alternating verbs also alternate between predication of stuff and predication of location, whereas those based on roots of non-alternating verbs only predicate the stuff argument. Whether or not the PP argument must occur in the adjectival version correlates with whether or not it must occur in the verbal version; this is of course a consequence of the Projection Principle, which is category-neutral, as shown in Levin and Rappaport 1986.

Consider some relevant examples. In all the sentences below, either the form of the predicate, its syntactic context or its interpretation guarantee that it is an adjective

(and not a verbal passive). The adjectival passives are based on the roots of the alternating verbs in (5).

(22) *Alternating adjectival passives*

a. ha-dayarim niš'aru mefunim (me-ha-binyan).
the-tenants remained evacuated (from-the-building)
'The tenants remained evacuated$_A$ (from the building).'

b. ha-binyan niš'ar mefune (me-dayarim).
the-building remained evacuated (from-tenants)
'The building remained evacuated$_A$ (of tenants).'

c. ha-alim niš'aru megorafim ba-pina.
the-leaves remained raked in.the-corner
'The leaves remained raked in the corner.'

d. ha-xacer nir'et megorefet (me-alim).
the-yard looks raked (from-leaves).
'The yard looks raked (of leaves).'

e. ha-mic haya saxut (me-ha-tapuz).
the-juice was squeezed (from-the-orange)
'The juice was squeezed (from the orange).'

f. ha-tapuz haya saxut (me-ha-mic).
the-orange was squeezed (from-the-juice)
'The orange was squeezed of the juice.'

The roots of the non-alternating verbs in (6) give rise to non-alternating adjectives, which only predicate the stuff argument.

(23) *Non-alternating adjectival passives*

a. ha-talmidim hayu megorašim (me-beyt ha-sefer).
the-pupils were expelled (from-house the-book)
'The pupils were expelled$_A$ (from school).'

b. *beyt ha-sefer haya megoraš (me-ha-talmidim).
House the-book was expelled (from-the-pupils)
'The school were expelled$_A$ (of the pupils).'

c. ha-ekdax ha-šaluf (me-ha-megira) od haya xam.
the-pistol the-pulled-out (from-the-drawer) still was hot
'The pistol pulled-out$_A$ from the drawer was still hot.'

d. *ha-megira ha-šlufa (me-ha-ekdax) od hayta ptuxa.
the-drawer the-pulled-out (from-the-pistol) still was open
'The drawer pulled-out$_A$ (of the pistol) was still open.'

In fact, some of these roots do not give rise to any well-formed adjective: **muca* ('taken-out'), **musar* ('removed'), **xaluc* ('uncorked') (the first two exist as verbal passives).

The fact that verbs and adjectives of detaching display the same distributional characteristics falls out naturally from the assumption that they are derived from a common root. Consider √*s.x.t*, the root of *saxat* 'squeeze' and √*g.r.š*, the root of *gereš* 'expel'. The former may project two √Ps, the latter only one.

(24) Two projections of √*s.x.t* (alternating)
a. [$_{\sqrt{P}}$ DP$_{Stuff}$ [$_{\sqrt{}}$ √*s.x.t* PP$_{Loc}$]]
b. [$_{\sqrt{P}}$ DP$_{Loc}$ [$_{\sqrt{}}$ √*s.x.t* ResP$_{Stuff}$]]

One projection of √*g.r.š* (non-alternating)
c. [$_{\sqrt{P}}$ DP$_{Stuff}$ [$_{\sqrt{}}$ √*g.r.š* PP$_{Loc}$]]
d. *[$_{\sqrt{P}}$ DP$_{Loc}$ [$_{\sqrt{}}$ √*g.r.š* ResP$_{Stuff}$]]

If √P is embedded under v, the result is a verb. If it is embedded under a designated *a* (or Asp) head, the result is an adjectival passive (see Embick 2004, Kratzer 2005). Now, we have not yet explained why the roots of *squeeze* and *expel* differ in this way; that is, what constraint is violated in (24d). This key question is addressed in the next section. The present point, however, is that the *same* constraint is at work in (10) and (23b,d); that is, the class of non-alternating roots cannot appear in the COS frame, and for this reason they neither produce verbs in frame B nor adjectival passives that predicate the location argument.[6]

[6] We note some additional facts concerning adjectives of detaching. First, there exist three non-passive adjectives – *naki* 'clean', *reyk* 'empty' and *panuy* 'clear, available' – alongside the adjectival passives

4. Explaining the alternation

The explanation of the distinction between the alternating and the non-alternating class proceeds in two steps. First, in section 4.1, we examine closely the meaning of verbs in each class. Specifically, we ask what aspects of grammatical meaning, if any, are lexicalized by each class. By "grammatical meaning" we refer to meaning components that affect the syntactic realization of arguments. By "lexicalized" we mean "entailed in any use of the verb". Then, in section 4.2, we discuss the grammatical constraint that applies to VPs in such a way as to exclude frame B with non-alternating verbs.

4.1 What each verb class lexicalizes

Isolating the "core" meaning of verbs is a tricky matter. One must always ask what parts of meaning are due to the syntactic frame in which the verb appears and what parts inhere in the verb itself. Often the issue is rephrased as the division of labor between the root and functional heads (within the vP), but this need not be so; the root's meaning surely restricts the range of functional heads that can combine with it.

The case at hand presents the following difficulty. As we argued above in (17), frame A delivers a COL interpretation while frame B delivers a COS interpretation. Thus, inspecting the meaning of verbs of detaching in these frames would be uninformative. Both *šataf* 'wash' and *hesir* 'remove' yield a COL interpretation in frame A because of the way PP_{Loc} is interpreted with respect to DP_{Stuff}. *šataf* 'wash' yields a COS interpretation in frame B because of the way ResP (=PP_{Stuff}) is interpreted with respect to DP_{Loc}. This still falls short of explaining why *hesir* 'remove' fails to occur in frame B.

It seems that a better grip at the verb's core meaning is available when it occurs with a single argument. Then we may ask whether COS or COL (or nothing) is entailed, despite the absence of the location or stuff argument. To the extent that these

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from the same roots (*menuke*, *merukan*, *mefune*). The first two are underived, the third one is a decausative variant of the adjectival passive (see Meltzer 2009).

Second, accidental gaps exist. The expected adjectival passive of *hifšit* 'undress' is *mufšat*, but the meaning of that form has drifted and is now 'abstract'. Finally, the adjectives formed from the strongly resultative roots of *clean* and *empty* sound less natural with a Stuff subject, but such examples are still possible.

i. (?) ha-mayim ha-merukanim mat'imim le-haškaya.
the-water the-emptied suitable to-irrigation
'The emptied water is suitable for irrigation.'

ii. ? ha-lixlux ha-menuke ne'eram ba-pina.
the-dirt the-cleaned was.piled in.the-corner
'The cleaned dirt was piled in the corner.'

interpretations persist, we may safely attribute them to the verb itself (or rather, the root) and not to the ditransitive frame. Conversely, if these interprertations disappear, they should be regarded as part of the frame.

In general, alternating verbs of detaching may occur as simple monotransitives in Hebrew, with either DP_{Stuff} or DP_{Loc}. Crucially, in such examples neither COS nor COL are *entailed*, as the parenthesized continuations make clear.[7]

(25) Alternating verbs: *V* DP_{Stuff} (no COL entailed)

a. Gil šataf et ha-boc (aval hu niš'ar al ha-madregot).
Gil washed ACC the-mud (but it remained on The-stairs)
'Gil washed the mud (but it stayed on the stairs).'

b. Gil gazaz et ha-cemer (aval hu niš'ar munax al ha-kivsa).
Gil sheared ACC the-wool (but it remained placed on the-sheep)
'Gil sheared the wool (but it stayed on the sheep).'

c. Rina hiclixa lisxot kama tipot mic (aval hen niš'aru tluyot mi-sfat ha-tapuz).
Rina managed to.squeezed few drops juice (but they remained hung from-edge.of the-orange)
'Rina managed to squeeze a few drops of juice (but they remained hanging from the edge of the orange).'

(26) Alternating verbs: *V* DP_{Loc} (no COS entailed)

a. Gil šataf et ha-madregot (aval hen adayin hayu meluxlaxot be-boc).
Gil washed ACC the stairs (but they still were dirty in-mud)
'Gil washed the stairs (but they were still dirty with mud).'

[7] We emphasize "entailed". Normal events of detaching do implicate either COS or COL, but these implicatures are couched in our world knowledge, not in the lexicalized content of the verbal root.

b. Gil gazaz et ha-kivsa (aval adayin haya aleyha
Gil sheared ACC the-sheep (but still was on.it
cemer).
wool)
'Gil sheared the sheep (but there was still wool on it).'

c. Rina hiclixa lisxot et ha-tapuz (aval lo yaca
Rina managed to.squeeze ACC the-orange (but not came.out
mimeno šum mic).
from.it any juice)
'Rina managed to squeeze the orange (but no juice came out of it).'

In contrast, when non-alternating verbs occur without PP_{Loc}, the COL entailment is retained (note the infelicitous continuations in parentheses).[8]

(27) Non-alternating verbs: *V* DP_{Stuff} (COL entailed)

a. Gil hesir et ha-miškafayim (# aval hem niš'aru
Gil removed ACC the-eyeglasses (# but they remained
munaxot al apo).
Perched on his.nose)
'Gil removed the eyeglasses (# but they remained perched on his nose).'

b. Gil šalaf et ha-ekdax (# aval hu niš'ar be-tox
Gill pulled.out ACC the-pistol (# but it remained in-inside
ha-nartik).
the-holster
'Gil pulled out the pistol (# but it remained inside the holster).'

c. Rina silka et ha-orvim (# aval hem lo zazu
Rina drove.out ACC the-crows (# but they not moved
mi-mkomam).
from-their.place)
'Rina drove out the crows (# but they didn't move an inch).'

[8] Levin & Rappaport (1991) claim that PP_{Loc} cannot be dropped with non-alternating verbs. If obligatoriness of an argument is a sufficient (though not necessary) indication for a lexicalized meaning component, then the English facts converge with the Hebrew ones.

These facts suggest that alternating and non-alternating verbs of detaching differ along a crucial semantic dimension. While alternating verbs do not intrinsically encode a COS or COL, non-alternating verbs encode a COL. Put differently, alternating verbs are neutral (unspecified) with respect to the endpoint of the event they denote, whereas non-alternating verbs are specified for COL.

(28) *Lexicalized meaning in verbs of detaching*

a. Alternating verbs encode neither COS nor COL.

b. Non-alternating verbs encode COL.

This contrast provides the key to explaining the alternation. Before we turn to this explanation, however, we must address a few apparent counterexamples to (28a).

There are exactly three alternating verbs that appear to entail a COS: *nika* 'clean', *pina* 'clear, evacuate' and *roken* 'empty'. These verbs form Levin & Rappaport's (1991) *clear*-class. Indeed, L&R maintain that when these verbs occur with DP_{Loc} alone, it is entailed that the resultant state named by the corresponding adjective (*clean, clear, empty*) has been achieved.

We believe that this is true for *clear* and *empty* but not for *clean*. Although a resultant state of cleanliness is strongly implicated by an event of cleaning, it is not entailed. *Clean* can be used as an activity verb, and examples like the following ((29a) was found on the web) are quite acceptable.

(29) a. I had cleaned the window before Sonia arrived, but it was still dirty.

b. nikiti et ha-xulca (aval ha-ketem ha-gadol lo yarad).
cleaned.1sgACC the-shirt (but the-stain the-big not came.off)
'I cleaned the shirt (but the big stain wouldn't come off).'

Once again, we take it that lexicalized meaning components cannot be cancelled, so a COS component cannot be inherent to the root of *clean*.

Parallel examples with *clear* and *empty* are much harder to come by, perhaps impossible. However, what is important in the present context is that when they are used in frame A, *clear* and *empty* do not entail a COS.[9]

(30) *Frame A: No COS*

a. Jane cleared old furniture from backyards.
(but some furniture was left in part of them).

b. Jane emptied water from tubs (until they were half-empty).

[9] We use an indefinite DP_{Stuff} in (30) to neutralize the holistic interpretation prompted by definite objects.

Frame B: COS entailed

c. Jane cleared backyards of old furniture
(# but some furniture was left in part of them).

d. Jane emptied tubs of water (# until they were half-empty).

As we will see below, what is crucial for our analysis is not the absolute absence of a COS entailment but its absence in frame A. Thus, *clear* and *empty* will not pose a real problem, given (30a-b). A question we will not address is what enables *clear* and *empty* to lose their COS entailment in frame A. This is a difficult issue we have to leave unresolved. Note, though, that "lexical subordination" or "lexical extension" in the sense of Levin and Rappaport (1988, 1991) is inadequate, given that a loss of entailment is a non-monotonic effect, whereas lexical subordination is monotonic, only adding meaning components, not subtracting ones.

4.2 The Unique Scalar Change Constraint (USCC)

The grammatical constraint we need to appeal to is, in fact, already well-established. At least since the early 80s, it has been recognized that predicate phrases (i.e., VPs) may not specify COS and COL for the same argument *simultaneously* (Simpson 1983, Goldberg 1991, Tenny 1994, Levin and Rappaport 1995, Tortora 1998). Until recently, the rationale behind this mutual exclusiveness was not entirely clear. Levin & Rappaport (2008), however, shed new light on this constraint by focusing attention on the core semantic notion of *a scale* (following Hay, Kennedy and Levin 1999). A scale is "a set of degrees – points or intervals indicating measurement values – on a particular dimension (e.g., height, temperature, cost), with an ordering relation". A *scalar change* "involves a change (an entity undergoes) in a particular direction on a scalar dimension". For example, *arrive*, which is inherently directed, encodes a scalar change, but *run* encodes a nonscalar change.

The scalar dimension could be location in space, as in COL verbs, or the state of the object, as in COS verbs. From this perspective, COL and COS are but two instantiations of the same semantic property of scalar change. Note that scales may consist of two-points (*arrive, break*) or multiple-points (*descend, cool*), a distinction of interest, though not in the present context (see Beavers 2008b).

Building on these ideas, we can state the restriction against COL and COS cooccurring in the same predicate as follows.

(31) *The Unique Scalar Change Constraint (USCC)*
A VP cannot predicate both a COL and a COS of the same argument.

The consequences of the USCC can be observed in a variety of contexts.[10] The COL component could be lexically encoded, as in directed motion verbs (32a,b), specified by a directional PP (32c,d), or part of the semantics of a ditransitive verb (32e). In all such cases a resultative phrase cannot be added. Note that the examples below are grammatical, if at all, only on the depictive reading.

(32) a. * The box arrived open.
b. * She ascended sick.
c. * Sam kicked Bill black and blue out of the room.
d. * Sam tickled Chris silly off her chair.
e. * Joe kicked Bob the suitcase open.

The USCC is a *linguistic*, not a cognitive constraint on VP-meanings. There is no cognitive obstacle to thinking of an event in which a box opens up as a result of its arrival, or a person getting sick as a result of ascension. These are perfectly possible scenarios which are easy to grasp; yet they cannot be linguistically coded in the direct way that is intended in (32).

The USCC is quite specific. It does not rule out the cooccurrence of COL with depictive predicates (33a), nor does it rule out one change which is further specified by another predicate (33b). This is even possible when the first predicate is a resultative and the second one is a directional PP which is understood as specifying the COS (33c). Finally, COL and COS can happily co-exist in a sentence if they apply to different arguments (33d).

(33) a. Fred handed him the towel wet.
b. She kicked him out of the house through the back door.
c. The liquid froze solid into a crusty mass.
d. He loaded furniture onto the truck to exhaustion.

These and similar examples show that USCC is not a syntactic principle (it is insensitive to categories and word order). Rather, it is a semantic condition on linguistically admissible VP-meanings; a ban against predicating both COS and COL of the same argument, where the relevant predication relation may be either overt or

[10] The examples in (32)-(33) are taken from Goldberg (1991).

implicit.[11] Although it is obviously an interesting question why the USCC holds (and no less interesting – *where* in the grammar it holds), we will not attempt an answer here. Our goal is to demonstrate that it yields a novel explanation for the alternation of verbs of detaching, which has not been recognized before.

Recall that we have established in (28) a lexical difference between the alternating and non-alternating verbs.

(34) *Lexicalized meaning in verbs of detaching*
   a. Alternating verbs encode neither COS nor COL.
   b. Non-alternating verbs encode COL.

Exactly what is the nature of the COL encoded by non-alternating verbs like *remove* and *expel*? Quite simply, it is the movement of the Stuff *away* from the Location. This COL is scalar in virtue of the reference point – the Location – from which it can be measured. Like other directed motion verbs, non-alternating verbs of detaching fall into two subclasses: Those involving a two-point scale and those involving a multiple-point scale.

(35) a. Gil talaš et ha-masmer me-ha-kir. *two-point scale*
   Gil ripped.out ACC the-nail from-the-wall
   'Gil ripped the nail out of the wall.'

   b. hem hirxiku ota me-ha-šemeš. *multiple-point scale*
   they distanced her from-the-sun
   'They distanced her from the sun.'

Consider next PP_{Stuff} in frame B. This, we argued, is a resultative phrase (ResP) expressing a deprivational COS: "be without Stuff" (see (17) above). Note that this type of COS is always mapped onto a two-point scale: "be with" vs. "be without". Adding

[11] The USCC should be kept apart from the Manner/Result Complementarity (MRC) studied in Levin & Rappaport (2008). The latter restricts *roots*, not VPs, from encoding both a manner component and either COS or COL. L&R's suggestion is to view manner as "nonscalar change" and COL/COS as two varieties of "scalar change" (the insight we adopt here). Clearly, though, a VP may express both types of change via directional or resultative phrases, as L&R point out for English (Hebrew patterns alike).

i. Marie sponged the table clean.
ii. An old woman hobbled in from the back.

L&R mention that Manner/Result Complementarity does seem to apply at the VP level in Romance languages, blocking the literal equivalents of (i)-(ii). We wish to remain neutral on the status of Manner/Result Complementarity, as it does not bear directly on the alternation of verbs of detaching, contra Levin & Rappaport's (1991) suggestion (see the next section).

this ResP to a root that already encodes a COL, like non-alternating verbs of detaching, violates the USCC. This is why this verb class fails to occur in frame B.

(36) a. * Gil talaš et ha-kir me-ha-masmer.
Gil ripped.out ACC the-wall from-the-nail
'Gil ripped the wall of the nail.'

b. * hem hirxiku et ha-šemeš mimena.
They distanced ACC the-sun from.her
'They distanced the sun of her.'

On this account, (36a-b) are no different from (37), where a resultative AP fails to modify the object of a directed motion verb.

(37) a. * John brought the machine broken.
[≠ The machine got broken as a result of John's bringing it]
b. We unloaded the boxes open.
[≠ The boxes opened as a result of our unloading them]

Indeed, non-alternating verbs that may occur without PP_{Loc} still resist a resultative AP, precisely because the COL meaning is lexicalized in the root and does not depend on the presence of PP_{Loc} (cf. (27)). (38a-b) are thus captured together with (36a-b) (note that only depictive readings are possible in (38)).[12]

(38) a. The doctor dislodged the bone (from my throat).
b. The doctor dislodged the bone (*twisted).
[≠ The bone got twisted as a result of the doctor dislodging it]
c. She uprooted the plant (from the soil).
d. She uprooted the plant (*dead).
[≠ The plant died as a result of her uprooting it]

On the other hand, alternating verbs encode no scalar change – neither COL or COS. For this reason they are compatible with both frames A and B. Each frame expresses a single scalar change (via the PP argument).

[12] This cannot be tested in Hebrew, which lacks resultative APs altogether.

(39) a. Dan nigev et ha-avak me-ha-madaf.
Dan wiped ACC the-dust from-the-shelf
'Dan wiped the dust off the shelf.'

b. Dan nigev et ha-madaf me-ha-avak.
Dan wiped ACC the-shelf from-the-dust
'Dan wiped the shelf of the dust.'

c. Rina saxta et ha-mic me-ha-limon.
Rina squeezed ACC the-juice from-the-lemon
'Rina squeezed the juice from the lemon.'

d. Rina saxta et ha-limon me-ha-mic.
Rina squeezed ACC the-lemon from-the-juice
'Rina squeezed the lemon of juice.'

We further predict that not only resultative PP_{Stuff} but also resultative APs would be able to modify DP_{Loc} with alternating verbs, in contrast to (38). The prediction is borne out.

(40) a. John wiped the table clean.
b. Make sure you don't squeeze the lemon dry too soon.
c. The interrogators stripped him naked.

We think that this account for the alternation found with verbs of detaching qualifies as a genuine explanation. It ties an independently established semantic contrast between alternating and non-alternating verbs (namely, the presence/absence of a COL meaning component in the root) to the USCC, which is a principle of general validity, quite independently of our concerns. It covers not only the facts of the alternation itself but also the general distribution of resultative and directional PPs in VPs containing verbs of detaching (all the data in (36)-(40)). Finally, it relies on no language-specific assumptions, which may fail to generalize crosslinguistically. Indeed, this is one of the problematic aspects of Levin & Rappaport's (1991) account, to which we now turn.

5. English: Levin & Rappaport (1991)

In this section we look more closely at English verbs of detaching. Our discussion critically examines Levin & Rappaport's (1991) important study of these verbs. In section 5.1 we evaluate L&R's empirical claims – in particular, their delineation of the

alternating class. In section 5.2 we consider their theoretical account. On both fronts, we believe that L&R's conclusions call for revision, although we do not pretend to offer the final word on these issues.

5.1 What is the alternating class in English?

L&R include exactly four verbs in the alternating class: *clean, clear, empty* and *drain*.[13] All four verbs, according to L&R, encode a resultant state. The non-alternating verbs fall into two subclasses: *wipe*-verbs, which encode a means component (manner or instrument), and *remove*-verbs, which encode neither means nor result (see also Levin 1993:122-126). L&R mention that some *wipe*-verbs may occur in frame B, but when they do, they are "bleached" from their manner/instrument component, essentially meaning 'clear' or 'empty'. Levin (1993:126) writes: "Occasionally, these verbs are found with a bare *of* phrase, but only if the manner or means meaning component is lost or at least less salient".

This narrow characterization of the alternating class is at odds with other sources. Hook (1983) lists 18 verbs in this class beyond L&R's four verbs: *milk, bleed, plunder, loot, cleanse, shear, shave, gut, cull, evacuate, purge, render, abstract, sap, strip, trim, wring, wash*. He provides several examples of alternating verbs occurring in frame B.

(41) a. I stripped the tree of its bark.
b. I trimmed the meat of fat.
c. The high tides of April washed Waimea Beach of seaweed and debris.

Note that the manner meaning component of the verbs in these examples is fully invoked (or, at least, need not be suppressed).

A web search yielded more examples of *wipe*-verbs occurring in frame B without losing their manner component.

(42) a. Spring is here and the weather is getting warmer, which means it's time to shear the sheep of their wool coat.
b. I guess you could also shave the dog of all hair.
c. The mayor has had the order to evacuate the village of men between 16 and 45 . The women can stay.
d. If you are highly sensitive, it is a good idea to take damp wipes with you, to wipe the table of any potential nut traces when you arrive.

[13] *Drain* is added to the other three verbs in the appendix to Levin & Rappaport (1991). See also Levin (1993:124).

Mahmoud (2003) adds to the list of alternating verbs *scrub, shovel, scrape, rinse, comb, filter, mop and prune*. Some of his examples, reportedly confirmed by native speakers, are given below. Notice, once again, the presence of the manner meaning component.

(43) a. John washed his hands of grease.
b. John wiped the glass of fingerprints.
c. John scrubbed the car of rust.
d. John shoveled the pavement of snow.
e. He rinsed the cup of stains.
f. We filtered the water of dirt.

Our own queries to English speakers revealed considerable variability as to the acceptability of *wipe*-verbs in frame B (in contrast, *clear*-verbs are uniformly accepted and *remove*-verbs are uniformly rejected). In fact, no two speakers agreed on all the verbs, and many disagreements were found. The dialectal/idiolectal variation in this domain deserves a separate study; here we only offer some preliminary observations.

Some speakers found the examples better when the stuff was inalienably possessed by the location (44a). Sometimes any overt marking of possession was enough to improve the example, not necessarily inalienable possession (44b). A third factor that seemed to improve the examples was "maximizing" of the stuff, so that in the resultant state the location is unmistakably without it (44c).

(44) a. He wiped his face of sweat / *chocolate.
b. He mopped the floor of *(its) dirt.
c. He shoveled the pavement of *(every bit of) snow.

We should stress that these factors are highly unstable – both across and within speakers. There did not seem to be a single "trick" that could improve every instance of frame B with every verb of detaching, for every speaker. On the other hand, and this is quite significant, no speaker was as restrictive as Levin & Rappaport's characterization of *wipe*-verbs.

Whatever the right analysis of the fine semantic factors that affect the acceptability of *wipe*-verbs in frame B (for some speakers, to some degree), the general point we would like to make is that L&R's narrow characterization of the alternation should be revised. The alternating class of verbs of detaching in English is essentially quite close to its Hebrew counterpart. Although *wipe*-verbs occur in frame B with some

difficulty for some English speakers, they readily occur in that frame for other English speakers, and they certainly do for all Hebrew speakers.

5.2 L&R's account the alternation

Granted that the English facts are debatable, one may still ask whether L&R's analysis of the facts they report (which may well represent a very restrictive dialect) is valid. In this section we highlight some problematic aspects of this analysis.

Let us assume that only four verbs (the *clear*-verbs) occur in Frame B in English. L&R's paper, in fact, offers three independent explanations (in three different places) for this fact. We cite them in turn.

> "If we were to coin an innovative verb from a newly invented instrument used for removal, we would predict that this verb will behave like the verb *mop*... The small size of the *clear* class, when compared with the *wipe* class, probably reflects the fact that this very productive strategy for adding to the verb lexicon does not create verbs of the *clear* type. Assuming these verbs are deadjectival, it could be attributed to the absence of a productive process of creating verbs from adjectives. And furthermore, even if such a process were available, there is not continuing extensive growth in the adjective lexicon the way there is in the noun lexicon" (p. 132).

> "Only the *clear* verbs are found in the *of* variant... This property of the *clear* verbs can be explained in part by noting that the set of adjectives related to the *clear* verbs can each take a complement expressed by means of an *of* phrase (*clean of snow, clear of bugs, empty of water*)" (p. 141).

> "The fact that an *of* phrase cannot appear with the *wipe* verbs can be attributed to the fact that these verbs do not lexically specify a resultant state, let alone a resultant state that the *of* phrase can be associated with" (p. 143).

We summarize L&R's three proposals below.

(45) a. *Clear* verbs are deadjectival, *wipe* verbs are either denominal or underived.
b. The *of* phrase is licensed by the adjectival base of *clear* verbs.
c. *Clear* verbs specify a resultant state, *wipe* verbs do not.

Consider (45a). The first problem with it is that it only accounts for three out of the four verbs – *drain* is not deadjectival. Furthermore, the proposal does not extend to Hebrew, a root-template language, where none of the alternating verbs can be said to be deadjectival; both verbs and adjectives are derived from roots. The deeper problem with the proposal in (45a), however, is that, as it stands, it offers no insight into the nature of the dichotomy: *How* does the verbal alternation depend on a deajectival verb? What causal role is played by the adjectival base in licensing frame B? This issue is not addressed in the context where proposal (45a) is made.

(45b) does take us a step forward. It suggests that the *of*-PP in frame B is licensed by the adjectival base of the verb; therefore, *wipe*-verbs, which are not deadjectival, would not take an *of*-PP.

The problem here is noted by L&R themselves. An *of*-PP occurring with the adjectival base is not sufficient to license an *of*-PP with the verb (e.g., *bare*). Nor is it close to necessary: the entire class of *deprive*-verbs (see section 7) occur with *of*-PPs although none of them is deadjectival. Thus, although L&R are correct to point out that (3 out of 4 of) the *clear*-verbs are deadjectival, and that their base adjectives take *of*-PPs, it is not obvious how these observations translate to a causal explanation of the absence of *of*-PPs with *wipe*-verbs.

Turning to (45c), we are puzzled by the underlying assumption that resultative phrases (and the *of*-PP in frame B is such a phrase) can only be added to verbs that "lexically specify" a resultant state. This certainly need not be the case; none of the verbs in (46) lexically specifies a resultant state, yet all are compatible with resultatives.

(46) a. He pounded the metal flat.
b. John laughed himself silly.
c. She beat him black and blue.

Indeed, as L&R note, *wipe*-verbs readily accept resultative APs.

(47) a. Kay wiped the counter clean.
b. Sylvia shovelled the walk clear.

It seems that lack of a lexically specified resultant state does not, in itself, exclude resultative predication. Rather, what needs to be explained is why *wipe*-verbs tolerate resultative APs but not resultative *of*-PPs (if the contrast is real; see section 5.1). The problem is more acute for L&R because they assume a process of "lexical extension", which allows *clear*-verbs to become verbs of removal (p. 140), suitable for frame A.

What, then, blocks a parallel lexical extension of *wipe*-verbs (or, for that matter, *remove*-verbs) that would make them suitable for frame B? The process is not well-defined enough to yield precise predictions in this domain. Finally, as far as we can tell, the Hebrew counterparts of *wipe*-verbs do not specify a resultant state any more than the English verbs, yet freely occur with PP_{Stuff} in frame B.

Let us stress that the English data, as surveyed in section 5.1, pose a challenge to any account, including our own. The point of the present section, however, is that Levin & Rappaport's account is problematic on *analytic* grounds, even if their data are flawless. The ultimate analysis of the English facts will have to wait until these facts are thoroughly documented, a task beyond the goals of this paper.

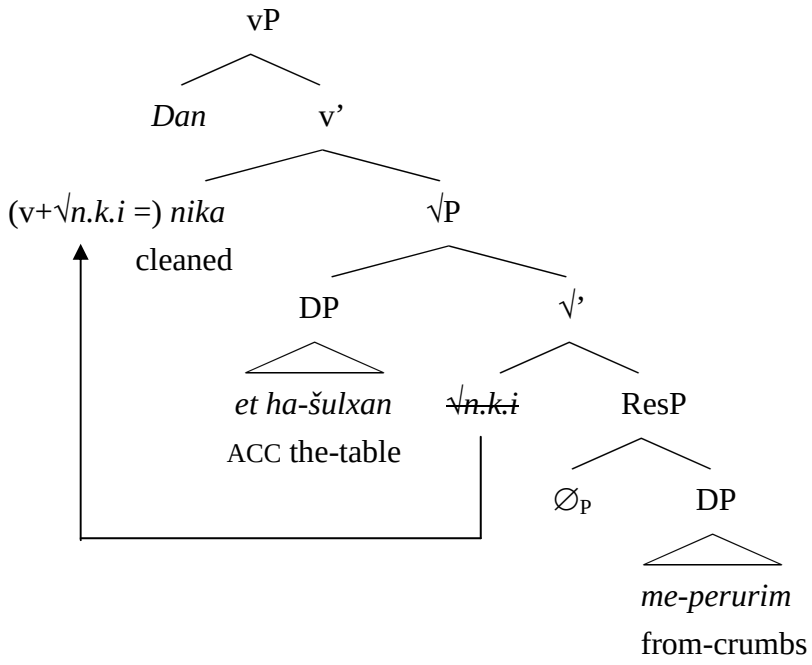
6. A Null P in PP_{Stuff}

At this point, we already know three things about PP_{Stuff} in frame B.

(48) a. PP_{Stuff} is a resultative phrase, delimiting a COS event.
b. PP_{Stuff} roughly means: WITHOUT STUFF.
c. The overt preposition in PP_{Stuff} (Hebrew *me-*, English *of*, Danish *for*, etc) is *not* the locus of the meaning 'WITHOUT' (section 2.3).

One natural conclusion from the conjunction of these propositions is that PP_{Stuff} is headed by a null P, Res^0, whose meaning approximates the preposition *without* (see fn. 22). The structure of frame B, to recall, is the following.

(49) Frame B



Of course, nothing in the analysis we propose entails that PP_{Stuff} *must* be headed by a null preposition. The fact that it is is an empirical discovery, not a theorem. Indeed, for all we know, there may be languages where Res^0 in PP_{Stuff} is phonetically overt. Our preceding analysis of frame B is independent of the phonetic status of Res^0. Nevertheless, we find it highly significant that two independent sources of evidence converge on a central piece of our analysis – the ResP structural layer: both the COS construal, which (as argued above) cannot be traced to the overt P in the relevant languages, and the peculiar syntactic behavior of PP_{Stuff}, to which we turn below. If the syntactic evidence had not pointed to a null P, the lexical semantics assigned to *me-* and *of* would have been considerably less appealing.

PP_{Stuff} displays three peculiar restrictions that are readily explained on the assumption that it is headed by a null P. First, it resists pronominalization in Hebrew. Second, it resists scrambling. Third, it resists Ā-movement. To our knowledge, these facts have never been noticed before. We consider them in turn.

6.1 PP_{Stuff} cannot be pronominalized

When a prepositional object in Hebrew is pronominalized, it must be null (i.e., *pro*), and the preposition is inflected to reflect its features. For example:

(50) a. Inflections of *be-* 'in': *bo* 'in him', *ba* 'in her', *ba'hem* 'in them', etc.
b. Inflections of *me-* 'from': *mimeno* 'from him', *mimena* 'from her', *mehem* 'from them', etc.

In frame A, the locative source PP can be freely pronominalized, giving rise to the forms indicated in (50b). The examples in (51a-b) illustrate pronominalization of PP_{Loc} in left dislocation and in relative clause contexts, respectively.

(51) ✓*Pronominal PP_{Loc}*

a. ha-argazim ha-ele, piniti et ha-ca'acu'im mehem kvar mizman.
the-boxes the-these clear.1SG ACC the-toys from.them Already long.ago
'These boxes, I've already cleared the toys from them a long time ago.'

b. ha-yeled še-hifašateti et ha-bgadim mimeno mitkale'ax. axšav
the-boy that-undressed.1SG ACC the-clothes from.him showers now
'The boy that I took off the clothes from is taking a shower now.'

Strikingly, PP_{Stuff} in these contexts cannot be pronominalized, although the expected forms are the same. This is true even if one keeps the reference of the PP constant – *the boxes* in (51a)/(52a) – and simply changes it from location to stuff.[14]

(52) **Pronominal PP_{Stuff}*

a. * ha-argazim ha-ele, piniti et ha-xeder mehem kvar mizman.
the-boxes the-these clear.1SG ACC the-room from.them already long.ago
'These boxes, I've already cleared the room from them a long time ago.'

b. * ha-bgadim še-hifšateti et ha-yeled mehem ba-kvisa axšav.
the-clothes that-undressed.1SG ACC the boy from.them in.the-laundry now
'The clothes that I undressed the boy of are in the laundry now.'

[14] (52a-b) only admit the absurd interpretations where the room is cleared from the boxes and the boy is taken off from the clothes – that is, the PP is coerced into a location construal. This further confirms the point in the text.

Importantly, the same stuff DPs can be readily pronominalized when occurring as direct objects in frame A.[15]

(53) ✓*Pronominal* DP_{Stuff}

a. ha-argazim ha-ele, piniti otam me-ha-xeder kvar
the-boxes the-these, clear.1SG them from-the-room already
mizman.
long.ago
'These boxes, I cleared them from the room a long time ago.'

b. ha-bgadim, še-nizkarti matay hifšateti otam
the-clothes that-recalled.1SG when undressed.1SG them
me-ha-yeled, ba-kvisa axšav.
from-the-boy in.the-laundry now
'The clothes that I recalled when I took off from the boy are in the laundry now.'

Thus, the observed restriction is neither attached to stuff arguments per se nor to *me*-PPs per se. It is singularly expressed only when the stuff argument is realized as a *me*-PP. Notice that the minimal pairs constructed above also rule out any attempt to attribute the pronominalization restriction either to animacy or to word order: PP_{Loc} need not be animate or adjacent to the verb in order to be pronominalized. In fact, (52a-b) remain ungrammatical even when the order of DP_{Loc} and PP_{Stuff} is reversed. We should mention that we are unaware of any parallel restriction on the expression of pronominalized PPs elsewhere in the grammar of Hebrew.[16]

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[15] In Hebrew, resumptive pronouns as direct objects in relative clauses are allowed but dispreferred whenever a gap is possible. This is why we introduced an island inside the relative clause in (53b).

[16] The same facts can be replicated with mass nouns in the pronominalized position. In question (i) below, *rice* functions as a location, from which the damaged grains are separated. In question (ii), it is treated as the stuff that the table is cleaned of. These interpretations are only fixed once the answers are provided, at which point it becomes clear that pronominalizing the *rice*-PP was possible in (i) but not in (ii).

i. A: ha-orez ha-ze, ma hifradeta mimeno?
the-rice the-this, what seperate.2SG from.it
'This rice, what did you separate from it?'

B: et ha-gargerim ha-pgumim.
ACC the-grains the-damaged
'The damaged grains.'

ii. A: ha-orez ha-ze, ma nikita mimeno?
the-rice the-this, what cleaned.2SG from.it
'This rice, what did you clean of it?'

B: * et ha-šulxan.

Why should PP_{Stuff} contrast with other PPs in being unable to pronominalize? Compare the structure of the result PP (=PP_{Stuff}) in (49) with that of locative source PPs.

(54) a. PP_{Res}: [$_{PP}$ Res^0 [$_{DP}$ *me*-D^0 NP]]
b. PP_{Loc}: [$_{PP}$ *min*/*me*- [$_{DP}$ D^0 NP]]

The contrast of interest is in the status of *me*- – a contentless case marker with PP_{Stuff}, a contentful P with PP_{Loc}. Strictly speaking, then, there is no *me*-PP in frame B – only a *me*-DP. *me*- projects a PP only when it bears semantic content, in frame A.

Recall now that pronominalized PPs are, in effect, inflected prepositions in Hebrew. As such, they are stored in the lexicon, each member of the paradigm with its category (P), denotation (**from'**) and ϕ-features.

(55) *mimeni:* [P, **from'**, 1SG]
mimeno: [P, **from'**, 3SG.M]
mehem: [P, **from'**, 3PL]
etc.

Suppose now that these are the *only* entries of pronominalized *me*-. In particular, there are no D entries for the pure case marker *me*- (e.g., [D, oblique, 3PL]). This amounts to claiming that *me*- as a preposition is a lexical morpheme, but *me*- as a pure case marker is not; rather, it is a morphological reflex of case assignment by a higher P (see Botwinik-Rotem and Terzi 2008). This implies that the DP portion of (54a) would not receive any proper spellout whenever the DP is a pronoun: No lexical morpheme exists in Hebrew that can spell out a pronoun case-marked with *me*-. There are *me*-PPs, there are lexical DPs marked with *me*-, but no pronominal *me*-DPs.

We take it that the different lexical status of the P *me*- and the case marker *me*- is at least plausible, perhaps reflecting a general split.[17] What is important is that the proposal only makes sense on the assumption that the *me*-DP is introduced by a null preposition (namely, Res^0). Only if *me*- is not a preposition itself does the need arise for

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ACC the-table
'The table.'

[17] Francez (2006) discusses another asymmetry between pronouns and full NPs in Hebrew, manifested in dative contexts: The dative marker *le*- can mark either Possessor or Location with full NPs, but only a Possessor with pronouns. Francez notes that pronominal systems, in general, express more distinctions than the general class of NPs, an observation consistent with our own findings on *me*-. Interestingly, Francez distinguishes three classes of ditransitive "dative" verbs: Verbs of giving (e.g., *maxar* 'sell'), which ecode Change of Possession; verbs of caused directed motion (e.g., *daxaf* 'push'), which encode Change of Location; and verbs of transfer (e.g., *šalax* 'send'), which are underspecified as to the type of change they convey. This tripartite division corresponds nicely to our three classes of "semantically inverse" verbs of detaching (COS, COL, or neither).

a distinct preposition in the structure, which both encodes the relevant semantic result (i.e., WITHOUT) and assigns the oblique case to its DP complement. Thus, the failure of PP_{Stuff} to pronominalize serves as an argument for its being headed by a null P.

6.2 PP_{Stuff} is immobile

There is a range of crosslinguistic phenomena that can be unified under the following generalization.

(56) If $X^0 = \varnothing$ (phonetically null), then XP cannot be moved.

Landau 2007 argues that the relevant constraint is not on movement per se, but on the satisfaction of (a generalized) EPP. Certain functional heads – typically, those encoding discourse functions, topic/focus and force – are endowed with a [P] feature, which is a selectional feature at PF. [P] selects a phonetically overt specifier, provided by either external Merge or internal Merge (Move). Since p-selection (selection at PF) is a head-to-head relation, [P] effectively requires the *head* of its specifier (ZP below) to be overt.

(57) $*[_{HP}\,[_{ZP}\,[_{Z}\,\varnothing]\,\ldots]\,[_{H'}\,H_{[P]}\,\ldots]]$

The advantage of this PF-based formulation of the EPP is that it straightforwardly extends to classical effects of the "representational ECP" (Empty Category Principle). Thus, bare nouns in Romance are excluded from subject positions because they are headed by a null D; QPs headed by a null Q are equally excluded; sentential subjects headed by a null C cannot occupy subject/topic positions; adjuncts headed by a null P are excluded from initial positions (plausibly, p-selected by Top^0); indirect objects headed by a null P resist displacement in double object constructions; and lastly, the head of fronted categories – DPs, PPs and VPs – may be phonologically doubled if it has to satisfy two distinct [P] features, as in predicate clefts and split topicalization constructions (see Landau 2007 for data and discussion, drawing on Kayne 1981, Stowell 1981, Czepluch 1982, Contreras 1986, Emonds 1987, McCawley 1988, Longobardi 1994, den Dikken 1995, Landau 2006, to appear).

Given our claim that PP_{Stuff} is headed by a null head (namely, Res^0), we expect it to exhibit distributional restrictions that are characteristic of such phrases. Indeed, this is what we find, in two independent contexts. We now turn to these striking facts.

6.2.1 No scrambling

The order of internal arguments within the Hebrew VP is rather flexible. Although the most neutral order is one in which the direct object precedes indirect objects and PPs, the reverse order is neither ungrammatical nor awkward. Importantly, a DP object need not be heavy in order follow a PP object.

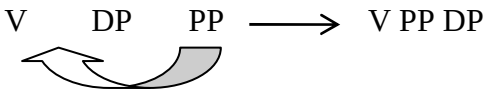
(58)	a.	henaxti	et	ha-sefer	al	ha-šulxan.		*V DP PP*
		put.1SG	ACC	the-book	on	the-table		
	b.	henaxti	al	ha-šulxan	et	ha-sefer.		*V PP DP*
		'I put that book on the table.'						

(59)	a.	mileti	et	ha-dli	be-xol.			*V DP PP*
		filled.1SG	ACC	the-bucket	with sand			
	b.	miletibe-xol	et	ha-dli.				*V PP DP*
		'I filled the bucket with sand.'						

On standard assumptions, one of the word orders is basic and the other one is derived. Which one is basic? Belletti and Shlonsky (1995, henceforth B&S) provide a useful observation. They point out that ditransitive idioms in Hebrew always occur in the "V DP PP" order and never in the "V PP DP" order. This follows if the former is basic and the latter is derived by some movement operation – which is excluded from applying to idiom chunks.

Assuming that "V DP PP" is the basic order, then, how is "V PP DP" derived? Recall that the DP need not be heavy in the derived word order. This means that Heavy NP Shift (HNPS) is not involved in the alternation.[18] B&S propose that PPs may scramble over DPs inside the extended projection of the verb.

(60) *PP-scrambling in Hebrew*



Plausibly, scrambling has an effect on information structure, although we suspect the effect is not uniform.[19] We may assume that the scrambled PP lands in the specifier position of some FP, remaining neutral on the semantic/pragmatic content of the head F.

[18] This is not to say that Hebrew lacks HNPS altogether. Arguments (either DPs or PPs) may follow sentential complements only when heavy. The point is that an independent derivation must be available to those argument shifts which are indifferent to heaviness.

[19] Actually, B&S refer to this operation as "PP preposing", reserving the term "PP scrambling" to the Italian counterpart, which is more restricted. The terminological mismatch with our discussion is innocuous. B&S futher argue that the fronting of PPs in Hebrew is essentially focus movement. We do

In the terms introduced above, the fact that F requires an overt specifier reflects the fact it has the "EPP property", or more simply, it bears a [P] feature. Following that line, the prediction is that PPs headed by a null P will resist scrambling (since their null head violates the p-selectional requirement of $F_{[P]}$). Indeed, the prediction is fully confirmed with verbs of detaching. While PP_{Loc} may freely scramble over DP_{Stuff} in frame A, PP_{Stuff} may not scramble over DP_{Loc} in frame B.[20]

(61) Moses erased the scribbles from the blackboard.

a. *Frame A*
   Moše maxak et ha-kiškušim me-ha-lu'ax.
   Moše erased ACC the-scribbles from-the-blackboard
b. *Scrambled Frame A*
   Moše maxak me-ha-lu'ax et ha-kiškušim.
c. *Frame B*
   Moše maxak et ha-lu'ax me-ha-kiškušim.
   Moše erased ACC the-blackboard from-the-scribbles
d. * *Scrambled Frame B*
   * Moše maxak me-ha-kiškušim et ha-lu'ax.

(62) Dan squeezed all the juice from the orange.

a. *Frame A*
   Dan saxat et kol ha-mic me-ha-tapuz.
   Dan squeezed ACC all the-joice from-the-orange
b. *Scrambled Frame A*
   Dan saxat me-ha-tapuz et kol ha-mic.
c. *Frame B*
   Dan saxat et ha-tapuz me-kol ha-mic.
   Dan squeezed ACC the-orange from-all the-juice
d. * *Scrambled Frame B*
   * Dan saxat me-kol ha-mic et ha-tapuz.

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not fully agree with the judgments they report in support of that claim, but will not take a position on the matter as it is not directly relevant to our present concerns.

[20] The (d) examples in (61)-(63) are marginally acceptable with very heavy contrastive stress on the scrambled PP. Nothing of the sort is required in the (b) examples or in (58b)/(59b). Of course, coerced "reversals" (where PP_{Stuff} is understood as PP_{Loc}) may emerge, giving rise to deviant interpretations.

(63) The army evacuated the settlers from the strip.

a. *Frame A*
ha-cava pina et ha-mitnaxalim me-ha-recu'a.
the-army evacuated ACC the-settlers from-the-strip
b. *Scrambled Frame A*
ha-cava pina me-ha-recu'a et ha-mitnaxalim.
c. *Frame B*
ha-cava pina et ha-recu'a me-ha-mitnaxalim.
the-army evacuated ACC the-strip from-the-settlers
d. * *Scrambled Frame B*
* ha-cava pina me-ha-mitnaxalim et ha-recu'a.

Not surprisingly, non-alternating verbs, which only occur in frame A, pattern with alternating verbs in frame A. Namely, PP_{Loc} may freely scramble.

(64) Dan took the hat off his head.

a. *Frame A*
Dan hesir et ha-kova me-rošo.
Dan removed ACC the-hat from-head.his
b. *Scrambled Frame A*
Dan hesir me-rošo et ha-kova.
c. * *Frame B*
* Dan hesir et rošo me-ha-kova.
Dan removed ACC head.his from-the-hat

To summarize, PP-scrambling, which is a fully productive process in Hebrew VPs, fails to apply to just one type of PP: PP_{Stuff} in verbs of detaching. This strongly supports the idea that this type of PP is syntactically special precisely in the sense proposed above: namely, it is headed by a null P.

6.2.2 No Ā-movement

The second type of environment that brings out the special syntax of PP_{Stuff} is Ā-movement. Just like the English inner object in double object constructions, PP_{Stuff} resists this kind of movement. And just like the the former case has been traced to a null

preposition (Czepluch 1982, Kayne 1984, den Dikken 1995), we propose to trace the latter to a null preposition.

Consider first *wh*-questions. A clear contrast emerges between PP_{Loc}, which can be questioned, and PP_{Stuff}, which cannot. The answers given below the questions are intended to facilitate the relevant readings.

(65) *Questioning PP_{Loc} in frame A*

A: me-eyfo/me-eyze argazim rokanta et
from-where/from-which boxes emptied.2SG ACC
ha-ca'acuim ha-ele?
the-toys the-these
'From where/which boxes did you empty these toys?'

B: me-ha-argazim še-ba-salon.
from-the-boxes that-in.the-living.room
'From the boxes in the living room.'

(66) *Questioning PP_{Stuff} in frame B*

A: *mi-ma/me-eyze ca'acu'im rokanta et ha-argazim
from-what/from-which toys emptied.2SG ACC the-boxes
še-ba-salon?
that-in.the-living.room
'Of what/which toys did you empty the boxes in the living room?'

B: me-ha-ca'acu'im ha-xadašim.
from-the-toys the-new
'Of the new toys.'

Note that the form of the *wh*-word is not at issue. A phrase headed by *eyze* 'which' is fine in PP_{Loc} but not in PP_{Stuff}. Further examples illustrate that animacy (*who* vs. *what*) is also not at stake.

(67) a. me-mi hi hifšita et ha-bgadim ha-retuvim? (me-ha-tinok).
from-who she undressesd ACC the-clothes the-wet (from-the-baby)
'From whom did she take off the sweater?' (from the baby)

b. * mi-ma hi hifšita et ha-tinok? (me-ha-bgadim ha-retuvim)
from-what she undressesd ACC the-baby (from- the-clothes the-wet)
'Of what did she undress the baby? (of the wet clothes)'

Another type of Ā-movement is topicalization, which, again, is barred from PP_{Stuff}. Note that the source versions of the (b) examples below (with PP_{Stuff} following DP_{Loc}) would be perfect.

(68) ✓*topicalized* PP_{Loc} ; **topicalized* PP_{Stuff}

a. me-kol ha-xacer, Rina gerfa et ha-alim.
from-all the-yard Rina raked ACC the-leaves
'From all of the yard, Rina raked the leaves.'

b. * me-kol ha-alim, Rina gerfa et ha-xacer.
from-all the-leaves, Rina raked ACC the-yard
'All the leaves, Rina raked from the yard.'

(69) ✓*topicalized* PP_{Loc} *; **topicalized* PP_{Stuff}

a. me-mištax ha-šayš, hu nigev et perurey ha-oxel.
from-surface the-marble he wiped ACC crumbs.of the-food
'From the countertop, he wiped the food crumbs.'

b. * me-perurey ha-oxel, hu nigev et mištax ha-šayš.
from-crumbs.of the-food he wiped ACC surface marble
'Food crumbs, he wiped from the countertop.'

We discussed above how classical ECP violations (i.e., the ban on bare subject NPs in Romance) follow from the view of the EPP as a selectional requirement imposed at PF. We would now like to suggest a parallel account of the ban on Ā-movement of PP_{Stuff}. While the selecting head involved in ECP violations is T, the selecting head involved in the Ā-movement violations is C or Top. Both heads bear a [P] feature, which selects a phonetically visible head in their specifier position. PP_{Stuff}, being headed by the null Res^0, fails to meet this requirement.[21] Thus, similarly to the ban on PP_{Stuff} scrambling, the ban on PP_{Stuff}-Ā-movement boils down to the excluded scenario in (57).[22]

[21] Although relative clauses also involve Ā-movement, they cannot be used to illustrate the restriction at hand. The presence of a preposition in PP_{Stuff} forces a resumptive pronoun under relativization (Hebrew

7. Verbs of deprivational possession: Crosslinguistic whims

In this last section we turn our attention to another class of verbs of detaching, which we have not yet discussed. This class presents a curious case of crosslinguistic divergence, as they are mapped in Hebrew and English to opposite structures. The Hebrew class is given below. For the English class, see Levin (1993:129).

(70) Hebrew Verbs of deprivational possession
zika ('acquit'), *nika me-ašma* ('clean of guilt'), *patar* ('exempt'), *šixrer* ('free, relieve'), *ripe* ('cure'), *tiher* ('purify, purge'), *nišel* ('dispossess'), *rošeš* ('impoverish, deplete'), *ga'al* ('redeem'), *gamal* ('wean, detoxify').

These verbs occur in the frame V DP PP, where DP is human and PP denotes some abstract quality or mental attribute. The two arguments do not alternate.

(71) a. ha-giluyim ha-xadašim šixreru et Yosi me-ha-axrayut
the-findings the-new relieved ACC Yosi from-the-responsibility
la-ason.
to.the-disaster
'The new findings relieved Yosi of responsibility to the disaster.'

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lacking P-stranding). However, a pronominalized PP_{Stuff} is ruled out regardless of Ā-movement for the reasons discussed in section 6.1.

[22] Two confounding properties of English hamper the testing of potentially parallel restrictions on Ā-movement of PP_{Stuff}. First, pied-piping is highly disfavored by native speakers; second, English has the option of V+P reanalysis, which may, for all we know, apply to Res^0 as well. Thus, the (un)acceptability of a fronted *of*-PP may well be determined independently of the presence of a null P.

Independent evidence for a *negative* null P may come from NPI licensing (we are grateful to Tom Roeper for pointing out these facts to us). If frame B incorporates a negative preposition, Res^0, (roughly) meaning 'without', this preposition should reveal itself in the licensing of NPIs. In contrast, no such preposition is present in frame A, which therefore should disallow NPIs. The predicted contrast indeed holds true.

i. * John cleared any dishes from the table.
ii. John cleared the table of any dishes.

Notice that the negative licensor cannot inhere in the verbs themselves (unlike, e.g., *deny*, *refuse*), otherwise (i) and (ii) should not have displayed any contrast. We believe that there also is some evidence ruling out *of* as the source of the negativity (in line with the conclusions of section 2.3), although the data are again subtle, due to the complexities of pied-piping in English. A case for a null negative P in English is made by Baltin (2009), who argues that gerundive *from*-complements (of *refrain*, *prevent* etc.) are headed by a silent negative P, which he dubs AWAY. This preposition can materialize overtly before the source P *from* and license NPIs.

iii. He ran from (*any) friends.
iv. He ran *(away) from any discussion of his problems.

b. * ha-giluyim ha-xadašim šixreru et ha-axrayut
the-findings the-new relieved ACC the-responsibility
la-ason me-Yosi.
to.the-disaster from-Yosi

c. ha-trufa rip'a et Gil me-ha-ši'ul ha-xroni šelo.
the-medicine cured ACC Gil from-the-cough the-chronic his
'The medicine cured Gil of his chronic cough.'

d. * ha-trufa rip'a et ha-ši'ul ha-xroni (šelo) me-Gil.
the-medicine cured ACC the-cough the-chronic (his) from-Gil

In English, verbs of deprivational possession only occur in frame B (Hook 1983, Levin & Rappaport 1991).

(72) a. * The doctor cured the disease from Mary.
b. The doctor cured Mary of the disease.
c. * The court absolved all charges from him.
d. The court absolved him of all charges.

Levin & Rappaport propose that *deprive*-verbs in English negate some "inherent" relation between their arguments (inalienable possession in a broad sense), just like double object variants of *give*-verbs affirm that relation; "cause not to have" vs. "cause to have". Note, though, that the range of possessee DPs allowed in the latter verb class is much wider than what is allowed in the former class (e.g., *We sent/promised/served him a porcupine* vs. # *We defrauded/pardoned/purified him of a porcupine*). Although analyzed as COS verbs, *deprive*-verbs lack incohative counterparts, according to L&R, due to their agentivity. This is only partially true. Quite a few *deprive*-verbs allow a (nonagentive) Causer as an external argument, yet none of them has an incohative counterpart (*deprive, disabuse, ease, relieve, rid, rob, unburden*).

Nevertheless, we do not deny that *deprive*-verbs convey a strong intuition of "cause not to have". The interesting question, as always, is whether this intuition is couched in their grammatical encoding or simply in our world-knowledge about events of deprivation, defraudment etc. Recall the discussion of example (18). Although we may think that a cabinet from which all the documents have been removed has undergone some change of state, the grammar does not "think" so; *remove* is classified as a COL verb (**remove the cabinet of the documents*, **the removed cabinet* (where documents are removed)).

English seems to present no cause for hesitation: The fact that *deprive*-verbs only occur in frame B strongly suggests that they do lexically specify a COS. As frame A implies a COL component, inserting these verbs in frame A would violate the USCC (31). Thus, *deprive*-verbs are the mirror-image of *remove*-verbs, which lexically specify a COL (hence, resist frame B).

The data in (71), however, do not settle the issue for Hebrew. Because both PP_{Loc} in frame A and PP_{Stuff} in frame B are realized as a *me*-PP in Hebrew, we cannot tell which frame is exemplified in (71a,c) and which in (71b,d). As it turns out, the COS intuition leads us astray: surprisingly, the grammar of (71a,c) is the COL grammar of frame A.

All the relevant tests in Hebrew converge on this conclusion. We illustrate with one verb, but the pattern is uniform throughout the members of (70). First, *me*- alternates with *min* (73a); second, the PP can be pronominalized (73b); third, it can be scrambled to the left of the DP (73c); fourth, it can undergo Ā-movement (73d). In all these respects, it displays the freedom of PP_{Loc} in frame A and not the peculiar restrictions on PP_{Stuff} in frame B (cf. ex. (12)-(13), (51)-(52), (61)-(63), (65)-(69)).

(73) a. beyt ha-mišpat zika et Gil me-/**min** ha-išumim
the-court acquitted ACC Gil from the-charges
ha-xamurim.
the-serious
'The court acquited Gil of the serious charges.'

b. ha-išumim ha-xamurim, beyt ha-mišpat zika et Gil
the-charges the-serious the-court acquitted ACC Gil
mehem.
from.them
'The serious charges, the court acquited Gil of them.'

c. beyt ha-mišpat zika [$_{PP}$ **me-ašma**]$_i$ et Gil t_i.
the-court acquitted from-guilt ACC Gil
'The court acquited Gil of guilt.'

d. **me-eyze išumim** beyt ha-mišpat zika et Gil?
from-whichcharges the-court acquitted ACC Gil
Which charges did the court acquit Gil of?'

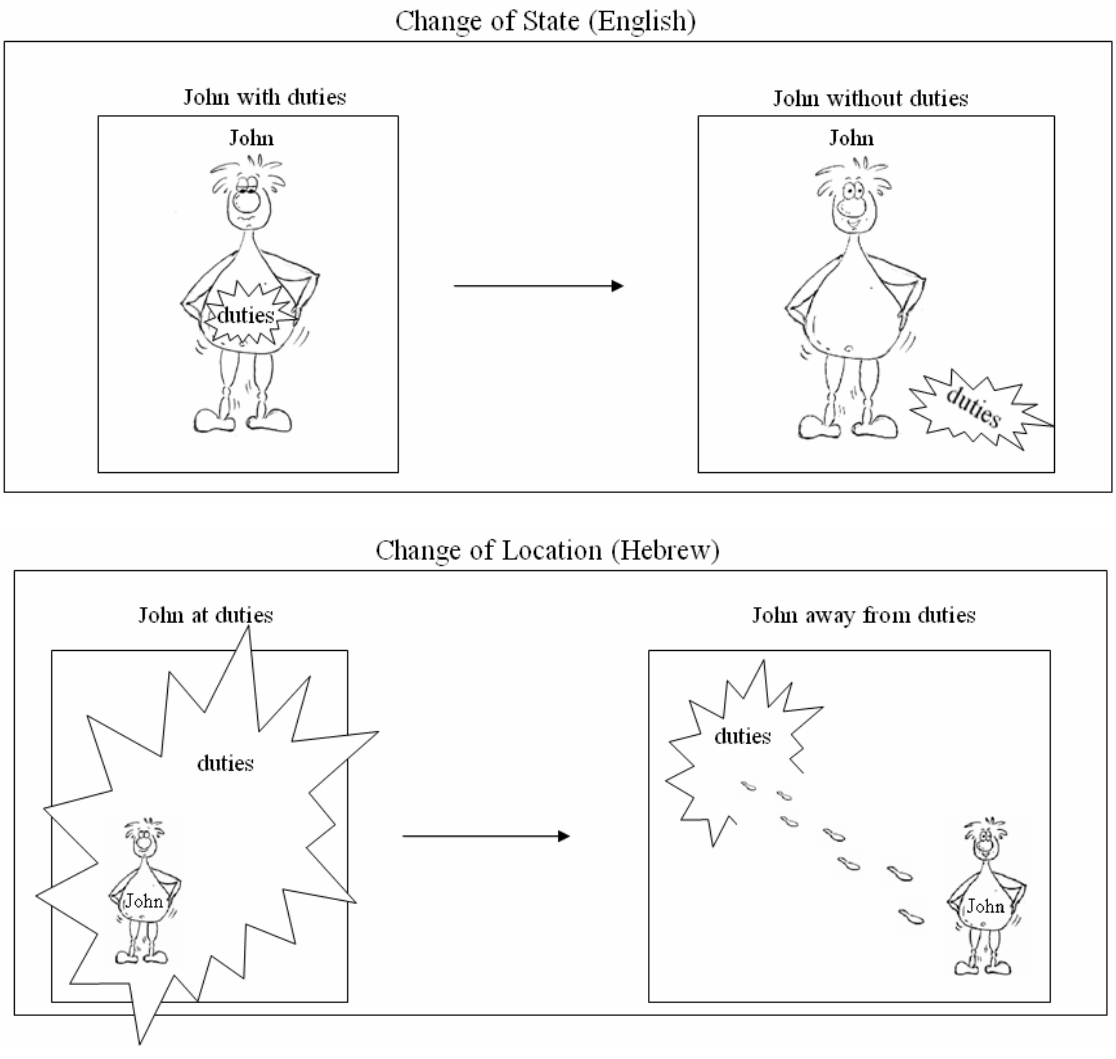
There can be little doubt, therefore, that verbs of possessional deprivation project a COL structure in Hebrew, and not a COS structure, as they do in English. The remaining question is what sense we can make of this divergence.

Once again, we let us emphasize the unreliable character of one's intuitions in this domain. Consider the English sentence (74a) and its Hebrew equivalent in (74b).

(74)	a.	They freed him of his duties.			*Frame B: COS*
	b.	hem	šixreru	oto me-xovotav.	*Frame A: COL*
		they	freed	him from-duties.his	

The event conceptualization underlying the English sentence is: They caused him to be without his duties (phrased, of course, in some vocabulary of semantic primitives). The event conceptualization underlying the Hebrew sentence is: They caused him to be not at (away from) his duties. Whereas 'duties' is conceptualized in the English as a stuff removed from a person, it is conceptualized in Hebrew as a location from which a person is removed. Indeed, we can replace *me-xovotav* in (74b) with *me-ha-kele* ('from prison'), bringing out this COL interpretation more vividly. The two different event schemas are diagramed below.

(75) *Event conceptualization of possessional deprivation: English vs. Hebrew*



Is there an a priori way to decide which is the "right" mapping for verbs of possessional deprivation? We think not. The choice does not inhere in the meaning of the verbs themselves. Precisely for this reason, it is open to crosslinguistic variation. Why does English project verbs of deprivational possession to COS structures and Hebrew to COL structures? This kind of question lies far beyond our current understanding. Perhaps English does not treat abstract entities (like guilt, responsibility etc.) as locations; perhaps Hebrew does not treat the "detachment" of such entities as change of state. These are speculations that merit further research, but even they, we should note, are open to ultimate *why*-questions.[23]

In fact, this point can be made on the basis of minimal pairs within the same language. *Evacuate* and *evict* practically describe the same event, yet the former is an alternating verb, the latter is not (only frame A); *liberate/emancipate* are only found in frame A, *free/relieve* only in frame B; *steal* in frame A, *rob* in frame B (and the Hebrew equivalent of *rob*, *šadad*, is alternating); *clean* is alternating, *purify* is not (only frame B); *Tiher*, the Hebrew equivalent of *purify*, is also non-alternating, but of the opposite kind (only frame A).

Of course, the members in each pair do contrast in their grammatical properties – precisely because they are mapped to different structures. Our point is that we do not always have solid pre-theoretical intuitions about the origins of this contrast; mere conceptual inquiry into the events denoted by the verbs does not deliver the requisite partitions. Nevertheless, we find it significant that once the proper classification is determined for a given verb, all the syntactic properties that follow from it cluster together.

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[23] We have been able to identify a single genuine COS verb of detaching in Hebrew, *cixceax* 'polish, clean entirely'. Not surprisingly, it involves physical detaching, as distinct from the verbs in (70). Although used as a manner verb of surface contact in its monotransitive guise, the ditransitive guise is devoid of the manner component, and instead encodes only a resultant state (in line with Manner/Result Complementarity, see fn. 11). Thus, (i) (frame B) is perfectly appropriate in a context where the cleaning involved no polishing action but only the operation of a vacuum cleaner. (ii) shows that unlike *nika*, *cixceax* does entail a resultant state (namely, *mecuxcax* 'shiny clean'); precisely for this reason, it is incompatible with frame A (iii), which predicates COL.

i. hu cixceax et ha-xeder me-avak.
he polished ACC the-room from-dust
'He cleaned the room shiny of dust.'

ii. hu nika / #cixceax et ha-xeder, aval niš'ar lixlux ba-pinot.
he cleaned/ polished ACC the-room, but remained dirt in.the-corners
'He cleaned the room (# entirely), but there was still dirt in the corners.'

iii. * hu cixceax et ha-avak me-ha-xeder.
he polished ACC the-dust from-the-room
'He cleaned the dust entirely from the room.'

8. Conclusion

Verbs of detaching present two puzzling asymmetries. First, only a subset of the verbs alternate (allowing either stuff or location as the direct object). Second, those that do alternate display striking syntactic differences between their two frames of occurrence. Focusing on Hebrew, this study addressed both asymmetries, and furthermore, aimed to connect their solutions in a principled way.

As to the alternation puzzle, we identified a core lexical-semantic distinction between alternating and non-alternating verbs: The first class encodes neither COS nor COL whereas the second class encodes COL. Since frame A expresses COL (the stuff is removed from the location), it is compatible with all verbs of detaching. Since frame B expresses COS (the location comes to be without the stuff), COL-encoding verbs are incompatible with it. The underlying principle, which is independently justified, is the Unique Scalar Change Constraint (USCC): It forbids VPs from predicating two scalar changes – COL and COS – of the same argument. Thus, in contrast to Levin & Rappaport 1991, we claimed that *remove*-verbs fail to alternate not because they do not encode a COS, but rather because they *do* encode a COL. This analysis was shown to overcome certain difficulties in previous accounts.

Turning to the second asymmetry, we have argued that the COS frame is mapped to the syntax via a designated null prepositional head, Res^0. This null head manifests itself in three contexts in Hebrew (pronominalization, scrambling and Ā-movement), placing systematic restrictions on the PP_{Stuff} argument in frame B, which are otherwise mysterious. Thus, the lexical-semantic analysis and the syntactic evidence bolster each other: Frame B predicates COS and the predicator is a null P.

As usual, new answers open up new questions. One difficult *old* question concerns the origins of the USCC: Exactly what properties of the language faculty impose this uniqueness on the choice of scalar changes per event? Other questions concern crosslinguistic variation. Are there languages where Res^0 is overt? Indeed, do most languages that allow frame B resort to a null P, and if so, why? Another question concerns the size of the alternating verb class. Why does it vary across languages? Why does it vary *within* a language to such an extent? Clearly, some semantic parameters are involved (manner and its subtypes, possession and its subtypes). Mapping them out and explaining how they are set (or acquired) are pressing challenges for linguistic theory.

Finally, we believe that this study throws some modest light on the murky topic of language-thought relations. Seen from the linguistic perspective, it is evident that linguistic structure is underdetermined by conceptual structure. Events in the world do not fall neatly on the two sides of the COS-COL split; rather, they form a continuum, with many intermediate cases. The COS-COL distinction is a *cognitive* construct, not an

informational property of events. Given this gap between concepts and grammar, it is not surprising to find that nearly synonymous verbs (both within and across languages) are mapped to different syntactic structures. While we do not expect to find differences in the extreme cases (e.g., the concept REMOVE is unlikely to be mapped to frame B in any language), we do expect to find differences in the intermediate cases (e.g., the concepts WIPE, ROB), and in fact we do. We only begin to perceive the contours of a general theory addressing these intriguing questions.

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