9.3 Alternations in Direct versus Oblique Objects

To see how syntactic patterns of alternation between direct and oblique object relate to the proto-roles hypothesis, we will distinguish among four semantic subtypes: alternating *load*-type verbs, non-alternating *fill*, *hit*-type verbs, and representation-source predicates (*photograph a landscape*).

9.3.1 The *spray/load* cases.

The venerable examples involving alternations of direct and prepositional objects with the verbs *spray, load, smear*, etc. have a long history in modern linguistics (beginning at least with Hall 1965). As early as 1971 it was pointed out by Anderson (1971), though also hinted at by Fillmore (1971:368) as well, that the pairs in (49) and (50) are not complete paraphrases, but rather the (a) sentence suggests the total supply of hay or paint is affected, while the (b) sentences suggest that the cart is completely filled or that the wall is fully covered with paint:[1]

(49) a. Mary loaded the hay onto the truck.
b. Mary loaded the truck with (the) hay.

(50) a. Mary sprayed (the) paint onto the wall.
b. Mary sprayed the wall with (the) paint.

If this claim is correct, then such examples are another case of semantic variation across multiple argument configurations of the "same" predicates that is consistent with the proto-role hypothesis and argument selection principle: the proto-patient entailment of Incremental Theme is always an entailment of the actual direct object in these cases (as some would say, the "surface" direct object), no matter which of the two NP appears in this syntactic position. An Incremental Theme, it will be recalled, is a NP that can determine the aspect of the sentence, since the parts of the event correspond to parts of the NP referent that are affected by the action; the event is "complete" only if all parts of the NP referent is so affected (or effected). The event of loading the truck with hay is partially or completely done, according to whether the truck is partially or completely full of hay, but the event of loading the hay onto the truck is partially or completely done according to whether the quantity of hay in question is partly or completely on the truck (regardless, in the last instance, of whether this completely fills the truck or not).

Again, this is a candidate for a semantic default phenomenon: The difference

[1] Recent articles that have also been concerned with this difference include Hopper and Thompson 1980, Rappaport and Levin (1988), Tenny (1987, 1988).

seems both subtle and systematic across verbs, thus perhaps unlikely to have be learned individually verb by verb, and it is a difference consonant with the proto-role definitions and selection principles.

Notice the difference between this way of talking about roles in (49)-(50) and the more traditional one: in Jackendoff's and Gruber's terms, *the hay* is the Theme in both (49a) and (49b), presumably because it is "the thing which moves." Still, another traditional sufficient criterion for Theme-hood is "thing which undergo a change of state", e.g. *the house* in *John painted the house* is counted as Theme, as do many effected and affected objects, though the house doesn't move. Thus in this class of events, TWO things undergo the kinds of change of state that are, at least sometimes, sufficient to qualify them as Themes: there is an ambiguity even in the traditional assignment criteria for this class of verbs.

Note that an assumption in my discussion is that the two different subcategorizations for such a verb correspond to different meanings for the verb that are recorded as independent items in the lexicon (or, as distinct though related ones, perhaps connected by lexical rules[2]), ***not*** to two different surface structures derived from the same deep structure. If one wanted to adopt the latter approach, it would be necessary to postulate a surface structure interpretation rule to determine the aspect of the sentence. (Anderson (1971), in fact, proposed such an analysis.) The main reason for rejecting that approach is that not all verbs which show the alternation in syntactic configuration have such a difference in aspectual meaning (as we will see with verbs like *hit* in §9.3.3. below), so the phenomenon cannot be a general compositional semantic one associated with direct objects of three-place verbs. Conversely, not all incremental themes are direct objects: as mentioned in §6, subjects, pairs of PPs, or verbs alone sometimes verbs alone can "encode" incremental themehood. The additional fact

[2] That is, I am assuming that the relationship between the verb in *load the truck with hay* and that in *load hay onto the truck*, like that in the collective-subject-alternation (§9.1) and the psych-movement (§9.2), is to be described by a lexical rule in the sense of Dowty (1978, 1979: chapter 6). See these works for a full discussion, but briefly, lexicl rule in this theory is one which supplies a hypothetical derived lexical item and a (rule-predicted) hypothetical meaning for it for each word in its domain; some of these possible lexical items are (individually) learned to be actual ones by a speaker, and the speaker learns an actual meaning for each which is usually similar to but can differ unpredictably from the meaning given by the lexical rule (e.g. *readable* means more than "capable of being read"). I assume such rules include not only word-derivation cases (*decision* from *decide*) and zero-derivations (noun *walk* from verb *walk*) but also "lexical" phrases (*egg on* or *hammer flat*) and changes in valence, including detransitivizations and the changes in argument configuration discussed in this paper. I will assume for purposes of this paper that the lexical rule for *load*, etc. would itself probably give a meaning for derived *load* such that *load the truck with hay* is indeed the same as *load hay onto the truck*, and that such semantic differences as are noted below for some but N.B. not all instances of this pattern arise because speakers often acquire an actual meaning for the derived lexical item that differs slightly from the lexical-rule predicted interpretation but on the other hand conforms more closely to entailment patterns fitting the Proto-Role selection principles.

which is of course suggestive of a lexical phenomenon is that not all verbs which do have the Incremental Theme interpretation of the direct object participate in the syntactic alternation (cf. e.g. *cover* and *fill*, discussed below).

All of this, of course, assumes the aspect/aktionsart difference Anderson and Fillmore intuitively felt in these examples is correct. Today, aspect and aktionsart are better understood than in 1971, so we should be able to back up their intuitive observations, if correct, with known semantic diagnostics for aspect. One's first intuition about such aspect differences is, after all, not always reliable.[3] I believe this aspectual claim IS correct, though there are a number of complications to be dealt with in order to demonstrate that this is so.

First of all, the examples one often sees have a bare plural or mass term in one of the relevant NPs, or the determiner parenthesized in the examples comes and goes sporadically and without comment. Yet it is independently known (Verkuyl 1972) that such a NP can make an otherwise telic sentence behave like an atelic (or durative); cf. §6 above. In order not to be manipulating two variables at once (the *with* vs. *onto* alternation and the definite/bare mass noun distinction), let us avoid bare plurals and bare mass nouns for a moment and use only definite NPs.

Consider first sentences with *complete* or *finish* and what one can conclude from them (cf. Dowty 1979, pp. 57, 181); these of course entail a perfective interpretation of some kind or other:

(51) a. Mary completely loaded the hay onto the truck.
b. Mary completely loaded the truck with the hay.

Suppose we ask in each of these two cases, the questions in (52):

[3] For example, Tenny (1987:156) asserts, without applying any of the standard aspectual diagnostics or giving any other semantic justification, that *John shaved himself, dressed himself, bathed himself* are telic (in her term "describe a delimited event"), while *John shaved, dressed, bathed* are atelic ("non-delimited"). But I can find no corraboration for such a difference by the usual tests, and when I tried putting such predicates in standard diagnostic frames and querrying several English speakers about this data, I found no consistent judgment that the reflexives are interpreted more telically than the intransitives. Conceivably there really is some kind of ephemeral aspectual distinction here, but it is apparently not the normal telic vs. atelic one: the point is that raw intuitions about an isolated example are not a satisfactory guide to aspectual analysis, particularly in view of the familiar problem that in English most lexical predicates are themselves ambiguous (or indeterminate) in telicity, with pragmatics often making one or the other possibilities prominent (Dowty 1979:60-62). (NB that Tenny employs reliable diagnostic tests elsewhere in Tenny 1987.)

(52) a. Was all the hay put onto the truck?
b. Was the whole truck full of hay?

For statement (51a), the answer to the first question is "yes" and to the second question is "not necessarily." This implies the NP *the hay* is an Incremental Theme and the NP *the truck* is not. Conversely, if the NP *the truck* really is an Incremental Theme in (51b), then the answers for that statement should be "not necessarily" for question (52a) and "yes, definitely" for (52b). But in fact, the answers here are not so clear. Some people are inclined to say that (51b) is really only appropriate if the quantity of hay is such as to fill the truck exactly, so no hay or truck space is left over. (Others say 52b is an odd question here.) Notice, though, that if we change the statement by reintroducing a mass term in the non-direct-object position, as in (51b'),

(51) b'. Mary completely loaded the truck with hay.

then the sentence is more natural, the answer to (52b) is yes, and question (52a) now makes little sense, since no particular quantity of hay seems to have been refereed to (except, maybe, just the quantity that DID end up on the truck, but (52a) has a totally trivial yes answer on that interpretation). This situation IS perfectly consistent with the hypothesis that *the truck* is the only Incremental Theme in the sentence, since an Incremental Theme but not necessarily other arguments must be definite for a sentence to be understood in perfective aspect (as *completely* requires). By contrast, (51a') is anomalous, as it should be if the direct object is Incremental Theme and if we follow Krifka (1987, 1989) in treating telics as homomorphisms from such arguments into events:

(51) a'. #Mary completely loaded hay onto the truck.

What I think complicates the situation with the original (51b) is that one inevitably takes into account not just the literal meaning of the sentence but also interprets them in light of the purposes people have in performing the actions they do. The purpose of trucks and carts is to move stuff around (we don't generally acquire the stuff just to get the carts and trucks filled), and since (51b) mentions a definite quantity of stuff, it is natural to take the overall purpose of Mary's action to be transporting that quantity of stuff somewhere. If the truck is full but part of the stuff is left over, then in a broader sense Mary's work probably is not finished. On the other hand, we are not generally so bothered with extra space left over in a cart or truck if all the stuff we want to move is loaded inside. Contrast the above with (53):

(53) a. Mary completely sprayed the wall with this can of paint.
b. Mary completely sprayed this can of paint on the wall.

(54) a. Was the wall completely covered?
b. Was all the paint used up?

In (53a), we have little reluctance to say the task is complete if the wall is covered but there is still paint left. But a difference between painting walls and loading trucks is that the purpose of the former is most usually to get the wall covered---not just to move the paint around---hence having paint left over is generally not the problem that having stuff left over after the truck is loaded often is. Still, (53a) might be understood another way: imagine that the paint has a chemical in it which repels termites if the paint is applied in sufficient thickness, that Mary's purpose is not to achieve a particular color or appearance on her basement wall but to achieve adequate termite resistance in it. Then if the paint was just the quantity needed for adequate termite protection, we might well not regard the action done until all the paint was used up, even if the whole surface had been covered by at least some paint. This interpretation is actually also consistent with the proto-role hypothesis, I believe, because the wall still undergoes a definite change of state (becoming sufficiently protected), but this points up another difference between loading trucks and painting walls: though one normally does stop painting a wall after it is completely covered, one actually can go on putting paint on it indefinitely---in a way that one can't keep on loading a truck after it's fully loaded. In other words, *spray paint on the wall* (as well as *spray the wall with paint*) can have an atelic (or *activity*) sense as well as a telic (*accomplishment*) sense.

This observation is relevant to applying other aspectual tests to these sentences, such as *for an hour* vs. *in an hour*. The former is a durative adverbial and is only intelligible with a predicate that can have an atelic (activity) reading. The latter by contrast only occurs with a telic reading of a predicate (i.e. accomplishment, achievement or inchoative). Cf. Dowty 1979:56-64,332-336, 340-348) for discussion of these tests. Now Verkuyl's observation was that a bare plural or mass term put in certain syntactic positions makes a telic predicate into an atelic one. So if our hypothesis is correct that the direct object is always the Incremental Theme in such examples, then changing THIS NP from definite to bare plural or mass should alter the telicity and hence the adverbial possibilities, while altering the OTHER object NP should not. First, the definite NP *this wall* is alternated with mass term *paint*:

(55) a. John sprayed this wall with paint in an hour.
b. (#)John sprayed this wall with paint for an hour.

c. #John sprayed paint onto this wall in an hour.
d. John sprayed paint onto this wall for an hour.

We predict that (b) and (c) should be bad, while (a) and (d) are good. This is

borne out in (a) and (d), as well as (c) (though (c) does have a marginal but irrelevant inchoative reading "it took an hour for John to start spraying the paint"), which is in accord with the hypothesis because an inchoative is a kind of telic reading). But (b), which should be bad, sounds OK. The reading it has, however, is the aforementioned atelic or activity one: it's not possible to understand the event to be described here as having an inherent completion point, either in terms of getting the wall to a definite state or the paint used up.

We now test examples where the NP referring to the paint mentions a quantity but the NP referring to the place does not: recall that bare plurals---here *subway cars*--- are just like bare mass terms in their effect on aspect:

(56) a. #John sprayed subway cars with this can of paint in an hour.
b. John sprayed subway cars with this can of paint for an hour.

c. John sprayed this (whole) can of paint onto subway cars in an hour.
d. #John sprayed this (whole) can of paint onto subway cars for an hour.

As predicted, it is again the direct object NP that controls the acceptability of the time adverbial, never the other NP. Notice that example (d), which is parallel to the problematic example (51b) above, is clearly anomalous and does not admit an atelic (activity) sense instead, as (51b) did: while one can keep putting more paint on the same wall, even after it's covered, there's no (normal) way to keep putting the same quantity of paint on something over and over again. ((56a) does have the marginal inchoative reading on which it makes sense.)

Incidentally, one should not be mislead by the absence of detectable aspectual difference between the ablative and abstrument examples like the following (*Abstrument* is a term Hook (1983) coins for the role of the NP marked with *of* below, by analogy to "ablative" and "instrument"; an abstrument is an oblique NP denoting the thing or substance removed from a space):

(57) a. John stripped the bark from the tree.
b. John stripped the tree of (its) bark.

(similarly *wash sand off the beach/wash the beach of sand, empty water from the tank, empty the tank of water*, etc.)

In these cases, the quantity of space is originally occupied by a certain quantity of stuff: removing all the stuff from the space entails vacating all the space, and conversely, vacating all the space entails removing all the stuff. Only with converging predicates (like *load, spray*) can one sensibly use up all of a

preexisting quantity of filler without filling up all the space--or conversely--, and thereby detect an aspectual difference between the two forms. This difference is a consequence of the physics of space (e.g. one could not have started with a space "occupied" by a quantity of stuff larger than the space would actually hold, and then vacate all the space without removing all the stuff), not anything exceptional that needs to be explained about the semantics of English. (Here again, a failure to recognize the contribution that facts about the world make to "meaning" could make the linguist's task seem harder than it is.)

9.3.2 Lack of alternation in objects with *fill* and *cover*

As Mellema (1974), Fillmore (1977), and others have observed, the verb *cover* does not participate in this same direct object alternation that *spray, load,* etc. do:

(58) a. Bill filled the tank (with water).
b. Bill covered the ground (with a tarpaulin)

(59) a. *Bill filled water (into the tank).
b. *Bill covered a tarpaulin (over the ground).

Aspectual tests will confirm that the direct object, not the prepositional object, is an Incremental Theme in (58), so these verbs are in accord with the Argument Selection Principles.

One might wonder WHY (if indeed for any reason) these verbs do not alternate in this pattern, as *spray* and *load* do. It is tempting to respond that intuitively, the notion of producing a completely occupied space or a completely overlaid surface or opening seems fundamental, a "core" part of the meanings of these verbs, in the way that a completely affected space is not for *spray* or *load.* But then a deeper question is why, if for any reason, these particular verbs should differ from others in this respect. It is apparently not because of an inherent semantic incompatibility, for English-speaking children have been observed to temporarily produce examples like *I filled water into the glass* (cf. Bowerman 1982, Pinker 1989:25,26), so a theory should not predict that the other syntactic form (and meaning, presumably) is impossible. One might speculate that the existence of the morphologically related adjective *full* (and historically the root of *fill*, which is a causative) and noun *cover*, both entailing complete occupancy/coverage of the space

in question[4], help maintain the restriction of these verb meanings to a locative Incremental Theme and have prevented the child's temporary innovation from surviving into the adult language, over the many centuries these forms have existed in English.

The two-place forms of these verbs, (60)-(61),

(60) a. Water filled the tank.[5]
a'.*Water filled into the tank.
b. Snow covered the ground.

(61) a. The tank filled with water.
a'.*The tank filled water.
b. *The ground covered (with) snow.

illustrate not only that a subject can sometimes be an incremental theme, as in (61a), but also that the subject can ONLY be the Incremental Theme when the verb is intransitive (*The tank filled*) or expresses its other argument via a prepositional phrase rather than a grammatical direct object, (61a). (Conversely, the Incremental Theme is not happy in a prepositional phrase, as (60a') shows.) It is cases like this that show that the argument selection principles must be formulated to require only that grammatical direct objects have more proto-patient entailments than subjects, not that any non-subject argument be more patient-like than the subject.

[4] By contrast, the cognate noun *load* need not always refer to stuff filling a fixed, predetermined amount of space, as shown by *She carried a load of books with her,* so any implication to that effect, e.g. in, *We need three loads of gravel for this job,* is probably implicature. A cover, on the other hand , is always something completely overlaying (or surrounding) some relevant other object, or something originally constructed or intended to do so. The suggestion here, put in terms of the hypothesis mentioned in §9.1 and discussed in §10 that argument selection principles can act as defaults in language acquisition, is that the association of Incremental Theme entailment with the locative argument might be made so vivid by *full* and noun *cover* that this association is individually learned for these verbs and thereafter immutable, while for the *spray/load* class it is not individually learned but supplied as a default entailment of direct objects in each of the two syntactic configurations the verbs occur in, giving rise to the slight alternation in meaning between the two configurations. But once the entailment of *fill* and *cover*with respect to their locative arguments is "frozen", the selection principles would then permit them to occur only in the form in which the direct object is the locative argument.

[5] This example looks similar to cases like *The crowd entered the auditorium*, for which I earlier claimed that the subject *the crowd* could be the Incremental Theme. But there is a subtle difference, as can be seen by comparing *The crowd entered the auditorium halfway/partly* with *The water filled the tank halfway/partly*: from the former, we can conclude that some percentage of the crowd has entered, but we cannot conclude anything about the percentage of the auditorium that is occupied. On the other hand, from the latter we can conclude that some percentage of the tank is occupied, not that a certain percentage of some quantity of water is in it; thus *the tank* in (60a) is the Incremental Theme.

9.3.3 *Hitting* versus *Breaking*

In another classic article, Fillmore (1970) pointed out that there are a number of verbs of physical contact such as *hit* which yield (truth-conditionally) synonymous alternations of their direct objects with their prepositional objects as in (62),

(62) a. John hit the fence with the stick.
b. John hit the stick against the fence. (= 62a))

while on the other hand there are verbs like *break* that do NOT yield synonymous alternations:

(63) a. John broke the fence with the stick.
b. John broke the stick against the fence (≠ 63a)

Fillmore observed that (i) *break* entails a visible and permanent change of state in its direct object argument (while *hit* and similar verbs do not), and (ii) this change of state is entailed for *the fence* in (63a) but for *the stick* in (63b).

What is of interest to us is the negative generalization (not explicitly drawn in the early literature, as far as I know): there are no verbs which are like *break* in entailing a change of state for only one of its non-subject arguments but which produces a synonymous alternation between (a) and (b) forms like those above. Rather, such a change-of-state entailment argument is always entailed for the direct object argument, never for an oblique object argument. This generalization would in fact be mandated by the proto-role and argument selection principle: assuming the number of other proto-patient arguments for the two non-subject arguments is otherwise equal, a change-of-state entailment for one argument but not the other would, according to the selection principle, make the first outrank the other for direct object status.

But what of the *spray/load* class, which does allow both syntactic configurations? Isn't a change of state entailment involved here? The important difference, I believe, is that with these verbs BOTH non-subject arguments are entailed to undergo significant changes of state: in loading a truck with hay, the hay changes location, but the truck also changes from an unloaded to an loaded state.[6]

[6] By "significant", I mean that this change of state is different from, for example, the (semantically well-defined) change that a place necessarily undergoes when another object is moved from or to it, as for example the locative argument in *put the book on the table* or *arrive at the city*: we do not ordinarily classify tables according to whether an object has moved onto it or not, or cities as to whether someone has arrived at them or not, in the

Note that the *hit* class verbs denote events that are not aspectually subdividable vis-á-vis either object argument: If the act of hitting the fence (once) with the stick is interrupted but not completed, it's can only be because the stick has not yet contacted the fence at all, not because only part of the stick has hit the fence or because only part of the fence has been hit. That is, neither object can be a (non-trivial) Incremental Theme, so there is no semantic alternation here in Incremental Theme interpretation of the kind seen with *spray/load*.

Thus the properties of the three classes of verbs discussed are as follows:

(64) I. *spray/load* class

a. entail change of state in both arguments (N.B. different changes of state), either could potentially be Incremental Theme (the "measure" of the event)

b. appear in both syntactic patterns, but with slight change of meaning, viz. in Incremental Theme,which is always direct object argument; other entailments "alternate" with change in syntactic pattern

II. *break* class

a. entails change of state (and Incremental Themehood) in only one argument

b. radical change in meaning from one pattern to the other: change-of-state is fixed with direct object, and other entailments alternate.

III. *hit* class

a. No difference in proto-role entailments between arguments (but concerning motion, see below)

b. complete synonymy between two patterns: all entailments alternate.

same way as we classify trucks as to whether a load has been put in them or not or not, walls as to whether paint has been applied to them. See the discussion of relative "significance" of changes of state in (62) vs. (65) vs. (66) below.

These patterns are all in accord with the selection principles. Note also that it is difficult to see how a (semantically non-ad-hoc) classification in terms of "atomic" thematic roles could combine with an argument selection principle to describe these classes economically: My description crucially relies on the fact that traditional "Theme" is decomposed into several properties (change of state, incremental theme, versus other verbal entailments) and that argument selection depends on the weighting of these entailments, though can often be "floating" where arguments do not differ in these particular entailments. The advantages of eschewing atomic roles in favor of a count of individual entailments for argument may be even greater if if as suggested below the relative IMPORTANCE of each entailment in a verb's meaning is a factor in selection.

The *hit*-class of verbs are also relevant to the question, mentioned earlier (§7), of the status of motion entailments in argument selection. If motion, as a change-of-state entailment, counted as a proto-patient property, it would seem that *hit the fence with the stick* entails movement for its prepositional argument but not its direct object argument. Since there are no entailments of change of state to distinguish or equalize the non-subject entailments (as we saw with *load* or *break*), *hit* would, if motion counted as a proto-entailment, violate the argument selection corollary that requires the argument ranking higher in patient properties to always be the direct object.

Possibly this shows, as suggested earlier, that motion should be treated as irrelevant for object selection altogether; I actually have no reason to reject this hypothesis. But a more interesting possibility arises when we compare a list of verbs that do alternate as *hit* does, cf. (62'), with similar verbs that fail to alternate and instead allow only the "Instrument" (65), or "Location" (66), as direct object:

(62') a. John hit the fence with the stick
b. John hit the stick against the fence.

likewise: *strike, slap, swat, bash, whack, bang, pound, tap, bump, ?push* (different meaning?), *tamp, beat, hammer, flail* (with inanimate locative argument), *batter*

(65) a. swat the boy with a stick
b. *swat the stick at/against the boy

likewise: *smack, wallop, swat, clobber, smite, fell, bust, swipe, thump, pellet, stone, bunt, bat, poke, jab, flail, thresh, buffet, batter, pummel, pelt, drum, club, cudgel, bludgeon, truncheon, lambaste, whisk, strap, belt, baste, flog, spank, paddle, paddywhack, flog, cane, thrash, flail* (with animate locative argument)

(66) a. *dash the wall with the water
b. dash the water against the wall

likewise: *throw, slam, bat, lob, loft, bounce, tip, crash* (note this does not behave like *break*!), *heave, hurl, fling, thrust, impel, sling*

(The above classes represent my judgments and will probably differ with the reader's on a few items.) Several verbs in (65) are derived from nouns referring to instruments, e.g. *club, belt, bat*, hence cannot always take a prepositionally-marked instrument phrase at all without creating redundancy. Of the rest, many verbs are typically or necessarily restricted to human or other animate beings as their "Locative" argument and imply a pain-inflicting or punishing action. While such actions do not inflict a readily observable change of state like the *break* class does, they do of course typically effect at least a certain mental state in the victim, and producing this effect is typically the motivation for the agent's performing the action; it is of more concern than the movement in the Instrument argument per se. Thus I am suggesting the verbs in (65) are actually like Fillmore's *break* in entailing a significant if less visible change of state in their direct object argument, although they cannot alternate in pattern to indicate that the change is in the "Instrument" NP instead as *break* does.

The meanings of the non-alternating verbs in (66) on the other hand most often differ from each other in the manner in which an object is caused to move through space, and I suggest they are typically used in contexts where it is the change of position in the thing moved (a ball or projectile) that is important, not any effect of the action upon the location where the object ends up.

The alternating *hit*-type verbs in (62') are in a sense intermediate between the other two classes: They more characteristically take inanimate "Location" arguments rather than animate ones, and although they are sometimes used when the agent's motivation is to achieve an effect on the "Location" rather than an effect on the Instrument, it can also be the reverse (*beat the rug against the wall*), or it can be the effect of the event in general rather than on either of the objects that is of interest (e.g. the noise it produces---these are also the verbs for describing the production of various sounds by percussive means).

In other words, I believe that (62)-(65) in general suggest that the characteristic *significance* of a change of state entailments in the context of the verb's overall meaning in part determines how it is counted (or weighted): only the more important change entailments count toward the Proto-Patient entailments of the argument in question, as they are added to other patient entailments to determine the allowable syntactic configuration(s). It tends to be verbs for which these change entailments are equally significant (or equally insignificant)

for both arguments that alternate like *hit* does.[7]

9.3.4 Representation-Source Themes and Transformation verbs

I have discussed cases like (67) earlier,

(67) take a nice picture of a scene
make a superior recording of a live performance

which have effected objects (and Incremental Themes) as direct objects and contrast with cases like (68), where the object is what I called a representation-source theme:

(68) photograph a scene
record a conversation

I propose that it is also a consequence of the hypotheses under discussion that there are no examples like (69),

(69) *photograph a scene into a nice picture.
*record a live performance into a superior recording

where the representation-source is direct object and the Incremental Theme is a prepositional object: the obliques in (69) would outrank the direct objects in P-Patient entailments (change of state, incremental theme).

This claim immediately requires further justification because of examples like (70):

(70) turn a live performance into a superior recording
copy a file onto a disk
commit the book to memory

Are these counterexamples? Not if these actually assert that the information in the file, viewed abstractly, "moves" from one place to another; exactly the same

[7] Also relevant to the argument selection problem for direct objects is of course the dative alternation (*give the book to Joh, give John the book*), but as this is a complicated case and as so much has been written about it recently, I will defer discussion of it for another context. With imagination, the interested reader can probably construct a position which would be compatible with the present approach from my comments about about the

information ends up in the resulting "copy" as in its source.[8] And in fact we do NOT seem to get this kind of sentence when it's clear that there is distinctly more information in the original than the copy:

(71) a. *copy the landscape into a painting;

b. make a sketch of the landscape
(#)make the landscape into a sketch
c. make a summary of the lectures
(#)make the lecture into a summary
d. make a rubbing of the tombstone
(#)make the tombstone into a rubbing

The parenthesized #-signs acknowledge the fact that the sentences are acceptable if the original object is not copied but actually converted into the second object. It is relevant to note for comparison that examples involving true physical transformation do have alternate argument configurations:

(72) a. make a bird feeder out of the coffee pot
b. convert the coffee pot into a bird feeder

This is predictable, since "both" arguments (rather, the "same" object under two descriptions) qualify as Incremental Themes---a change in one in fact literally is a change in the "other". Thus my interpretation of the examples in (70) is that for purposes of satisfying the Incremental Theme requirement, they are abstract "conversion of information" sentences analogous to (72b) rather than to (69).

existence of two changes of state in many cases and the significance of changes in human versus non-human event participants.

[8] The first example in (70) is of course not literally that, but as a bit of hyperbole, or metaphor if one prefers, suggests that much has been successfully transferred; alternatively, it may be only that all the information wanted is transferred.