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On Structural Meaning vs. Conceptual Meaning in Verb Semantics

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Abstract: When it comes to verb meaning, it is commonly acknowledged that there is a difference between structural meaning relevant for syntax (Type A meaning) and lexical conceptual meaning that has no influence on syntactic structuring (Type B meaning). The purpose of this paper is two-fold. On the one hand, it investigates the substantive and contentful question of how we decide in principle what information is Type A and what is Type B. On the other, it argues for a way of implementing the Type A vs. Type B distinction whereby Type A is represented in the syntax as a part of a systematic syntactic-semantic mapping, and Type B resides in the non-linguistic conceptual module of mind/brain. The semantics of structure delivers entailments about force dynamics, scalar structure and event participancy; fleshly meanings are given by lexical items with conceptual content. The idea is that lexical items (LIs) are not syntactically neutral, but come associated with categorial features that indicate which parts of the skeleton they are designed to conceptually specify. I propose to explore the idea that an interesting window on the Type A vs. Type B distinction comes from analyzing the behaviour of light verbs and the distinction between their main verb meaning and their light verb instantiation, taking my lead from the observation that light verbs seem to exhibit quite stable polysemies within the languages that have them (Butt and Lahiri 2013). This article will look at examples of light verb constructions in English, Bengali and Persian, in all cases comparing the light verb with its main verb instantiation. The results of the investigation suggest that initiation vs. non-initiation, durativity vs. punctuality, experiencer semantics, resultativity, and the deictic anchoring of result states are all notions that could potentially be located in Type A, whereas numbers of arguments and specific physical properties of the event are in Type B.

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1. Introduction

When it comes to verb meaning, it is commonly acknowledged that there is a difference between structural meaning relevant for syntax (what I will call A-type meaning) and lexical conceptual meaning that has no influence on syntactic structuring (what I will call B-type meaning). Researchers are divided with respect to how this division is implemented in the theory. In some theoretical constructs, A-type meanings and B-type meanings are divisions internal to cognition more generally, which are then reflected in lexicalization (Jackendoff (1990)). In other theories, type A vs. type B plays out as a systematic difference *within* an explicitly linguistic lexical module (Levin and Rappaport Hovav (1995) inter alia). Finally, another class of theories assumes that type A meanings are the domain of syntax since they are systematic and generative, while type B meanings reside elsewhere (possibly exclusively in the root) (Hale and Keyser 2002, Mateu 2002, Borer 2005, Ramchand 2008b). Regardless of architectural decisions, however, one can often pick out these two relevant aspects of a verb's meaning, and I explicate the intuition for concreteness as follows:

Type A Meaning ("Skeleton"):
: A structured representation of abstract factors that are directly correlated with linguistic generalizations concerning argument structure realization in the syntax. (It is an open question whether the information in this domain is linguistically universal, or whether individual languages can choose to grammaticize sub portions of a set of more general primitives made available by cognition.)

Type B Meaning ("Flesh and Blood"):
: Encyclopedic and conceptually rich information that provides detailed expression to highly specific named events. It is always unsafe to assume that this type of meaning package is universal although it is drawn from common human cognitive primitives, since it is packaged up in culturally specific and historically contingent ways.

It is further important to acknowledge that conceptual content that turns out to be irrelevant for syntax (Type B meanings) could also

be structured in some principled way, as far as general cognition is concerned. The important thing for the division I am making here is that it is at a level and/or type of detail that syntax does not care about. Questions of lexical representation must do justice to the separation described above, since no one believes that all distinctions within lexical meaning correspond to differences in syntactic representation. What is less settled is how the two dimensions of meaning are distributed architecturally.

We can distinguish at least three different families of approach to the general problem. In one view, Type A and Type B meanings reside within the lexicon and are combined in parallel (i.e., unified) prior to insertion in the syntax. This therefore involves *parallel* representation, while the combination of lexical information occurs in *series* with Syntax). I take this to be the approach of Beth Levin and Malka Rappaport Hovav in their seminal and decades long contribution to the topic of verbal meaning (Levin and Rappaport Hovav 1995, Levin and Rappaport Hovav 2005). We could label this view, the *Lexicon-Internal Unification* approach. The Construction Grammar approach of Goldberg (1995) seems to be a species of this approach as well, except that it does not seem to have any "syntactic" module distinct from the lexicon, since that theory does not allow any active combinatoric rules. All constructions are complex representations, where Type A and Type B meanings are encoded in parallel.

On the other hand, the *Derivational (Syntactic)* approach would say that Type B meanings alone are encoded in the lexical root and this is combined in series with Type A meanings encoded in the syntax (i.e., with the root at the bottom of the tree). I take this to be the view espoused by classical Distributed Morphology (DM) (Harley 1995, Harley and Noyer 2000, Marantz 1997).

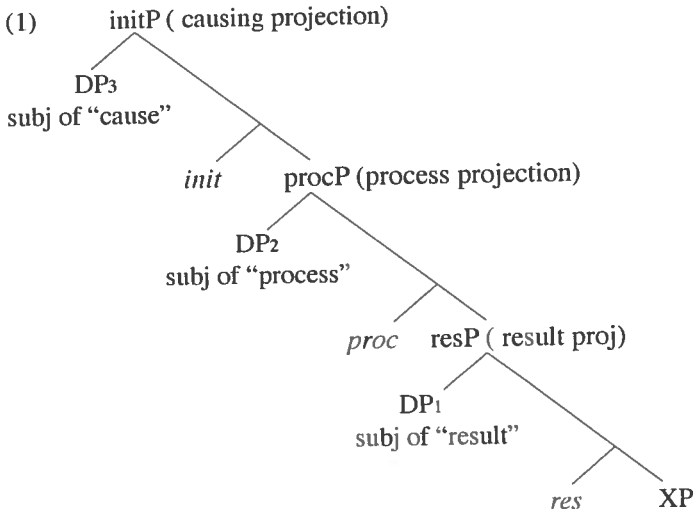
In this paper, I will present and describe a less prevalent view of the Lexicon which I call *Cross-Modular Unification*. In this view, Type A meanings are encoded in the syntax, and Type B meanings are represented in the conceptual-intensional part of mind/brain. The Lexical root however lists *both* types of information in a paired combination (much like the Lexicon-Internal Unification approach). As in DM, there is no generative lexical module per se, the Type A information is drawn from the syntactic vocabulary and takes the form of category labels in an articulated hierarchy, while Type B information is drawn from the non-linguistic structures of mind brain. The lexical item is a little chunk of cross modular associa-

tions, which are combined with each other to build larger syntactic structures (cf. also Jackendoff 1990 and Sadock 1991); Type A and Type B meaning combination proceeds by the parallel unification of lexical conceptual information and syntactic-structural information at every stage of the derivation.

To anticipate, the purpose of this paper is two-fold. On the one hand, I wish to investigate the substantive and contentful question of how we decide in principle what information is Type A and what is Type B. This question is urgent because it underwrites *everybody's* theory, and is independent of implementational details. However, I will approach the question with a concrete set of assumptions and toolbox in hand, partly because I see no other way to proceed methodologically, and partly because I think the parallel unification model is the most perspicuous in this case.

As an example of this view, and the view I will use to ground subsequent discussion, I briefly present the system that appeared first in Ramchand (2008b). The system described there constitutes a concrete proposal about which aspects of meaning are represented in the syntax, and which are not. The idea is that the phrase structural representation that corresponds to the notion of "dynamic verb" actually decomposes into predications over subevents, each of which has its own predicational subject position, and which are linked by the generalized "leads-to" or "cause" relation.

(1)



- *initP* introduces the causation event and licenses the external argument ("subject" of cause = INITIATOR)

- *procP* specifies the nature of the change or process and licenses the entity undergoing change or process ("subject" of process = UNDERGOER)

- *resP* gives the "telos" or "result state" of the event and licenses the entity that comes to hold the result state ("subject" of result = RESULTEE).

The semantics of structure delivers entailments about force dynamics, scalar structure and event participancy; fleshly meanings are given by lexical items with conceptual content. Lexical items come associated with categorial features that indicate which parts of the skeleton they are designed to conceptually specify. Essentially, then, each lexical item constitutes a set of cross modular associations, connecting syntactic labels to conceptual content. Rather than simply residing at the base of a phrase structural tree, I will try to argue that detailed linguistic evidence shows that conceptual content needs to be smeared all over the structure to express a specific event in the world. Conversely, because structural meaning is extremely abstract. It is only the presence of actual lexical items instantiating those structures that allows specific meanings to be asserted. The relationship between structure and lexicalization is enshrined in the Exhaustive Lexicalization Principle stated below, and the principle of Non-Terminal Lexicalization expresses the idea that conceptual content can potentially be associated to chunks of structure.

(2) Exhaustive Lexicalization[1]
Every node in the syntactic representation must be identified by lexical content.

(3) Non-Terminal Lexicalization:
Lexical items are bundles of conceptual information specified with a set of categorial features which determine points of meaning unification with syn-sem structure (which I assume

[1] The name and formulation of this principle emerged from collaborative conversations with Antonio Fábregas. See Fabregas (2007) for extensive discussion of its effects in the domain of Spanish directional complements.

must correspond to continuous stretches of hierarchical structure in order to feed linearization).
(If we get this right, it can account for both flexibility and selectional rigidities).

However, a fundamental question, which to some extent transcends choice of architecture, is the question of *which* meaning components are in fact part of the Type A skeleton and which are not. I take this to be an empirical issue. It is not so easy in actual practice to know where the line should be drawn. Ramchand (2008b) is one actual proposal, but I take it rather as a starting hypothesis whose fine details need to be tested against the facts. What are the relevant facts? Whenever we find universal patterns and generalizations about verbal meaning, one starting assumption could be that they belong to the Type A skeleton.[2] Lexical conceptual content, or Type B meanings, should be infinitely rich and specific and should vary unpredictably from language to language.

The evidence brought to bear should be linguistic, and potentially comes from a number of different sources. One possible source of evidence is patterns of verbal elasticity, and natural classes of verbal meaning that we see internal to a particular language, under the assumption that structural constraints determine the parameters of variation we see. We can attempt to track structurally allowed parameters of variation cross-linguistically as well, by looking at the different ways that the same overall meanings can be lexicalized. In the first part of this article, I discuss some of the prominent generalizations that have been proposed in the literature so far concerning universal constraints on lexicalization, and how they might bear on the Type A vs Type B question.

Finally, in the main body of this article, I will propose and explore the idea that an interesting window on the Type A vs. Type B distinction comes from analyzing the behaviour of light verbs and the distinction between their main verb meaning and their light verb instantiation.

[2] This assumption is only justified if the generalizations and patterns are specifically linguistic. Universal patterns of cognitive structuring could also give rise to generalizations about classes of verbal meaning; the crucial factor is whether these distinctions affect syntactic behaviour or not. Moreover, for the purposes of asking and answering this particular question, it is not important to make a decision concerning lexicalist versus constructivist architectures.

2 Some Suggested Generalizations about Verb Lexicalization

2.1. Manner/Result Complementarity

It has recently been suggested that while event schemas involving both manner and result exist in most languages, it is not possible for a single lexical verb to be associated with both at the same time. The following event schemas (Type A meanings) with associated roots (Type B meaning) are taken from Rappaport Hovav and Levin (2010).

(4) manner → [x ACT_{manner}]
(e.g., *jog, run, creak, whistle,...*)

(5) instrument → [x $ACT_{instrument}$]
(e.g., *brush, chisel, saw, shovel,...*)

(6) container → [x CAUSE [y BECOME AT < *container* >]]
(e.g., *bag, box, cage, crate ...*)

(7) internally caused state → [x STATE]
(e.g., *bloom, blossom, decay, flower, rot, rust, sprout,...*)

(8) externally caused, i.e., result, state
→ [x [ACT] CAUSE [y BECOME < *resultstate* >]]
(e.g., *break, dry, harden, melt, open...*)

(9) The lexicalization constraint: A root can only be associated with one primitive predicate in an event schema, as either an argument or a modifier.

If this is a correct generalization then it says something important about the way in which Type B meaning can be paired with Type A meaning within a particular lexical item. Specifically, it enshrines an intuition that is analogous to the idea that lexical items insert under a single terminal node. However, Rappaport Hovav and Levin (2010) do concede that the lexicalization constraint applies not to whole verb words but to simplex forms more generally. When morphemes can be seen to combine productively to create verbal lexical items

in certain languages, the lexicalization constraint applies to the individual morphemes, not to the verb itself.

> In English, most words are morphologically simple as there is no developed notion of stem: thus, manner/result complementarity is manifested in words. In contrast, in languages in which verbs are productively formed from stems and affixes, manner/result complementarity holds of the pieces of words, rather than the words themselves. (Rappaport Hovav and Levin 2010:26)

Once one allows for multi morphemic manner-result verbs however, it seems artificial and surprising to disallow a portmanteau/synthetic version of the same thing where the individual components are not morphologically clearly separable. In fact, I think there are a number of relatively clear cases of verbs whose lexical conceptual meaning contributes content to more than one element of an abstract event schema. Arguably, the verb *slice* in English is specific about the manner of effecting material separation, as well as the shape/physical properties of the resulting pieces. Perhaps even clearer, the verbs *to lay* and *to stand* require there to be a physical placement of an object on the part of an agent, and they also require a specific orientation of the object in its final result state.

While there seems to be some suggestive evidence in the direction of manner-result complementarity, we need to ask ourselves whether the patterns here are absolute or tendential. I would be wary about hardwiring manner-result complementarity into a theory of lexicalization because there are a number of plausible functional reasons why there should be such a tendency, and no formal reason to rule out portmanteaux.[3] I quote from Talmy, who argues that there are complementary pressures that would conspire to make a language's lexicon structure itself around a "medium" size of conceptual specificity, with some productive abstract combinatoric elements. (The quotations from Talmy here come in the context of a discussion of manner/direction complementarity, something that Levin and Rappaport Hovav 2010 also subscribe to, taking directed motion verbs essentially to be a type of result verb.)

[3] Recent work by Acedo-Matellán and Mateu (2012) also argues that manner-result complementarity should not be encoded in the form of distinct and incompatible phrase structural representations. However, they do believe that the combination of manner and result within a single verb is syntactically prohibited because of their assumed constraints on how lexical items associate to structure. Here, I am arguing that combination of manner and result is in fact attested, although infrequent for independent reasons, and should not be ruled out syntactically: specifically, the system in Ramchand (2008b) allows items to associate to larger chunks of structure that include both process and result, and nothing rules out manner conceptual content being part of that memorized association in addition to conceptual specification of the nature of the result.

> If, indeed, the pattern with lack of conflation occurs rarely or never as the main system of a language, one explanation may be its relative inefficiency. The pattern calls for the reexpression of the same morpheme with the same fixed meaning.... (Talmy 2007:102)

> Conflation systems of this multi-component sort apparently never form a language's major system for expressing Motion. The reason for such a prohibition seems straightforward for any system that would undertake to make relatively fine semantic distinctions: it would require an enormous lexicon. (Talmy 2007:102)

Interestingly, by the end of the article, Rappaport Hovav and Levin (2010) modify the manner-result complementarity prohibition to one that rather involves the incompatibility of scalar vs. non-scalar change. The idea here would be that a morpheme cannot conceptually describe both a scalar change and a non-scalar change simultaneously, which places the incompatibility within the B domain, and not specifically in the mapping between A-type meanings and B-type meanings.

> In summary, we have identified result verbs as verbs which lexicalize scalar change, and manner verbs as verbs which lexicalize non-scalar change (and specifically, complex change). What we described as complementarity in the lexicalization of manner and result, then, is more accurately characterized as a complementarity in the lexicalization of scalar and non-scalar change. (Rappaport Hovav and Levin, 2010:33)

If this is true then it suggests that the syntax (or the event schematic layer) represents path of change as part of the Type A package of meanings, and possibly makes a systematic distinction between scalar and non-scalar changes, which would then be in complementary distribution.

2.2. Verb-framed vs. Satellite Framed

I turn briefly now to the classic typological distinction between Verb-framed vs. Satellite-framed languages as proposed by Talmy (1985, 1991, 2000) and subsequent work. The idea here is that certain components of meaning recur as core elements of verbal meaning, but that there are differences among languages in how those meaning components are lexicalized. I reproduce the table from Talmy (2007) (Table 2.12, pg 154) below.

(10)	Verb Root	Satellite
Romance Semitic Polynesian Nez Perce Caddo	Motion + Path	ø Manner (Figure/) Ground [Patient]
Indo-European (not Romance) Chinese	Motion + Cause Motion + Manner	Path
Atsugewi	Motion + Figure	a. Path + Ground b. Cause

The distinction made is between languages where *verbs* directly lexicalize the Type A meaning corresponding to PATH (Spanish), and those in which *satellites* lexicalize them (English, via particles and prepositions).

The nature of these different patterns both within and among languages provides important clues about which aspects of meaning belong to structural semantics (Type A) and which belong to encyclopedic content (Type B). But there are still some important open questions. For example, Talmy's parameter crucially distinguishes the class of motion predicates, as being different from changes in material integrity, or changes in a scalar property. Rappaport Hovav and Levin on the other hand make a more abstract classification into scalar vs. non-scalar change which abstracts away from the domain

in which the change is taking place (e.g., spatial vs. property-based). Differences in the level at which the generalization is stated make a big difference to our theories of Type A meaning. In other words, is the difference between Motion and Change of State stated within the skeleton of Type A meanings, or is it part of cognitive conceptual content (i.e., within Type B flesh and blood)?

Going even further in the direction of abstractness, we could ask the same about scalar vs. non-scalar change itself. Is the Type A notion just dynamic change in its most abstract form, with scalar vs. non-scalar change being conceptually specific instantiations of that, or is scalarity explicitly part of the Type A vocabulary of primitives? If the latter, is this encoded as complementary schemas within Type A, or are scalar changes a constructive "extension" of non scalar change?

While I do not propose to provide answers to all of these questions in this paper, it is clear that the issue is pressing and we need to continually seek evidence that we can bring to bear on it. I will try to make the argument that a particularly interesting window on the issue can be seen in the phenomenon of light verb meanings (a pervasive phenomenon across languages), and in the rest of this paper I will pursue the point to see where it leads us.

3. Probing Verb Meaning with Light Verb Constructions

There is one important generalization underlying the claim that light verbs are an interesting window into the Type A vs. Type B distinction. I state this under-appreciated point below in (11) after Butt, and Butt and Lahiri, who as far as I know, have been the first to state it and argue for it in print. They do not name it explicitly, but I will refer to it from now on as *Butt's Generalization*.

(11) *Butt's Generalization* (Butt 2003, Butt and Lahiri 2013):
Unlike auxiliaries which may become grammaticalized over time to have a purely functional use, light verbs always have a diachronically stable corresponding full or "heavy" version in all the languages in which they are found.

The significance of this generalization is that there is a kind of stable polysemy that is being evidenced here, where one member of the pair is fairly functional and abstract, and the other member of

the pair has richer conceptual content. If the two versions (to put it neutrally) of the lexical item were merely related diachronically via some grammaticalization chain, then we would expect the relationship to be noticeable, but also subject to certain historical contingencies and tendencies relating to semantic drift and reanalysis. We would also expect the two versions to potentially drift apart from each other over time, both phonologically and potentially semantically, and to eventually count as distinct lexical items. The situation we do see however, points to systematic polysemy rather than diachronic relatedness, if Butt and Lahiri (2013) are right.

If this is true, to avoid missing important generalizations, we seem to need a constrained theory of polysemy that can account for this stable lexical relationship. While systematic polysemy abounds in the verbal lexicon, at least in the sense of a particular verb having different argument structures, this particular version of stable polysemy is somewhat different because the two versions appear to be qualitatively different: one appears to be more functional, while the other appears to be more traditionally "lexical." But if light verbs were functional elements and their heavy counterparts were roots, there would be no ready explanation for their systematic relatedness. In fact, as I will try to show, certain types of meaning (event structural) carry over from one use to the other.

One natural interpretation of this situation, consistent with the parallel architecture proposed above, is that the two versions arise from the fact that Type B meaning is always negotiable, while structural, Type A meaning is not. Thus, the abstract structural things that carry over from the heavy verb use to the light verb use are the Type A meanings, while the stuff that falls away is Type B.

(12) *Semantics of Structure (SoS) Conjecture on the Limits of Lightness*
The meanings of a light verb and its corresponding heavy alternant are in a subset-superset relation in their conceptual semantics, the light version being a proper subset of the heavy. Only non-syntactic or conceptual information is systematically negotiable within the "same" lexical item. Anything that is present in the heavy version but not in the light must therefore be a species of Type B meaning. At its most pared down, a light verb can only be as light as the structural semantics corresponding to the Type A meaning of the pair.

The SoS Conjecture is based on the intuition that conceptual content (Type B meaning) is a rich network of lexical presuppositions, which under certain circumstances are actually separately defeasible. Type A meaning on the other hand is the information that connects a lexical item to its syntactic context of use: a lexical item can identify a particular syntactic structure if it is encoded with precisely the relevant category labels.

We can investigate this conjecture by looking at light verbs and their heavy counterparts in a number of different languages, to see what it would imply in each case.

3.1. English Light Verb Constructions

Kearns (1988) distinguishes two types of complex predicates in English based on morphological shape and syntactic behaviour. In the first group are the True Light Verbs (TLVs), where the N is a bare nominal that is form-identical with a verbal stem. In the second group are what she calls Vague Action Verbs (VAVs), where the N is a derived nominal (although that's not *always* easy to see). True Light Verb constructions are characterized by the fact that the bare nominal complement does not easily undergo the following processes characteristic of full DP objects: passivization, Wh-movement, relativization, reference by means of a pronominal, modification by adjectives, and use of a definite article. While not categorical, Kearns shows that TLVs are systematically worse than VAVs with respect to the possibility of these syntactic operations. In addition, the nouns that are form identical with the verbal stem are also quite bad at licensing internal (of-phrase and genitive marked) arguments on their own, indicating strongly that they are not independent DP arguments of the verb, but form part of a complex predicate with it.

(13) a. *John's wipe of the table was efficient.

b. *The table's wipe was efficient.

In what follows, I will concentrate on TLVs since they show the most unambiguous complex predicate behaviour, and will look at the "light" verbs that appear in these constructions. TLVs occur with *have*, *take*, *make*, *do* and *give* in English. The following is a list (not exhaustive) from Cattell (1984).

(14) GIVE: bark, belch, chuckle, cough, cry, gasp, growl, guffaw, gulp, hiccup, howl, moan, quiver, screech, shiver, shudder, sigh, snarl, sneeze, sniff, snort, sob, squeak, squeal, twitch, yawn,...

MAKE: appeal, approach, attempt, boast, bolt, bow, dash, demand, endeavour, grab, grimace, guess, joke, journey, leap, lunge, move, protest, remark, request, rush, start, try, turn.

HAVE: bath, dance, drink, fight, glance, taste, use, poke, joke, kick, peep, quarrel, rest, ride, shave, shower, sleep, lie-down, think, throw, try, wash.

DO: dance, shuffle, somersault, sprint, wriggle.

GIVE: bash, biff, crack, cuddle, hit, hug, kick, kiss, pat, pinch, punch, smack, squeeze, thump, thwack.

In what follows, I discuss each of the light verb constructions in turn.

3.1.1. "Give + Body Contact Verb/Verb of Emission"

In these complex predicates, the heavy use expresses the change of possession of a physical object from John to Mary when used in the double object construction, while the light verb use indicates a volitional "kissing" of Mary by John.

(15) a. John gave Mary a book.

b. John gave Mary a kiss.

In general, the N is form identical with a verb V, and constructions such as (15) are interpreted as the agent V-ing Mary, in a punctual act. Interestingly, this use is confined to verbs of bodily contact, and seems to prefer the double object version.

(16) a. John gave Mary a cuddle.

b. ?John gave a cuddle to Mary.

Even though the meaning of "give" becomes quite abstract in the version with *kiss* or *cuddle*, it nevertheless seems to be the same

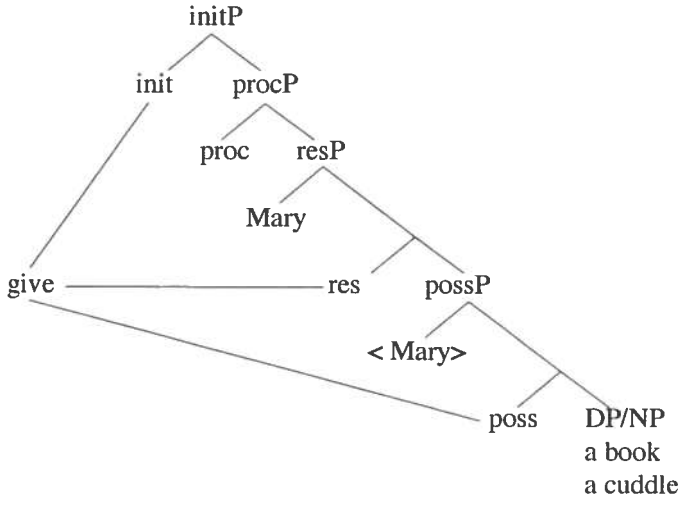
verb, as evidenced by the fact that both types can be detransitivized systematically using *get*, or *have*.

(17) a. Mary got a kiss/a look (from Bill).

b. Fred got a kick in the pants from Bill.

In fact, in this alternation, very little seems to change from the heavy use of *give*, except for the physical concept of possession: the argument structure facts remain the same and the notion of a recipient still remains even though they become the receiving/experiencing location for a physical act. Doing the Kearns tests on these constructions does not give clearly very different results from constructions using a non-verbal DP: passivization and modification seem to work just as well for objects like *kiss*. Under a Ramchandian decomposition, both types would have the same phrase structure as shown in (18) below.

(18) *John gave Mary a cuddle.*



The abstract possessional small clause embedded under RES could presumably be lexicalized by *give* itself, or considered as a default small clause predication made available by language more generally and seems to be able to vary depending on whether the possessed

thing is an object or an experience. In deciding which way to go here, it is relevant to consider the other light verb construction formed with *give*, namely the one that is formed with verbs of emission. These "selectional" properties of the individual frames are interesting in their own right and provide important clues as to the light verb's own structure, and the relationship between the light and heavy versions of the same verb, in this case, *give*. When it combines with verbs of emission, *give* allows no overt recipient.

(19) John/the train gave a shudder/sigh/whistle.

For the hypothesis being entertained here, it is important that there is a "heavy" use of *give* that also seems to have these properties (20).

(20) The apple trees gave a lot of fruit this year.

In this usage, the meaning seems to be that of a "giving out" or "giving away." It is crucially outwardly directed, away from the initiator, but the recipient is generic, and obligatorily absent. Standard tests for the object-hood of the N/V forms like shudder/sigh/whistle are slightly more degraded than in the previous case, and much more degraded than in the heavy versions of *give*.

(21) a. A book was given ?(to Mary) by John.

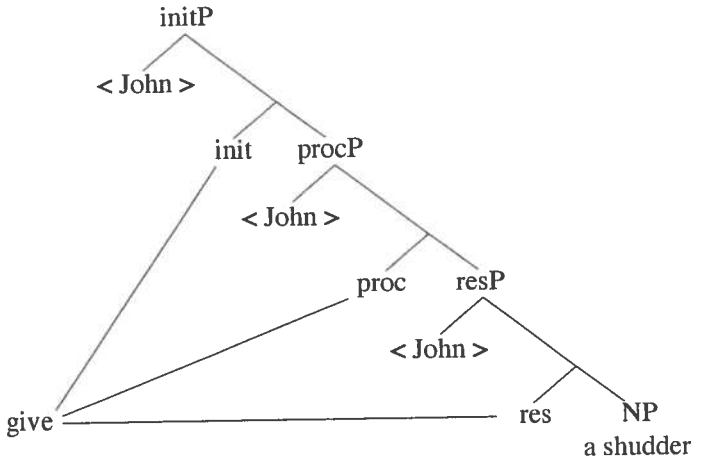
b. ??A kick was given to the dog by John.

c. ?*A shudder was given by John.

A possible Ramchandian decomposition of this meaning (in both the heavy and light versions) might look like (21) below, where the NP object is the complement, or rheme of RES, thus characterizing the final state in a criterial way. The idea here would be that an NP action description in the complement position of result comes into existence as a result of the initiator's action. The RESULT in this construction is filled by the initiator himself, who possesses the experience of "shuddering," thus there is no possessional result and no room for an independent recipient.[4]

[4] One could also choose to represent this as an explicit small clause of existence under RES, but this would just push the N/V form down one level. The non-

(22) *John gave a shudder.*



If we wish to unify both argument frames for *give*, then we only need to say that *give* always retains the ability to lexicalize INIT, PROC and RES, it is punctual in all its uses, and it is always outwardly directed. From the SoS hypothesis, the structural skeleton of *give* cannot however contain an explicit recipient participant, or even explicitly a notion of possessed end state, however abstract that is made. The Ramchandian decompositions give the transitivity and telicity of *give* explicit representation. Ramchand (2008) also has a way of ensuring that *give* is always punctual since there it is claimed that verbs that lexicalize INIT, PROC and RES map both sub event transitions to a single temporal moment. These decompositions also allow for variable argument realization in the specifier positions, and they allow for variable realization of the choice of complement for *give*, presumably subject to linguistic defaults and the lexical inventory of the language in question. However, what remains unexpressed in the A-type system according to Ramchand (2008) is the meaning contribution of outward directedness, in other words, the idea that in all the uses of *give*, the INITIATOR is always the inalienable source of the path of change. We will come back to this issue.

passivizability of N/V in this construction, suggests to me that it needs to be more integrated within the predicate and not present as an individuated argument. I thus choose to represent it as a direct selected sister of the RES head lexicalized by the verb.

3.1.2. "Have + Dynamic Verb"

The "ordinary" verb *have* has a variety of uses even when not combined with another predicational root.

(23) a. John has a dog.

b. John has a sister.

c. John has a nice face/graceful movements.

d. John has a bruise.

These are all stative, with some general semantics of possession but with different degrees of inalienability of the complement. In addition, there is a more dynamic use of *have* which goes with some complements.

(24) John had a heart attack/John is having a heart attack.
(from Cattell 1984, chapter 4)

(25) a. John had a dreadful shock yesterday.

b. John had a good time at the party.

c. John had a mango from the bowl before going out.

On this usage, the direct object is actually passivizable, provided one is careful about the context.

(26) a. A good time was had by all.

b. After all the mangos were had, we started to cast about for other things to eat.

It is this more dynamic use of *have* that seems to be at play in the TLV complex predicates in English. In many cases, *take* is substitutable for *have* with very little difference in meaning (my judgements).[5]

[5] The construction with *have* is somewhat dialectically specific. British and Australian speakers accept a wider variety of N/V complements to light verb *have* than American speakers.

(27) a. John had/took a swim.

b. John had/took a lie-down.

c. John had/took a read of Mary's novel.

d. John had/took a try of Mary's cocktail.

Although, they are not always substitutable, it seems as if *take* shares the experiential properties of dynamic light verb *have*, but requires bounded events in complement position.

(28) a. John had/*took a scribble in his notebook.

b. John had/*took a play on the swings.

Concentrating on *have* here, we can see that the N/V complement can denote a wide range of different kinds of activity, including punctual and more durational ones.[6]

These complex predicates in English are not very passivizable at all.

(29) ??*A try of the cocktail was had by all.

Both Wierzbicka (1982) and Cattell (1984) have pointed out in addition that the *have a V* construction is systematically odd with (presumed) cognitively unaware entities.

(30) a. John had a hit of the baseball.

b. * The truck had a hit of the garage door.

c. John had a kick of the expensive new football.

d. ??The horse had a kick of the ball.

[6] Not all activity verbs work well with either *have* or *take*. This is another species of the selectional issues referred to in the previous footnote.
(i) *John had a work in the garden.
(ii) *John had an eat of the apple.
(iii) *John had a write of his dissertation.
The additional selectional constraints at play here have to be put aside for another paper.

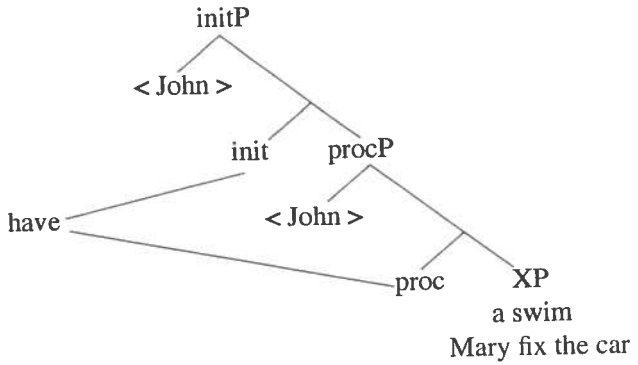
The case of the verb *have* is an interesting one independently because it has so many different frames, (even in addition to its use as a perfect auxiliary, which I put aside here). It therefore, even in connection with full DP complements, has quite abstract semantics. The most striking fact is the ambivalence it shows between stative and dynamic interpretations. However, it is important to record that the dynamic use of *have* shows up in (at least) three distinct frames: with a full DP concrete object as complement (31a); with an N/V describing an event as complement (32b); with a small clause event description as complement (33c).

These seem to all be the same lexical item in the sense that they are all dynamic, they do not invert under questions or attach to negation (even in the dialects that allow this with stative possessional *have*), and they all require sentience on the part of the external argument. I leave aside for the time being whether this *have* can be unified with stative possessional *have* and/or with auxiliary *have* either synchronically or diachronically, and concentrate on the meaning elements that all the versions in (31) have in common. For concreteness, once again, I give a Ramchandian decomposition: *have* is a self-initiating self-experiencing INIT, PROC verb, which can take any experience denoting DP or small clause in its complement (up to full recursion in the case of (31c). The resulting complex event is telic just in case the path of change denoted by the embedded event is bounded. (We saw that unlike *take*, *have* can combine with events of any aktionsart in this dialect.)

In the system of Ramchand (2008), an agent experiencer is correlated with having the same DP function both as INITIATOR and UNDERGOER, as notated here. Regardless of how it is done, experiencer semantics seems to be a crucial part of the meaning that is non-negotiable here.[7]

[7] For *take*, we would get the same representation, experiencer-hood and deixis, but with an extra RES sub event.

(32) *John had a swim.*



If one further wanted to unify this form with stative possessional *have*, according to the SoS, the structural semantics of *have* would not encode either possession, or stativity (the former is not surprising, but the latter is). I leave it open at this point whether such a unification should be attempted.

3.1.3. "Make + Dynamic Verb"

Here I concentrate on the TLVs with *make*, and ignore the many constructions that occur with more obviously derived nominals. I include only those which are used with the indefinite article.

(33) a. John made a dash for the border.

b. John made an appeal to Mary.

c. John made a grimace and turned away.

d. John made a start on his dissertation.

e. John made a move towards the door.

f. John made a lunge towards his opponent.

g. John made a quick turn on his heel and left the room.

All the latter sentences are paraphrasable with the eponymous verbs. They also all conform to the argument structure of the verb *make* on its own in its heavy use, but without a benefactive argument.

(34) John made a cake.

These TLVs do not allow an indirect object, even though *make* does.

(35) a. *John made Mary a dash for the border.

b. *John made the border a dash.

c. ??John made me a grimace, and turned away.

d. *John made himself a move towards the door.

This makes TLV *make* similar in some interesting respects to Emissive-*give*. And in fact, some verbs can go with both *make* and *give*.

(36) a. John made a grimace/gave a grimace.

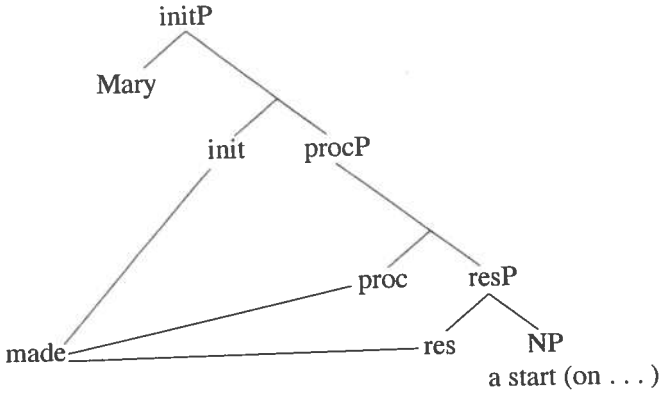
b. John made a lunge/gave a lunge....

c. John made a groan/gave a groan....

More of the Emissive-*give* N/V complements work with *make* than the other way around. *Make* seems more restrictive on the one hand though, in requiring an intentional causing actor in this usage. It is less restrictive in its choice of complement however. Any action seems to do for *make*, provided that it can be done in a delimited amount of time. Emissive-*give* seems to require the sister verb-noun to have the initiator as its inalienable source.

Thus what seems to be criterial of the *make* TLV is that the initiator be causational, but it does not need to be the source of the verbal path, as in *give*, or the experiencer of the event as in *have*. Once again, if we were to represent the phrase structure of these complex predicates according to the decomposition of Ramchand (2008), we might propose something like (37) below.

(37) *Mary made a start on her dissertation.*

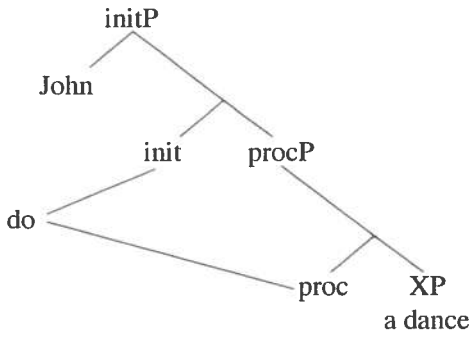


This is virtually identical to the structure proposed for emissive *give* above. As in emissive *give*, the fact that the complement of RES is a nominal element representing an event, and not a predicational small clause stative result means that there is no possessional substructure here to license a beneficiary. However, the difference between *give* and *make* is not adequately expressed in these structures: In both cases, the external argument has a *de se* identity relationship with the external argument of the embedded event. But so far, we have no clear way of representing the idea that in *give* the external argument is a SOURCE, while in *make* it is a CAUSE. The Ramchandian role of INITIATOR explicitly does not distinguish between these two subtypes of external argument.

3.1.4. "Do + Activity Verb"

Turning finally to TLVs formed with *do* it is actually a little surprising how few of these there are, given how often the small-caps version shows up in abstract conceptual decompositions. Light verb *do* combines with a small subset of the unergative verbs of motion. Of the five that Cattell cites, I actually only find *do a dance* and *do a somersault* any good. *Do* seems to require an activity in its complement, and its telicity depends on the telicity of that complement. I therefore represent it, like *have*, with just INIT and PROC sub events and no RES (38).

(38) *John did a dance.*



Do is distinguished from *have* in lacking the explicit experiential component. We represent that here by base generating the external argument in initP, as an INITIATOR, with no UNDERGOER entailment.

3.1.5. Discussion

From this brief foray into English light verb constructions, we can draw some tentative conclusions and speculations. The nature of the SoS hypothesis is that the comparison between "light" and "heavy" versions tells us what must be Type B meaning, but cannot tell us what must be Type A meaning, since some Type B meaning could survive into the "light" usage(s). Still, we have some clear results. The actual notion of physical possession, or making of a physical object, goes away in the light verb construction and must be part of Type B meaning. In addition, the actual argument structure participant corresponding to recipient and beneficiary seems to be similarly negotiable, suggesting that this particular argument structure participant is always compositionally added. This is in line with the idea in Ramchand (2008b) that the event structure profile of a verb is part of the verb's non-negotiable meaning, but not an argument structure frame per se. It is also in line with general treatments of beneficiaries as "applied" arguments (Pylkkänen 1999)). Finally, the examination of *have* seemed to indicate that even stativity is not a crucial part of the meaning of *have*, but only emerges as a consequence of what *have* eventually combines with.

On the positive side, candidates for Type A meaning include the existence of initiation or not, and the deictic properties of the result

(i.e., whether the result is directed away from the initiator as in *give*, or towards the initiator as in *have*, or *take*). Further, among the light verbs, we seem to need to distinguish whether the external argument experientially undergoes the event or not as a criterial part of its unfolding. This was true of *have* and *take*, but not of *do* and *make*. Ramchand's (2008) theory of verbal decomposition contains both initiation and result, connected to core processes. This could possibly be adapted to representing experiential undergoing (see Ramchand 2008 for a suggestion), but so far does not explicitly represent deixis. Rather than make a proposal for improving the Type A language here in this article, I instead summarize the features required for the light verb specification of the verbs we have considered in table (39).

(39)	Subevents	Deixis	Experiencer
give	INIT, PROC, RES	→	±
take	INIT, PROC, RES	←	±
make	INIT, PROC, RES	↔	-
have...	INIT, PROC	←	+
do	INIT, PROC	↔	±

Note that even though there are light verbs that are deictically specific, and those that are specific about the experiencer status of the subject, there are also others in the table that remain neutral with respect to these distinctions. One possibility is to take this as an indication that these light verb properties are residues of Type B meaning that remain in the light verb usage in certain cases, in which case we would be wrong to try to hard wire these aspects of meaning into the phrase structure or the featural system.[8] Further work needs to be done to see whether the system in Ramchand (2008) is correct, or whether it is wrong and deixis actually needs to be built in some way into the structural semantics (recall that the SoS hypothesis does not actually tell us that "what stays" is Type A, just that it could be).

[8] As is probably obvious from the discussion, I do not distinguish lexical verbs from functional verbs in this framework: every verbal lexical item potentially possesses Type B content in addition to Type A content. The items that have been called functional are the ones that have *a priori* seemed to researchers to have very little Type B content. But as I have hoped to argue, which meanings belong to Type A vs. Type B are part of the question we are trying to answer and cannot be presupposed.

3.2. Bengali CPs

Now I turn to a language which is even more systematic in its use of light verbs and complex predicates, and discuss the results we obtain from the SoS when we apply it to the rich set of constructions on display there.[9]

One can show from agreement, control, and anaphora facts that light verb constructions in Bengali are monoclausal. They also exhibit integrity with respect to scrambling and adverbial modification (see Butt (1995) for a detailed examination of the equivalent construction in Hindi/Urdu). Moreover, the particular construction examined here always gives rise to a telic interpretation. The light verb is marked for tense and agreement, and the main verb is explicitly marked as a perfective/conjunctive participle.

There are a number of different light verbs that are used in this construction in Bengali (between 8 and about 16 depending on how one counts), but I will only consider the most common and productive here.[10]

The three light verbs that I will focus on for this discussion are: *jaoya*-'go', *oṭha*-'rise', *phœla*-'drop/throw'. My data also includes the extremely common pOṛa-'fall' and ṭola-'lift', but for the purposes of the "matching" that I found, 'fall' patterned like 'go', and 'lift' patterned like 'drop'. In the interest of space and clarity, I present only the data from 'go', 'rise' and 'drop' here.

All of these light verbs have both a "light" verb use and a "heavy" verb use, conforming to *Butt's Generalization*.

jaoya -'go'

(40) a. ritu baṛi gælo.
Ritu house go.PASTt3
'Ritu went home.'

b. gelaš -ṭa bhem-e gælo
glass-CL break-PERFPART go-PAST3
'The glass broke.'

[9] The material in this section is a compressed and selective reworking of data first discussed in Ramchand (2008a).

[10] My thanks to Tista Bagchi for her patience, insight and good nature during extensive informant sessions, and for her careful descriptions of contexts of use.

phœla-'drop/throw'

(41) a. ritu hat theke boi-ṭa phello
Ritu hand from book-CL drop.PAST3
'Ritu dropped the book from her hand.'

b. ritu kaj-ṭa kor-e phello
Ritu work-CL do-PERFPART drop.PAST3
'Ritu finished her work.'

Oṭha-'rise/climb'

(42) a. ritu gače uṭhlo
Ritu tree-LOC climb.PAST3
'Ritu climbed the tree.'

b. baloon-ṭa uṭhlo
balloon-CLASS rise.PAST3
'The balloon rose.'

c. ritu hOṭhat heš-e uṭhlo
Ritu suddenly laugh-PERFPART rise.PAST3
'Ritu burst out laughing.'

Considering the three light verbs under discussion here, I make the following assumptions about their make-up as full verbs:

jaoya-'go' is unaccusative, and so, according to Ramchand (2008b) it has a simple [proc, (res)] structure.

Oṭha –'rise/climb' is ambiguous between an unergative and an unaccusative reading ([(init), proc]).

phœla –'drop' is transitive ([init, proc, res]).

In Ramchand (2008a), I concentrated on the selectional properties of these light verbs and examined which classes of main verbs they combined with. What emerged was an extremely clear pattern.

Generalization:

- *jaoya*-'go' (and *pOṛa*-'fall') can only combine with unaccusative main verbs.

- *phœla* –'drop' (and *ṭola*-'lift') can combine only with transitive and unergative main verbs.
- *Oṭha* –'rise/climb'can combine with either unaccusative or unergatives, and even one or two transitives.

The analysis in that article relied on a particular implementation of event structure matching to explain the patterns found. However, what is relevant for our purposes here is the striking difference between the main verb use of a verb like *phœla*—'throw' which is transitive—and its light verb use. In (41) we see the transitivity of the light verb maintained, but my investigation showed that this was not necessary. Some representative examples are given below. While *phœla* combined well with transitives and unergatives, it was systematically bad with unaccusatives.

(43) *dorja-ṭa khul-e phello unaccusative
door-CLASS. open-E throw/drop.PAST3
'The door opened.' (intended)

(44) ram bol-e phello unergative
Ram speak-E throw/drop.PAST3
'Ram blurted something out.'

(45) O baṛi-ṭa ban-iye phello transitive
he/she house-CLASS. build-E throw/drop.PAST3
'He accomplished/completed the building of the house.'

The conclusion I come to about *phœla* is that it can never be used in an unaccusative construction, but that it always requires an initiational component. Unergatives have an initiational component by hypothesis, even though there is only a single argument present. It is important to note that unaccusative light verbs such as 'go' and 'fall' in Bengali, do not show pickiness for valency either. Rather, they are used in constructions where no initiational sub event is present, i.e., they combine only with other unaccusatives (46), and not with unergatives (47) or transitives (48).

(46) dorja-ṭa khul-e gælo unaccusative
door-CLASS. open-E go.PAST3
'The door opened.'

(47) *O kothaṭa bole gælo unergative
he word-CLASS. speak-E go.PAST3
'He spoke' (intended)

(48) *jon baṛiṭa ban-iye gælo transitive
John house-CLASS build-E go.PAST3
'John built the house' (intended)

Finally, the verb 'rise' which was ambiguous in its main verb use shown above, was able to combine with all main verb types (although with transitives it was more restricted).

(49) boroph jom-e uṭhlo unaccusative
snow/ice freeze/accumulate-E rise-PAST.3rd
'The ice/snow accumulated.'

(50) O bol-e uṭhlo unergative
he/she speak-E rise.PAST3
'He/she spoke up.'

(51) *O baṛi-ṭa ban-iye uṭhlo transitive
he/she house-CLASS. build-E rise.PAST3
'He accomplished/completed the building of the house.'
(intended)

(52) O bagh-ṭa-ke lathi mer-e uṭhlo transitive
he/she tiger-CLASS-ACC kick hit-E rise.PAST3
'He unexpectedly kicked the tiger.'

What this shows, consistent with the results from English in the previous subsection, is that valency per se is not the dimension of meaning that is preserved across light and heavy instantiations of the same item. However, it is not the case that all such selectional information goes away. Rather, it seems as if the event structure association to either initiation (or not) survives in the light verb use. Valency in turn is underwritten by the event structure facts, but the direct information is the latter and not the former. We see this when the two properties come apart, as with the unergative verbs which have complex event structure with an initiation component, but only one overt argument.

3.3. Persian CPs

My final case study concerns Persian, which also famously possesses a ubiquitous light verb strategy. In Persian, light verbs come in transitive/intransitive pairs. In addition, the choice of light verb determines the choice between durativity and punctuality (Karimi-Doostan 1997, Meegerdomian 2002, Folli et al. 2005, Pantcheva 2009).

(53)	Causative LVs	Inchoative LVs
	zædæn 'hit/strike' *kærdæn* 'make' *aværdæn* 'bring' *dadæd* 'give' *ændæxtæn* 'throw'	*xordæn* 'collide' *shodæn* 'become' *amædæn* 'come' *didæn* 'see' *oftadæn* 'fall'

Once again, the "transitive" light verbs do not necessarily give rise to two overt arguments, rather the resulting complex predicate for the LVs in the left column seem to require volitional agents (data from Pantcheva 2009).

(54) a. bæchche qælt=zæd
child tumble=hit
'The child tumbled over (intentionally)'

b. bæchche qælt=xord
child tumble=collided
'The child tumbled over (by accident).'

Meegerdomian (2002) notices that verbs using 'hit' as a light verb have a punctual reading, whereas the same verb with the light verb 'pull' gives a durative reading.

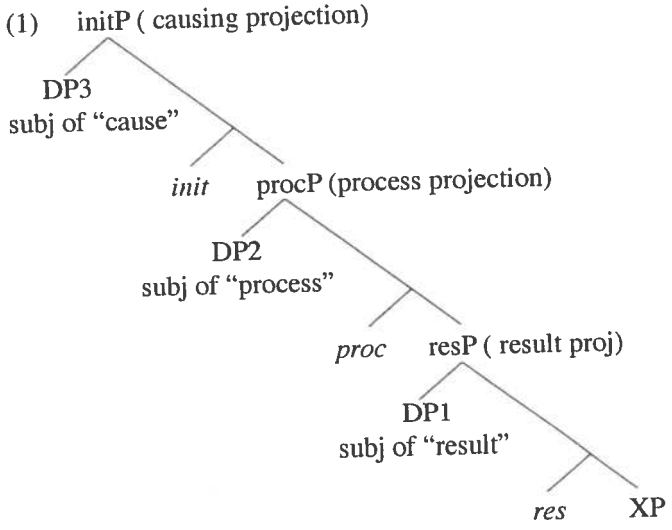
(55)	Punctual	Durative
	dad zædæn 'cry hit' *næfæs zædæn* 'breath hit'	*dad keshidæn* 'to shout' 'cry pull' *næfæs keshidæn* 'to breathe' 'breath pull'

Folli, Harley and Karimi (2005) is a good example of a constructivist treatment of complex predicates. They propose that all light verbs are actually little v heads and argue that Persian complex predicates are just phrasal spell-outs of Hale and Keyser's lexical syntactic structures, an attractive view on one level if it can be maintained. However, by analyzing light verbs as functional items in this way, the relationship between the heavy verb and its corresponding light verb use is more of an accident of history and grammaticalization than a synchronic fact about a single lexical item. Folli, Harley and Karimi try to derive the properties of the resulting CPs from the nature of the complement of little v alone. But as I have argued, this still leaves the problem of "selection" and of the non-accidental relationship between the properties of the light verb in its heavy use, and the properties of the complex predicate that results. It is this property that I am most concerned with here, namely the fact that certain properties of the verb in its heavy instantiation carry over to the properties of the complex predicate that results (and some do not).

3.4. Taking Stock

Consider again the proposal in Ramchand (2008b) for the decomposition of the verb phrase. I repeat the tree in (1) for ease of reference.

(1)



The architectural proposal there is that there is a regular and systematic semantics associated with this abstract structural template and that lexical items come coded with information about what aspects of that template they lexicalize. In addition to this syntactic information, lexical items also carry lexical encyclopedic content which contributes more conceptual substance to the event structure template. Thus, in Ramchand's system, the phrase structure representation above is supposed to be a theory about Type A meanings directly. Type B meanings compose with Type A meanings by unification, and lexical items consist of pairings of these meanings. So the open question here is what exactly we should put in the representations above, given the space of light verb meanings shown in (57).

(57)

	Subevents	Deixis	Experiencer
give	INIT, PROC, RES	→	±
take	INIT, PROC, RES	←	±
make	INIT, PROC, RES	↔	-
$have_{dyn}$	INIT, PROC	←	+
do	INIT, PROC	↔	±
$throw_{bangla}$	INIT, PROC, RES	↔	±
$fall_{bangla}$	PROC, RES	↔	±
$hit_{persian}$	INIT, PROC, RES	↔	±
$collide_{persian}$	PROC, RES	↔	±
$pull_{persian}$	INIT, PROC	↔	±

The evidence from the light verb-heavy verb investigation suggests strongly that we must add initiation vs. non-initiation to our stock of Type A distinctions, in addition to the orthogonal difference between durativity and punctuality. Both these kinds of information are explicitly representable in the decomposed tree structures given in Ramchand (2008) (and indeed many other theories of lexical structure). The difference between initiation and non-initiational pre-state correlates with the presence vs. absence of the initP. Punctuality is correlated with the verbal lexical item identifying both process and result simultaneously, while durative verbs are just process. From the section on English, we saw that deictic information about whether the result state is directed towards and away from the initiator is also a common dimension of meaning to survive in light verb meanings (also suggested by the Persian system, which has 'bring' and

'come' alongside 'give' and 'see'), as is experiencer semantics, and is not explicitly represented in the phrase structure although maybe it should be. Further work needs to be done to determine whether, and how, the event structure templates above need to be modified to accommodate this type of meaning.

One thing that is consistently negotiable in what we have seen above is the actual number and disposition of arguments, suggesting that actual argument structure grids are not lexically specified by verbs directly. Instead, in Ramchand (2008b) I argued that simple category labels related to the sub events described by the category label hierarchical sequence above were enough to specify the lexical item. Some independent theory of argument expression is needed to relate argument positions to various sub events via predication. In Ramchand (2008b) I argue that the specifier of each subevental description is fillable in principle via predication and gives predictable participant semantics, unless something specific in the verbal conceptual information rules it out.

4. Back to Motion in Space

Thus, from the evidence of light verbs, it looks like causation, event structure, and abstract path related meanings are skeletal Type A, while motion in space is Type B.

DOMAINS OF CONFLATION I

Syn-Sem	Lexical Encyclopedic Indentifiers
Cause	- manners of causation (instruments, degree of volitionality)
Non change vs. change	- specific properties and state descriptions - manners of change
Non scalar vs. scalar change	- types of dynamicity generally (qualities of motion, speed, attitude, shape and orientation of figure, etc.)
multivariate vs. bivariate transition	- types of scalar changes (properties, ordered locations)

source of scale result of change	- specific properties, locations for start and end of scalar path

My assumption is that Lexical Encyclopedic Identifiers can be full verbs or small morphemes within verbs, and/or various satellites like particles. I assume that LEC content can in principle smear all over Syn-Sem structure, and that there is no enforced limit to what you might choose to do with a single memorized lexeme. Some are general, and some are particular; some smear over just one subevental head, some smear over several.

However, we still have a number of major questions to address before we can have a satisfying story for Butt's Generalization and the pattern of loss that turns main verbs into light verbs. Firstly, why is it possible to remove Type B fleshy meanings from some verbs and not from others? Making this a systematic possibility for natural language would grossly overgenerate. Secondly, why is it so easy to subtract physical motion in space and physical transfer from a light verb's semantics? Indeed, even from the evidence of other phenomena, why is it so easy to conflate with motion?

Many verbs that get used as light verbs do have quite impoverished lexical semantic content. But it's not quite zero. If it were zero, then we wouldn't have to have rules for when Type B meanings were negotiable, we would just use the most abstract syn-sem identifiers as light verbs, whose "content" would always unify unproblematically with whatever other subevental information was around in the form of non-finite verbal forms. But over and over again the verbs in question are verbs of generalized movement and transfer in space (attached to different path properties). One interesting, though perhaps radical thought, is that maybe the content that goes away is not part of the lexical semantics after all. In other words, what if motion, location and transfer in space are cognitive defaults that don't appear in these lexical items per se, but are added as conceptual defaults to verbs that have no, or minimal lexical encyclopedic content? If that were true, then there would be a whole other dimension of meaning outside the narrow linguistic system that consistently unifies with syn-sem structure, and we would have the table shown below.

DOMAINS OF CONFLATION II

Syn-Sem	Cognitive Defaults	Lexicon
Cause	caused positional transfer	
non-change vs. change	locations -manners of motion	EVERYTHING ELSE
non scalar vs. scalar change	change of location	
multivariate vs. bivariate transition		
source of scale result of change		

Light verbs would then be verbs that are so abstract that they can always unify with some other verbal element that they are in construction with. When there is no other verbal element to fill in, or embody the event structure of the verb, the "light" verb appears in its heavy use as a verb of physical motion in space. I leave investigation of this line of thought to further research.

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