for M. Rappaport Hovav (ed). Oxford: Oxford University Press.

Verbs, constructions and semantic frames[1]

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1. Introduction

In what ways can events combine to form a single predication? In the simple case, the question becomes, what combinations of events can a single verb refer to? More generally, by "single predication," I intend a unitary grammatical expression of an action, state or combination of actions and/or states applied to a single argument array. When a verb meaning is combined with a meaningful argument structure construction, the resulting combination also forms a single predication. This paper emphasizes an important difference: while verb meanings necessarily designate established semantic frames, the combination of verb and construction can designate a one-time predication that does not correspond to an established frame. We address the slippery issue of what can count as *semantic frame* in the sense of Fillmore (1975, 1982, 1985) or Lakoff (1987) in section 2.3.

2 Terminology

It is important to clarify a few definitional issues including what should count as distinct subevents, when two subevents should be considered causally related, and the nature of semantic frames.

Distinct subevents

It is not always easy to decide what should count as distinct subevents in a single lexical item's designation. Should we construe *sauté* as involving a heat-with-a-small-amount-of-fat subevent and separate stirring subevent? We cannot use the fact that the situation can be described by a single word without begging the question we are aiming to address: can a single verb designate two causally unrelated subevents?

For present purposes, I adopt a conservative criterion for distinguishing subevents. A predicate involves two distinct subevents if and only if there are two independently describable aspects of what is designated by the predicate that do not entirely overlap temporally:

(1) Two events e1 and e2 are distinct subevents of an event E designated by a verb V, iff E → e1 & e2, and e1 is not completely within the temporal extent of e2.

[1] I would like to thank Jean-Pierre Koenig for helpful discussion on this topic. Some of the issues addressed here are discussed in compact form in Goldberg (1995:61-65). An earlier analysis has also appeared as Goldberg (1998), but the analysis here supersedes those analyses.

According to this definition, heating and stirring do not constitute distinct subevents of *sauté* since they overlap temporally: the stirring is completely within the temporal duration of the heating (the stirring may continue beyond the heating, but it is no longer sautéing once the pan is removed from the heat).

Causal relationship

Another question arises as to what should count as a causal relationship. Does having a predisposition to go bald cause one to go bald? It is not clear that we should expect any categorical definition for "causation" since such definitions are rarely available in any domain (Rosch 1975; Lakoff 1987; cf. also Croft 1991; Espenson 1991 for relevant discussion in the domain of causation in particular). The general issue of causation has been debated for centuries, and we are not likely to get to the bottom of it here. At the same time, it is possible to make some progress on the questions we set out to address by focusing on fairly clear cut cases.

In what follows, I will consider any event that is construed to be sufficient to lead to a new state or event to be a cause.

(2) E1 causes e2 if and only if e1 is sufficient to lead to e2.

According to this definition, being predisposed to go bald does not strictly speaking cause baldness because, while it may turn out to be a necessary condition, it is by hypothesis, not a sufficient condition.

Semantic frames: Profile & Background frame

As Fillmore (1977a) wrote, "Meanings are relativized to frames." He defined a *frame* to be an abstraction (an "idealization") of a "coherent individuatable perception, memory, experience, action or object" (Fillmore 1977b). To count as "coherent" and "individuatable," the situation or experience must be construable as a unit. Frames are relevantly the same as Lakoff's (1987) *idealized cognitive models* (ICMs). See Petruck 1996 for an excellent overview of the notion of *frame*.

As discussed in section 3, each word sense evokes an established semantic frame. Within the frame, it is useful to distinguish a word sense's *profile* (Langacker 1987: 118) from the rest of the frame, and we can refer to the non-profiled aspect of a frame as the *background frame* (or *base* in Langacker's 1987 or Croft's 1991 terminology). A word's profile is what the word designates or asserts (if we may use "assert" to describe non-propositional meaning); its background frame is what is taken for granted or presupposed. Examples help clarify the point. *Diameter*'s profile is the line that is designated by *diameter*; *diameter* also requires reference to a background frame that consists of a circle. The meaning of *diameter* thus refers to the frame consisting of a line through the center of a circle, where the line itself is singled out as the profile of the word (Langacker: 185). The background frame, particularly in the case of verbs, may involve complex events that are spread out over time; for example, the verb *divorce* presupposes a previous marriage event as part of its background frame, while it profiles or asserts a legal dissolution of the marriage.

(3)a. A word sense's **semantic frame** (what a word "means" or "evokes")

= **profile** + **background frame**

b. A word sense's **profile**: what the word designates, asserts
c. A word sense's **background frame**: what the word takes for granted, presupposes

A test for whether an aspect of meaning is profiled or part of the background frame is the traditional test for assertion vs. presupposition. Only background frames (or presuppositions) are constant under (non-metalinguistic) negation. For example, the following negated sentences leave the background frames intact:

4. They didn't divorce. (They are still married.)
5. That's not the diameter. (It is the circumference.)

The test indicates that being married is part of the background frame of *divorce*, and a circle is part of the background frame of *diameter*. A background frame (or presupposition) can only be negated using metalinguistic negation, signaled by heavy lexical stress on the word that evokes that frame:

6. They didn't DIVORCE, they weren't even married.
7. That's not the DIAMETER, it's not even a circle!

3. Verbs

In the case of verbs, we can say that an (underived) verb sense corresponds to a semantic frame of predication where such a frame can be defined as follows:

A single semantic frame of predication: a generalized, possibly complex state or event that constitutes a cultural unit.[2] Certain aspects of the semantic frame are profiled; the rest constitutes the background frame.

Consider verbs that profile that a human is somehow removed from a situation or place. That might seem to be a very specific scenario, unlikely to warrant more than one or two dedicated lexical items, but there are actually an abundance of English verbs for variations of this very scenario. Consider the following, surely incomplete list:

Banish
Blackball
Blacklist
Cast out
Deport
Dismiss
Fire
Expel (from school)
Exile
Extradite
Evacuate

[2] For discussion and clarification of the notion of a 'cultural unit" see e.g., Enfield (2002).

Expatriate
Lay off
Oust

Table 1: Partial list of verbs that designate the removal of a person from a situation or place

Several of these words imply that the removed person has somehow transgressed; they differ from one another in various ways, for example, in terms of which organization or place the person is removed from. To *banish* is to remove a person from society; to *expel* (in one sense of the word) is to remove from a school; to *deport* is to remove from a country; to *fire* is to remove a person from their job.

Lay off differs from *fire* in that there's no impugnation of the person who has to leave their job. A person who is *blacklisted* is barred from some type of work, often unfairly and for political reasons. People can be *ousted* only if they are political figures.

One way to view the relationships among this set of verbs is that all of them share same basic profile (removing a person from a location), but each differs in the particulars of the rich background frames involved. As Fillmore (1977) and Langacker (1987) have discussed, reference to frames (again, *bases* for Langacker/Croft) can be used to illuminate meaning relationships between words in this way. Fillmore has cited the examples of *land* vs *ground* that also seem to share the same profile (area of solid earth) but differ in their background frames since the background frame of *land* involves sea and the background frame of *ground* involves air. *Athlete* vs. *jock, lazy* vs. *laid back, washroom* vs. *restroom*, and *father* vs. *dad,* are arguably other examples of words that share the same profile but differ in their background frames.

Conversely, other word senses share the same background frame but differ in what they profile. For example, *lease* and *renter* profile different aspects of the same semantic frame, as do *teacher* and *student*, *soccer ball* and *soccer net* (cf. also Fillmore, 1977) Langacker 1987).

4. Constraints on a verb meaning

Are there constraints on what can serve as a semantic frame for a verb sense? Or is the internal complexity of a verb's meaning only constrained by whether the combination of subevents is viewed as a cultural unit? In sections 4.1 and 4.2 we consider proposed constraints and conclude in section 4.3 that only a Conventional Frame constraint seems to be operative.

4.1 Exclusively causally related subevents?

One proposal for a constraint on the possible semantics of verbs comes from Croft (1991; cf. also 2005) He suggests that "a possible verb must have a continuous segment of the causal chain in the event ICM [idealized cognitive model, aka *frame*] as its profile and as its base" (1991: 20). That is, verbs are claimed to designate only simple events, or complex events in which the subevents are causally related, whether those events are part of the profile or background frame (base).

Causally related & profiled subevents

Predicates that designate both an activity and the endstate of that activity--*accomplishments*—satisfy the criteria of involving two subevents that are causally related (Dowty 1979; Vendler 1967)**.** The activity and the resulting state count as two distinct subevents because the resulting state does not completely overlap temporally with the activity. The two subevents are causally related because the activity is sufficient to bring about the change of state.[3] Examples include *smash* "to direct force on a rigid object with the result that the object breaks into many pieces" and *fill* "to infuse until full." This analysis of accomplishments is in accord with longstanding and widespread assumptions about this type of predicate (see e.g., Gruber 1965; McCawley 1968; Dowty 1979; Pustejovsky 1991; Grimshaw and Vikner 1993; Rappaport Hovav and Levin 1998).

Non-causally related subevents: one profiled, others part of background frame
Yet there exist many verbs whose profiled event is not causally related to an event that is part of its background frame, so Croft's (1991) proposed constraint cannot be correct as it stands. Consider the verb *appeal* as in:

(8) He *appealed* the verdict. mercury.websitewelcome.com/[4]

Appeal in this use presupposes a complex background frame involving a trial which resulted in a verdict of culpability, and profiles a subsequent act of filing legal papers for the purpose of a retrial. The two subevents are not causally related: one does not cause the other, nor vice versa. At the same time, we have as part of our world knowledge the understanding that legal decisions that result in verdicts of culpability may be retried; *appeal* gives a name to this complex frame of experience, profiling the filing of legal papers. Another example is *double-cross* as in (2):

(9) "Ruthless casino owner Willy Bank … *double-crossed* Danny Ocean's friend and mentor Rueben.." videoeta.com/movie/81764

Double-cross profiles an event of betrayal following a state or event of understood cooperation. The betrayal is not caused by the state of trust, nor does the betrayal cause the state of trust. Instead the state of trust is part of the background frame that is presupposed in order for the profiled or asserted act to count as double-crossing.

The verbs *appeal* and *double-cross* (also *divorce*) profile one subevent while their background frames presuppose one or more other subevents, without a causal relation between them. Are there verbs that *profile* two subevents that are not causally related?

Non-causally related and profiled subevents

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[3] Interestingly, in Chinese and Thai the resultant state is often only an implication for many of verbs that would translate as accomplishments with an entailed endstate in English (Singh 1991; Smith 1997; Talmy 2000; Koenig and Muansuwan 2002).

[4] In what follows, I attempt to use attested examples from the web where possible. At the same time, in order to avoid including irrelevant, lengthy and potentially distracting reading material, I have opted to shave the example sentences down, omitting continuations of various sorts. I have also taken the liberty of inserting periods and correcting spelling where appropriate. I also do include constructed examples when minimally different examples are important to the exposition, or of course, when the sentence in question is ungrammatical.

Verbs that profile two or more non-causally related subevents are somewhat harder to find. Yet candidates exist. For example, the cooking term, *blanch*, refers to immersing food, such as tomatoes, briefly in boiling water, then in cold water (in order to remove skin or heighten color). Meat that is *braised* is first browned by being seared with a small amount of fat, and then cooked in moist heat. Two non-causally related subevents are profiled by each of these verbs, insofar as either or both subevents may be negated by non-metalinguistic negation:

(10)a. He didn't blanch the tomatoes, he only dipped them in boiling/cold water.
b. He didn't blanch the tomatoes, he peeled them with a knife.

(11)a. She didn't braise the meat, she only steamed it/browned it.
b. She didn't braise the meat, she roasted it.

These cases indicate that subevents involved in a lexical item's profile itself can be non-causally related.

Croft (1991) had offered the example of "spinning and getting hot" as an impossible meaning for a verb since the two subevents are not causally related. But such a meaning is only impossible if there is no semantic frame that relates these two events. If we can imagine some kind of superstitious ritual in which a ball is spun rapidly on a turntable in an oven until the ball bursts (the time until bursting taken to indicate, for example, the length of a pregnancy), then it is not hard to imagine giving a name to his process, e.g. *The guru* hotspun *the ball*. In fact there is a verb used in pottery-making, *jiggering,* which refers to bringing a shaped tool into contact with clay while the clay is spinning on a pottery wheel.

To summarize, many verbs designate causally linked subevents (*smash, fill,* etc.). Other verbs, however, do not involve a causal sequence of subevents. Some of these cases involve a sequence of subevents in which one or more subevent constitutes part of the background frame for another profiled subevent (e.g., *appeal, double-cross*). The cooking terms *blanch* and *braise* are cases that appear to profile two non-causally related subevents.

4.2 Exclusively manner or result/change of location?

Levin and Rappaport Hovav (2006) suggest a different systematic sort of lexical gap: namely that the specification of both manner, and result or change of location by a single verb is disallowed. Rappaport Hovav and Levin (this volume) clarify that the change of state or location need not be telic; instead, the critical factor is that the predicate be scalar. Scalarity underlies both accomplishment verbs and directed motion verbs in a straightforward way; in the limiting case, verbs with only two points are considered scalar; this allows achievement verbs (e.g., *crack; arrive*) to be assimilated to other result and change of location verbs.

Manner predicates, on the other hand, are defined to be non-scalar (lacking an ordering relation) and/or complex (involving multiple changes). The contribution of a manner component of meaning is generally paraphrasable with a phrase headed with *by* as in (12):

(12) Pat cleaned the tub *by scrubbing it with steel wool.* (RH&L this volume; ex 5b).

Climb would seem to violate the constraint since it appears to designate both upward motion (directed motion) and manner (clambering motion). However, HR&L analyze this verb as having two senses: one result (scalar) (as in, *The plane climbed 1000 feet*) and one manner (non-scalar) (as in, *Kelly climbed the tree*: HR&L's ex. 28).

It does seem to be true that verbs of motion tend to divide between those that designate manner and those that designate a change of location (cf. also Talmy 1985). One can *walk, run, jog* in place and one can *ascend*, *descend* without specifying any particular manner. This may typically be true because the manner of motion and the direction of motion are generally very independent: one can walk uphill, downhill, sideways and in place.

However, the generalization is not exceptionless. *Scale* as in *She scaled the mountain* implies moving upward in a particular (full-bodied) manner. The ski term, to *schuss* means to ski straight downhill (change of location) very fast (manner). RH&L (this volume) suggest that only scalar predicates allow measure phrases (e.g., *They descended 1000 feet (into the valley)*: RH&L's ex 16a). *Both schuss* and *scale* pass this test for scalarity:

(13) She schussed 1000 feet to the bottom of the hill.
(14) She scaled the mountain 1000 feet to the top.

The verbs also paraphrasable with *by* phrases so they seem to pass the test for being manner predicates as well.

(15) She descended the mountain by schussing down it.
(16) She ascended the mountain by scaling it.

Returning to the verb *climb*, a sentence such as (17a) would seem to entail both directed motion and manner, since the sentence includes a measure phrase indicating scalarity; it also entails a particular manner insofar as (17a) would be false if the man were simply hoisted up the rock wall via a rope without moving in a clambering manner; in addition, climbing can be expressed in a manner *by* phrase as in (17b)

(17)a. The man climbed the rock wall 200 feet.
b. The man ascended the rock wall by climbing it (as opposed to being hoisted up on a rope).

It seems manner and change of location are allowed to combine in certain terms because the two facets tend to co-occur as a single culturally recognized unit. Moreover, the manner is dependent on the type of change of location: one cannot schuss uphill; to move up a steep mountain, one's body must be moved in certain ways (cf. *scale, climb*).

The constraint against designating both manner and result appears to hold of verbs like *write* and *scribble*, where *write* requires that something contentful comes to exist

while *scribble* designates a manner without specifying what sort of result comes to exist. But this analysis hinges on what counts as a result. *Scribble* does entail that some sort of written form is created, so perhaps this verb should count as designating both a manner and result. It does appear to pass both the test for scalarity (18a) and the test for involving manner (18b):

(18)a. She scribbled 1000 lines of text.
b. She wrote 1000 lines of text, by scribbling it (on a large envelop).

The difference between *scrawl* and *jot down* would seem to involve the fact that the former implies that the writing is done quickly and sloppily (manner), while the latter implies the writing is done quickly but without necessarily being sloppy (different manner); both *scrawl* and *jot down* imply that written words were created, which would appear to be a result.

Verbs of creation generally seem to allow both manner and result, at least if we consider the creation itself to be a type of result. The difference between *manufacture* and *create* could be attributed to the fact that *manufacture* entails something about the manner of creation: the entity is created by some sort of machinery or systematic division of labor. The differences among verbs of idea-formation would also seem to involve differences in manner; for example, *concoct, contrive, scheme, invent, conceive, hatch, dream up, formulate* differ in whether the process takes time (*concoct, scheme*), whether the process is effortful (*scheme*) or not (*dream up*) among other more subtle distinctions.

Verbs of cooking also would seem to often designate both a manner and a result. For example, the difference between *sauté*, *roast, fry* and *stew* would seem to involve the manner of cooking and yet there is arguably a clear end result as well, as the concoction becomes sautéed, fried, or stewed. Are these verbs scalar? It's not clear what sort of measure phrase would be semantically appropriate. Food can be more or less fried, perhaps, but it's less clear that food can be more or less stewed. But gradability is not required for scalarity (recall that two point achievement verbs are defined to be scalar, but they are not gradable).

Perhaps additional criteria for counting as manner and scalar are required. Further clarification of these terms may be needed in order to evaluate the proposal fairly (see Rappaport Hovav and Levin, this volume).

4.3 Verb meanings must evoke established semantic frames

We have seen that there appear to be exceptions to strong constraints on what can count as a verb meaning, at least as the constraints have currently been formulated. Yet there is, at least, a Conventional Frame constraint:

Conventional Frame constraint: For a situation to be labeled by a verb, the situation or experience may be hypothetical or historical and need not be directly experienced, but it is necessary that the situation or experience evoke a cultural unit that is familiar and relevant to those who use the word.

Clearly one need never be banished in order to use the word, *banish*. But speakers would not use the label unless they were, and expected those they were speaking with to be,

familiar with the frame associated with banishing. That is, if a situation were wholly unfamiliar to speakers of a language, then there would be no frame for the situation and no corresponding label for the situation. The conventional frame constraint does not require stipulation, as it follows from principles of cooperative communication (e.g., Grice 1975).

It appears that the only constraint is that a single verb's meaning cannot involve two or more subevents that are not related by a semantic frame, as Fillmore (1977) had proposed. Any semantic frame offers the *potential* for a lexical label. At the same time, the existence of a frame is not sufficient for the existence of a word meaning.

4.4 The existence of a frame does not entail that a verb exists to label it

Not all recurrent aspects of experience happen to be labeled. Although we are all aware that people are sometimes forcibly removed from bars, there is no verb that designates this action (although there is a word for the person who performs this action: *bouncer*). Many of these gaps do not appear to have a ready explanation. For example, while we have a verb *dine* that captures the complex event of eating out at a nice restaurant, we have no corresponding verb specifically for eating at a more casual restaurant.

We saw that individual verbs often (although not always) evoke causally linked subevents. But the existence of causally linked subevents is not sufficient for an event to be labeled by a verb, even if the complex situation is a familiar, regularly occurring one. For example, the subevents of feeling warm and opening a window to allow in a cool breeze do not form a scenario that is named by a single verb. (To *air out* is not such a verb because houses are not aired out because their occupants are warm). Some of us regularly miss deadlines, and yet there is no single lexical item that designates this failure. Different languages can be expected to have different lexical gaps, since the gaps are idiosyncratic (see e.g., Majid and Bowerman 2007).

Thus verb meanings correspond to semantic frames of predication, which designate generalized, possibly complex states or events that constitute cultural units. The subevents within a semantic frame need not be causally related, and at least occasionally designate both a manner and result. But the subevents must combine to designate a coherent, familiar situation or experience that constitutes a cultural unit. In what follows, we will see that *combinations* of verb and construction are not subject to the Conventional Frame constraint. But before we focus on combining verb with constructional meanings, we need to review the notion of constructional meaning.

5. Predications designated by combinations of verb and construction

There is a growing consensus that it is important to distinguish a verb's inherent or "core" lexical semantics from the semantics associated with the grammatical structures in which the verb can occur (e.g., Jackendoff 1990; Goldberg 1989, 1992, 1995; Rappaport Hovav & Levin 1998, 1999). That is, simple sentence types are directly correlated with semantic structures. For example, in English we find the following correspondences:[3]

[3] The form of constructions abstracts over the linear order of constituents. For example, I assume the same ditransitive construction is involved when it is questioned, e.g. *What did Pat give Chris?* or clefted, e.g. *It was a book that Pat gave Chris*. I should also note that the constructional semantics given in Table 3 is

Ditransitive:	(Subj) V Obj1 Obj2	X CAUSES Y to RECEIVE Z
Caused-Motion:	(Subj) V Obj Oblique	X CAUSES to MOVE Z
Resultative:	(Subj) V Obj Pred	X CAUSES Y to BECOME Z
Transitive:	(Subj) V Obj	X ACTS ON Y; X EXPERIENCES Y
Way construction:	(Subj$_i$) V [poss$_i$ *way*] Oblique	X CREATES PATH & MOVES

Table 2: English Argument Structure Constructions

That is, linking generalizations on this view, are statements about argument structure constructions; individual verbs typically code much richer, more complex frame semantic meanings.

Each argument structure construction in Table 3 itself designates a general, very abstract semantic frame: transfer of something from one person to another, causation of something to a new location, causation of a state change, and directed action. In fact, in the cases of argument structure constructions, the frames involved are necessarily basic and very commonly experienced; otherwise they would not be frequent enough to be considered argument structure constructions. As I put it in earlier work, "Simple clause constructions are associated directly with semantic structures that reflect scenes that are basic to human experience" (Goldberg 1995: 5).

Since the meanings in Table 2 are so abstract, it might seem that the semantic frames associated with constructional meanings are all profile and no background frame. In fact, these abstract predicates do contain little in the way of background frame, presumably because constructional meanings arise from generalizing over many different verbs (e.g., Tomasello 2003; Goldberg 2006). So in many cases, the semantic frame consists only of the profiled relation. But this is not always the case. The *way* construction is used to convey the creation of a path and movement along that path (Goldberg 1995); in the case of this construction, only the motion is profiled--the creation of the path (implying motion despite difficulties or obstacles) is part of its background frame. This is evidenced by the fact that metalinguistic negation is required to negate the presupposition that the motion was difficult in some way:

(19)a. #She didn't make her way into the room, there was a clear path ready for her.
b. She didn't MAKE her WAY into the room, there was a clear path ready for her.
(ok to negate the backgrounded creation of a path with metalinguistic negation)

Once we can acknowledge that verbs and constructions can each convey meaning, a question arises as to whether there are any general semantic constraints on their combination.

6.1 Constraints on combinations of verb and construction

It is clear that the most common and prototypical case is one in which the verb and the construction do not designate two separate events. Rather the verb designates the same event that the construction designates, or the verb elaborates the constructional meaning.

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somewhat oversimplified, since each formal pattern is typically polysemous (See Goldberg 1995, 2006 for discussion).

For example, if we assume that the ditransitive construction has roughly the meaning of transfer, "X CAUSES Y to RECEIVE Z" then it is clear that the verb *give* lexically codes this meaning. The verbs *hand* and *mail* lexically elaborate, or further specify, this meaning. More interestingly for the present purposes are cases wherein the verb does not itself lexically designate the meaning associated with the construction, in which case we have two distinguishable events.[4]

Causally linked events
A common pattern in English, Chinese, and Dutch is that the verb can code the *means* of achieving the act designated by the construction (Talmy 1985; Goldberg 1995). This is the case in each of the following attested examples:

(20) a. I literally had to close my eyes every time they *kicked* him the ball.
www.extremeskins.com/forums/

b. I actually had a moth go up my nose once. I…*coughed* him out of my mouth.
bikeforums.net/archive/index.php/t-292132

c. He *wrote* his way to freedom. books.google.com/books?isbn=1593080417

Kicking is means of achieving transfer; coughing is the means of achieving caused-motion; and writing is the means of achieving metaphorical motion.

Pinker (1989) discusses the following example from Talmy (1985):

(21) The bottle floated into the cave.

He notes that this sentence is not felicitous in the situation in which the bottle is carried into the cave in a bowl of water. It is only acceptable in the case that the floating is the means of the bottle moving into the cave.

Goldberg (1995:62) observes that verbs of sound emission are more felicitiously used in motion constructions when the sound is construed to be a result of the motion. Consider the contrast between (22a-b) and (23a-b):

(22)a. another train *screeched* into the station,
www.wunderland.com/WTS/Andy/EmptyCity/
b. a tank *rumbled* down the street at a high rate of speed.books.google.com/books?isbn=0312980442

(23) a. % The bird *screeched* out of its cage. (to mean that the bird happened to make a screeching sound as it flew out of its cage.)
b. % Elena *rumbled* down the street. (to mean that her stomach rumbled as she walked down the street.)

[4] I do not rely in this case on the before mentioned criterion for determining distinct events. In particular, the events may be temporarily coextensive in some cases. It is clear we have distinguishable events once we recognize that one is designated by the verb, and another by the construction.

Notice the same verbs, *screech* and *rumble*, are used in both (22 a-b) and (23 a-b), and yet the examples in (22) are fully acceptable to all speakers, while those in (23) are rejected by many (this is indicated by "%"). The difference is that in the examples in (22) the sound is caused by the motion, whereas in the examples in (23) the sound is not caused by the motion, but is simply a co-occurring event.

Verbs may also designate other aspects of causal events such as the instrument (24a) or the resultant state (24b):

(24) a. Gilbert *wristed* the ball into the back of the net. www.cstv.com/sports/
(the wrist is the instrument of the caused motion)
b. She *warmed* the scissors at the fire. www.folk-legacy.com/store/scripts/
(warm is the endstate of her acting on the scissors).

Therefore, as we saw was the case with lexical accomplishment verbs, it is possible to combine two subevents into a single predication if a causal relation holds between the two subevents.

Preconditions

Verbs are not necessarily causally related to constructional meanings. If we assume that the ditransitive construction has roughly the meaning of transfer, i.e., "X (intends to) CAUSE Y to RECEIVE Z" (e.g., Goldberg 1992b), then we find that this construction allows the verb to designate a precondition of transfer, namely, the creation or preparation of the transferred entity, as for example in (25):

(25)Orlando *baked* his sister a cake. www.englishclub.com/young-learners/

Here the preparation of the cake is a precondition for Orlando's transferring the cake to his sister.

Similarly, for a theme to move in a direction requires a precondition that the theme be free of physical restraints. In the following attested examples involving the caused motion construction, the verb designates the precondition of removing constraints that will enable motion; the construction designates caused motion.

(26) a. He *freed* the prisoner into the crowd, as he had been ordered.
www.angelfire.com/mo/savagegardener/
b. The girl… *unleashed* the dog into the west slums.
boards.stratics.com/php-bin/arcpub/

These cases are reminiscent of the lexicalized verbs that encode both some sort of precondition and asserted event (e.g., *appeal, double-cross*). Thus just as verbs may encode subevents related by a causal relation or subevents in one serves as a precondition for another, so too, can combinations of verb and construction (see Goldberg 1998 for further parallels between verbs and more complex predications).

We now focus on an important difference between lexicalized verbs on the one hand, and verb + construction combinations on the other. We have seen that lexicalized

verbs always evoke established semantic frames. In the following section, we observe that combinations of verb and construction can instead evoke novel events.

6.4 Frames, verbs and constructions

Does the Conventional Frame constraint hold of combinations of verb and construction? That is, do novel combinations of verb and construction only designate (unlabeled but) preexisting semantic frames?

We have seen that the ditransitive construction can be combined with verbs of creation that do not themselves designate transfer. We know that what is transferred from one person to another is often created for that purpose; thus the creation of the transferred entity is a salient precondition within our frame semantic knowledge of transferring. At the same time, we need not have preexisting frames that involve the combined semantics of specific verbs with argument structure constructions. For example, while it *is* arguably the case that we do have a frame of experience in which someone bakes something for someone else, it would be a stretch to say that we have an existing semantic frame that involves microwaving something for someone. And yet we can readily say both (27) and (28):

(27) I *baked* her a loaf of homemade apple bread.
community.southernliving.com/showthread.php?t=5054
(28) I *microwaved* her some leftover noodles.
not-quite-sure.blogspot.com/ 2006/01/pancakes-against-drugs.html

That is, while the combination of an abstract meaning associated with a general verb class, together with an argument structure predication does seem to require a preexisting semantic frame, the more specific meanings that arise from the combination of an argument structure construction and a specific verb do not. To take another example, we can be said to have a general frame of knowledge involving forces that cause motion; and we also can be said to have a specific frame in which strong winds blowing may cause movement; this more specific frame is evoked when *blow* is combined with the caused-motion construction as in (29). At the same time, one would be hard pressed to claim that we have a preexisting semantic frame that involves the idea that sneezing can cause motion and yet the attested examples in (30) is also acceptable:

(29) It *blew* the beard right off of the Captain's chin.
www.emule.com/2poetry/phorum/read.php?7,214604,214649

(30) She *sneezed* the tube right out of her nose!
journals.aol.com/gosso23/my-breast-cancer-story/ entries/2007/09/06/moms-in-the-hospital/630

The idea that verbs can combine with constructions in truly novel ways is supported by the fact that one does not find unique simple morphemes in language that designate the requisite meanings. I'd venture to say that no language has a unique simple morpheme *snope* that specifically means "to move by sneezing" and no language has a unique simple morpheme *micrim* to mean to intend to give something prepared by microwaving. It is in this sense that the meanings involved are "implausible" verb meanings (Goldberg 1995, 2006).

The *way* construction for some speakers allows the verb to designate a co-occurring activity that is not directly related to the action designated by the construction (see Levin & Rapoport 1988, Jackendoff 1990, Goldberg 1995 for discussion of this construction). For example,

(31) He wheezed his way through all 3 grades.
(about a child with asthma, reported by Kay Bock, heard on the WILL radio station, May 7, 2003)

The relationship between verb and construction in this case is that of simple co-occuring activity. Since we don't find underived verbs in any language that convey both metaphorical motion and some unrelated activity such as wheezing, it is safe to say that the meaning of "metaphorical motion while wheezing" is not a preexisting semantic frame.

7.Conclusion

This paper has explored the question of what constitutes a unitary semantic predication. It was argued that the constraints on what a verb can mean are dependent only on the notion of *semantic frame* (cf. Fillmore 1977). The subevents associated with a verb's meaning need not be causally related as has been proposed, and may also encode both manner and result as long as their exists a semantic frame that unites both meaning components. The events designated by combinations of verb and argument structure construction are in some ways parallel to subevents within a lexical item's semantic frame. Most often, the verb and argument structure construction do not profile distinct events; when they do, the verbal event and the event profiled by the argument structure relation typically stand in a causal relationship. However, other sorts of relationships including precondition and co-occurring activity also sometimes hold.

The present paper also focuses on an important difference. Verbs necessarily evoke established semantic frames. On the other hand, while classes of verbs are related to argument structure constructions by general, abstract frames, particular verbs may be combined with argument structure constructions to designate novel events that do not evoke any preexisting semantic frame.

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For example, a verb like *remodel* as in (12) implies a number of complex subevents (as anyone who has attempted to remodel realizes), including making a conscious decision, hiring a contractor, determining the scope of the project, having others destroy/rebuild/repaint some space over several days or weeks or months, with the resultant state that a space is, (with any luck), noticeably improved.

(12) They *remodeled* the vacant apartment. www.context.org/ICLIB/IC14/Garden.htm

This entire scenario may be labeled by a verb (packaged as a unit) because the subevents cooccur with some regularity. Also, in this case, the subevents are related to one another by sharing the same overall goal: that of improving some space. At the same time, many of the subevents cannot be said to *cause* the improvement; they are instead preconditions for the fulfillment of the goal.