Restrictions on Measuring-Out and the ontology of verb roots in English
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1. Introduction: A different subdivision of aspectual classes

(1)   *Discussions of aktionsart and verb class generally divide eventive verbs into three kinds:*

    A   incremental theme verbs (verbs of creation and consumption, or making and
            unmaking)
    B   change-of-state verbs (both transitive and unaccusative)
    C   other unergative and transitive verbs, of all types: activities, semelfactives, and
            some accomplishments

➢ In most of the literature, A and B have been treated as a natural class. Both A and B verbs
  are usually Accomplishments, and both may have themes that Measure-Out, in the sense of
  Tenny 1992. They have usually been treated together in discussions of the robust connection
  between object boundedness, object case and measuring-out (e.g. Tenny 2000; Van Hout
  2000).

(2)   *Claim: a different typology of verb classes is needed*

➢ We can account for the aktionsart properties of more predicates if we understand the ways in
  which groups A and C form a natural class, distinct from B.

(3)   *Hard-to-swallow distinction:*

➢ We must distinguish between verbs whose names are derived via incorporation of a Root
  from within the argument structure and verbs whose names are derived some other way, let's
  say by a mysterious, parametrically varying, magical process which I'll call *Manner
  Incorporation*

2   Background

(4)   *Objects and measuring-out*

    a.   Sue drank/wrote   for hours/#in 5 minutes.
    b.   Sue drank a pint of beer/wrote a story   #for hours/in 5 minutes
    c.   Sue drank beer/wrote stories   for hours/#in 5 minutes.
    d.   Sue wrote at a story   for hours/#in 5 minutes

➢ Much recent work on telicity has turned on the important connection between the direct
  object position and the telicity of the VP, shown in Tenny 1992 and also Dowty 1991. The
  central observation is that in many VPs, the boundedness of the direct object determines the
  telicity of the event denoted by the whole VP complex. A proposal that has gained substantial
  currency is that there is a functional projection which checks the features of the direct object
  to provide an aspectual interpretation, e.g. Borer 1993; Borer 1996; van Hout and Roeper
  1998, among many others. This projection is sometimes conflated with the accusative case-
  checking projection, sometimes independent of it.

(5)   *Objects without measuring-out:*

➢ Other authors have called the importance of the direct object as a determiner of telicity into
  question, notably Jackendoff 1991; Jackendoff 1996 and also Levin 2000. There are verbs

which take an overt, bounded, definite direct object and are yet inherently atelic (5a, c); they become telic when a goal argument is provided (5b, d).

a.	Sue pushed the cart	for an hour/#in an hour.
b.	Sue pushed the cart to the field	#for an hour/in an hour.
c.	Sue kicked the ball	for an hour/#in an hour
d.	Sue kicked the ball to the center	#for a second/in a second

(6) *Measuring-out without objects*

➢ There is a similar set of unergative verbs of motion: they are essentially atelic, as is expected since they don't have a direct object, *but*, they may become telic with the addition of a goal PP (still without a direct object) illustrated in (2).

a.	Sue danced	for an hour/#in an hour.
b.	Sue danced across the stage	#for five minutes/in five minutes.
c.	Sue hopped	for an hour/#in an hour
d.	Sue hopped across the stage	#for five minute/in five minutes

(7) *Objects without measuring-out and measuring-out without objects:*

➢ An essentially similar class of verbs of motion may be transitive as well as intransitive, but do not become telic until a goal PP is added:

a.	Sue walked	for an hour/#in an hour.
b.	Sue walked the dog	for an hour/#in an hour.
c.	Sue walked (the dog) to the park	#for 5 minutes/in 5 minutes.

(8) *Buy goal PP, get object for free:*

➢ With respect to these verbs of motion, when motion appears to be spontaneous or internally caused, there is a well-known connection between tests for unaccusativity and the presence of a goal PP:

a.   *There*-insertion:
The bullet whistled as it passed my ear.
*There whistled a bullet (as it passed my ear).
There whistled a bullet past my ear.

b.   Auxiliary selection in Dutch Borer 1996
Jan **heeft/*is** gesprongen
Jan has jumped.
Jan **is** in de sloot gesprongen
Jan is in(to) *the ditch jumped.*
Jan **heeft** in de sloot gesprongen
Jan has in the ditch jumped

(9) *Buy resultative phrase, get measuring-out for free*

➢ A third class of atelic activity/semelfactive verbs with objects become telic only with the addition of a result phrase Rappaport Hovav and Levin 1998:

a.	Sue hammered the metal	for 5 minutes/#in 5 minutes.
b.	Sue hammered the metal flat	#for 5 minutes/in 5 minutes.
c.	#This metal hammers easily.	
d.	This metal hammers flat easily.	

(11) *Why are these verbs different?*

➢ from Van Hout 2000: "Following Dowty, Tenny Krifka and Verkuyl, I take it that it is a lexical property of verbs that distinguishes the *push*-class from verbs like *drink* and *write*."

3   A purely syntactic approach

(10)   *Syntactic vs. semantic bootstrapping*

➢ In this paper, I propose to identify what that lexical property is. I claim that it is an intersection of various independent properties of the verb root: its structural position, its ontological class and its inherent (un)boundedness.

➢ We need a way to motivate the sudden acquisition of measuring-out ability in cases 5-9, and explain the absence of measuring-out ability where it's absent. The dominant type of explanation for these phenomena has been that a semantic alteration to the LCS of these verbs (e.g. via the addition of a Path argument or a resultative state), has the effect that the mapping rules produce different results in the syntax. I'll call this a semantic bootstrapping approach. I wish to argue, with Mateu Fontanals 2000, that in fact, the addition of PP or resultative state material in 5-9 directly forces a *syntactic* change which gives the correct results. If it's necessary at all, the LCS-type information can be read off the syntax. I'll call this a syntactic bootstrapping approach.

3.1   An overlooked class of telic verbs

(11)   *Hale and Keyser's denominal unergatives with* Thing *roots*

➢ To begin to make the argument for such an approach, let's first consider a class of unergative verbs that (unusually!) denote Accomplishments, Hale and Keyser's denominal unergative verbs.

a.	The mare foaled	#for 2 hours/in 2 hours
b.	The dog whelped	#for 2 hours/in 2 hours
c.	The cow calved	#for 2 hours/in 2 hours.

(12)   *An adaptation of H&K's proposal for verbs of birthing:*
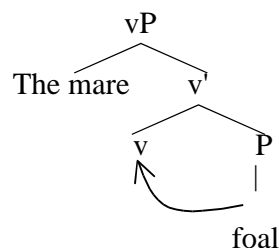
➢ Hale and Keyser propose that unergative verbs (in general) are essentially transitive, derived by incorporating a noun root in object position into the transitive verb that selects it; that is, by conflating a transitive structure.

(13)   *Telicity of both unergative and transitive paraphrase*

      a.   The mare foaled   #for 2 hours/in 2 hours
      b.   The mare had a foal   #for 2 hours/in 2 hours

➢ The aktionsart properties of these verbs correspond to the aktionsart properties of their transitive paraphrases. In both cases, it should be obvious that the baby animal(s) that are contained in the mother's womb (hence necessarily finite in number) are the incremental theme that determines the telicity of the predicate.

(14)   *The difference between babies and other bodily emissions*

      a.   The baby drooled   for 2 hours/#in 2 hours
      b.   The athelete sweated   for 2 hours/#in 2 minutes
      c.   The wound bled   for 2 minutes/#in 2 minutes
      d.
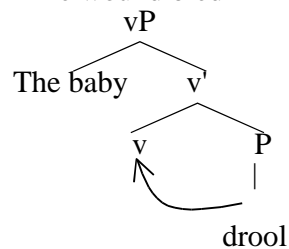
➢ Notice that all these unergative verbs of bodily emission are atelic, unbounded.

(15) *Atelic paraphrases with incremental themes*

      a.   The baby made drool   for 2 hours/#in 2 hours.
      b.   The athlete made sweat   for 2 hours/#in 2 hours.
      c.   The wound oozed/made blood for 2 minutes/#in 2 minutes.

Conclusion #1: in the paraphrases in (13b) and (15) we attribute telicity or lack of it to the mass vs. count properties of the incremental theme in complement position. In the corresponding unergative verbs, the verbs are derived via incorporation of a nominal root from complement position — the incremental theme —which has inherent mass or count properties. The parallel telicity properties of the unergative verbs and their transitive paraphrases should be attributed to the *same mechanism*. A lexical syntactic account allows us to do that.

Consequence #1: in at least these cases, the boundedness cannot be checked in Spec-AgrOP or similar functional projection as a case feature or telic event feature (c.f. Van Hout 2000). Conceivably it *could* be the case that feature checking in these unergative verbs is accomplished via incorporation rather than spec-head agreement, if we wish to maintain a feature-checking account.

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(16)   *Some bodily emission verbs that need extra explanation*

      a.   The boy peed   for 5 minutes/in 5 minutes
      b.   John spit   #for 5 minutes/#in 5 minutes

➢ The *pee* case: *pee* is a mass noun, like *sweat* or *blood*, but in addition to the unbounded reading, there is a bounded reading available. This can be explained if the Universal Packager has applied (that allows one to order "a coffee"); not unreasonable in light of the fact that it is particularly salient that pee comes in discrete quantities, limited by the size of the container. It does, however, entail that the Packager can be a purely interpretive/pragmatic mechanism, not requiring a syntactic reflex, as intervening structure or abstract material would presumably block incorporation of the root.

➢ The *spit* case: *spit* is an apparent problem. In its nominal form, it is definitely a mass noun. However, the verb seems to be a semelfactive unergative in its behavior (see below). I will consider it to be naming an event (the act of spitting) rather than a thing, and treat its "thing" meaning as secondary.

3.2 Denominal unergatives with Event roots

(17) *Two kinds of* Thing *roots*

➢ So far, we have investigated two types of √s: √s that denote Things that are either bounded or unbounded. The bounded √s in complement position give us telic predicates, measured out by the bounded √, while unbounded √s in complement position give us atelic predicates. We can sum up the typology of roots so far as follows:

	bounded	unbounded
Thing	foal	drool

(18) *Two kinds of unergative verbs with* Event *roots*

Activities
a.   Sue danced   for 5 minutes/#in 5 minutes
b.   Sue whistled   for 5 minutes/#in 5 minutes
c.   Sue slept   for 5 minutes/#in 5 minutes

Semelfactives
d.   Sue hopped   #for 5 minutes/#in 5 minutes
e.   Sue tripped   #for 5 minutes/#in 5 minutes
f.   The light flashed   #for 5 minutes/#in 5 minutes

➢ Note that denominal unergatives with event-naming roots cannot be telic, unlike the verbs of birthing above. Rather, they are instantaneous events, which may be coerced to a repetition reading if coocurring with an atelic frame adverbial. Following Smith 1991, I'll call these *semelfactives*.

(19)   *Same structure:*

➢ H&K propose the same structure for these verbs as for the denominal verbs above:

a.   vP   b.   vP
          Sue   v'   Sue   v'
                      v   P   v   P
                      | | | |
                               dance   hop
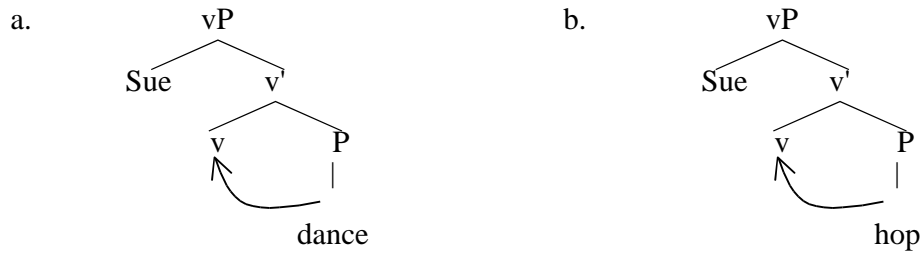
(20)   *Same aktionsart possibilities with paraphrase and unergative*

a.	Sue danced	for 5 minutes/#in 5 minutes
b.	Sue did a dance	for 5 minutes/in 5 minutes
c.	Sue hopped	#for 5 minutes/#in 5 minutes
d.	Sue did a hop	#for 5 minutes/#in 5 minutes

➢ Note the one difference in the atelic paraphrase: "dance" in its nominal form is a count noun, and a measured-out telic reading is available for the transitive paraphrase in 20(b). As with *pee* above, though, the important thing to notice is that it does allow an atelic reading, indicating that it may be interpreted unboundedly.

(21)   *A speculation about the nature of roots that name Events*

➢   The bounded Event roots above do not "measure-out"; rather, they name an event that occurs at a point in time, not one that evolves over time. Consider that in the case of the bounded Thing roots, the measuring-out occured over the physical quantity of the bounded Thing(s) in question. I hypothesize, following Pustejovsky 1991 and Jackendoff 1991 that while bounded Things must necessarily take up space, linguistic Events are fundamentally either pointlike (instantaneous) or extend arbitrarily long (activities).

➢   Where we're going: Most events that evolve over time to a culmination point (accomplishments) must be constructed from *two* sub-eventualities (again following Pustejovsky 1991). More on this anon. (Note: Incremental theme verbs (foal etc.) will constitute the exception to this generalization about accomplishments.)

(22)   *Four kinds of √s*

	bounded	unbounded
Thing	*foal*	*drool*
Event	*hop*	*dance*

(23)   *The story so far:*
        Unergative verbs are created by incorporating a nominal root into a light verb.

        The telicity of the resulting verb can be predicted on the basis of the ontological category
                of the root (Event or Thing), and whether that root denotes a bounded or an
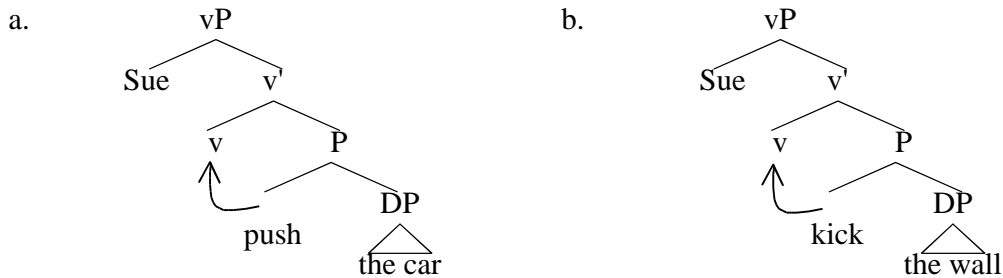   unbounded entity.

4   Transitive atelic verbs

(24)   *Pushing, hitting, kicking*

➤ Recall our class of problem verbs: they have a non-affected object which cannot measure out. In the past, this has been attributed to the Affectedness Condition, which governs the application of mapping rules.

a.	John pushed the cart	for 5 minutes/#in 5 minutes
b.	Sue drove the car	for 5 minutes/#in 5 minutes
c.	Sue kicked the wall	#for 5 minutes/#in 5 minutes
d.	A bird pecked Sue	#for 5 minutes/#in 5 minutes

(25)   *A proposal*

➤ If Event-denoting roots (but not Thing-denoting roots) can select for a complement, we can group these together with the unergative verbs with Event-denoting roots in (18). Note that they have the same aktionsart properties and they all have corresponding event-denoting nominals (*a push, a peck,* etc.). This would then entail that they have the structure below:

a.
```
           vP
          /  \
       Sue    v'
             /  \
            v    P
            ↑   /  \
          push    DP
                 the car
```

b.
```
           vP
          /  \
       Sue    v'
             /  \
            v    P
            ↑   /  \
          kick    DP
                 the wall
```

(26)   *Another speculation*

➤ Why isn't there a corresponding group of transitive denominal verbs whose roots denote Things, not Events, and whose telicity depends on the boundedness of the incorporated thing?? Let us suppose that roots denoting Things cannot select arguments[1], while Events can do so. Our inventory of basic root properties now looks like this:

	no complement		complement	
	bounded	unbounded	bounded	unbounded
Event	*hop*	*sleep*	*kick*	*push*
Thing	*foal*	*drool*	N/A	N/A

(27)   *The $64,000 question: Why can't these objects measure-out?*

➤ Before answering that, let's first take a look at the structure of the other major class of verbs whose objects *do* measure out: not Incremental Theme predicates, but Change of State predicates.

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[1] Maybe. What about *Bill fathered a son* (*?in 2 years/#for 2 years*).

5 Change-of-State verbs

(28)   *Deadjectival change-of-state verbs*

a.	Sue cleared the table	#for 5 minutes/in 5 minutes.
b.	The archaeologist opened the sarcophagus	#for 5 minutes/in 5 minutes
c.	Sue tamed the lion	#for 5 minutes/in 5 minutes
d.	Sue roughened the tire surface	#for a minute/in a minute

➢ These are, of course, the canonical verbs that appear to have a very straightforward semantic analysis in terms of CAUSE + (BECOME) + STATE, where STATE = a small clause consisting of the adjectival state predicated of the object. Some undergo the inchoative/causative alternation, some do not.

(29)   *The lexical syntax of deadjectival change-of-state verbs*

➢ Essentially preserving the analysis of the generative semanticists, H&K (and many others) propose the following light-verb structure for such verbs:
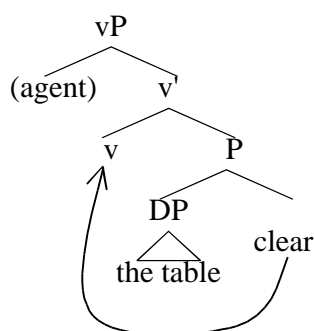
➢ Note that the incorporation of *clear* does not violate the HMC, as the DP is in the specifier of P, and incorporation is head-to-head movement. The object DP is in what H&K call the "inner subject" position, as it is the subject of a small clause predicate, "the table (is) clear".

➢ In these cases, the measuring-out is with respect to the entire *state* denoted by the small clause — the endstate. When that state is acheived, the accomplishment denoted by the whole construction is over. Note that the whole is constructed from two eventualities: the CAUSE event (little v), and the ENDSTATE event (the small clause). This has the nice property of corresponding to the semantic decomposition of accomplishments proposed by Pustejovsky and others.

(30)   *A third kind of root*

➢ Finally, notice that it must be inherent to the nature of these roots that they are predicative — they select for a subject argument, not for an object. They are then fundamentally stative, and neither bounded nor unbounded, adding to our inventory of roots:

	no complement		complement	
	bounded	unbounded	bounded	unbounded
Event	*hop*	*sleep*	*kick*	*push*
Thing	*foal*	*drool*	N/A	N/A
State	*clear*		TBA (prepositions)	

5.1   Denominal Location/Locatum verbs

(30)   *The pièce de resistance*: *denominal location/locatum verbs*.

> Location: bag, bank, bottle, box, cage, can, corral, crate, floor (opponent), garage, jail, kennel, package, pasture, pen, photograph, pocket, pot, shelve, ship (the oars), shoulder, tree.
> Locatum: bandage, bar, bell, blindfold, bread, butter, clothe, curtain, dress, fund, gas, grease, harness, hook, house, ink, oil, paint, pepper, powder, saddle, salt, seed, shoe, spice, water, word.

➢ For more verbs and significant discussion, see Kiparsky 1997.

(31)   *Measuring-out while* saddling:

➢ Notice that the object of these verbs may measure-out:

a.	John saddled the horse	#for 5 minutes/in 5 minutes
b.	Sue boxed the computer	#for 5 minutes/in 5 minutes
c.	Mom blindfolded a 6-year-old	#for a minute/in a minute.
d.	John saddled horses	for 5 minutes/#in 5 minutes
e.	Sue boxed computers	for 5 minutes/#in 5 minutes
f.	Mom blindfolded children	for 5 minutes/#in 5 minutes.

(32)   *Paraphrase has same aktionsart properties:*

a.	Mom fit the six-year old with a blindfold	#for 5 minutes/in 5 minutes.
b.	Mom fit children with a blindfold	for 3 hours/#in 3 hours.

(33)   *A Hale-and-Keyser-style structural proposal:*
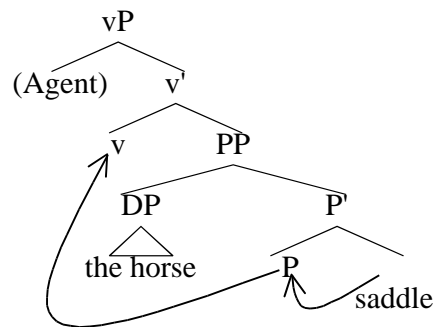
➢ Essentially, the proposal is that this, too, is a change of state verb. The PP is a small clause, predicating something like "WITH SADDLE" of the inner subject, *the horse*. Little v corresponds to CAUSE, as in the deadjectival case, above.

➢ The same structure is proposed for both location and locatum verbs — that is, although in "saddle the horse", the saddle is being put on the horse, but in "box the computer", the computer is being put in the box, the incorporated thing (*saddle, box*) is always the sister of P below P'. We'll see below that what matters is the boundedness of the incorporated thing, not whether it's the location or locatum.

(34) *Another measurer-outer in the paraphrases:*

    a.   Sue put the computer in boxes   for 5 minutes/#in 5 minutes
    b.   Sue fit the horse with saddles   for an hour/#in an hour.

➤ Note that, although pragmatically odd, manipulating the boundedness of the prepositional object affects the aktionsart of the predicate. Selecting an unbounded root for incorporation, then, ought equally to affect the aktionsart of the predicate, in a way parallel to the *foal/drool* contrast above.

(35) *An unbounded, incorporated Locatum*:

    a.   Susan watered the garden   for an hour/in an hour
    b.   Bill greased the chain   for 5 minutes/in 5 minutes
    c.   Jill painted the wall   for an hour/in an hour
   d.   Adelaide buttered the bread   for 2 minutes/in 2 minutes

➤ While the telic reading is available, as expected given the measuring-out potential of the definite, singular objects ("inner subjects" of the change of state), an atelic reading is also available! This is very surprising. Contrast these examples with the necessary telicity of a verb like *saddle* (cf. 31a above).

Conclusion #2: Again, we attribute the introduced atelic reading in the paraphrases in (33) to the introduced unboundedness of the prepositional object. Similarly, we can explain the available atelicity of *to paint* in contrast to the necessary telicity of *to saddle* by attributing it to the unboundedness of the incorporated prepositional object in *paint,* vs. the boundedness of the incorporated prepositional object in *saddle*.

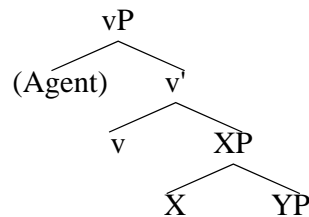## 6   The importance of being X-bar: Deriving telicity

(36) *The typology of argument structures, so far*

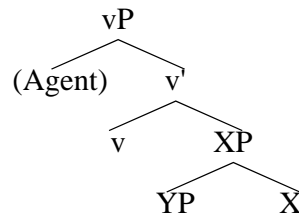   a.   vP with non-branching complement
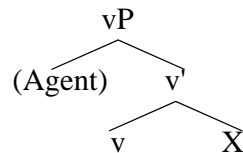
foal, run, drool, dance, calve....

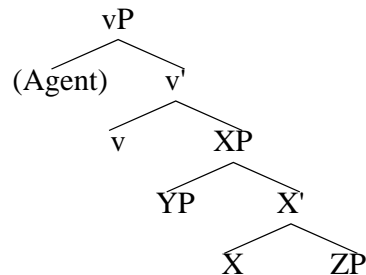   b.   vP with branching complement lacking a specifier

push, kick, hit, kiss, pull...

c.   vP with branching complement lacking a complement (small clause)

```
              vP
            /    \
      (Agent)    v'
               /    \
              v      XP
                   /    \
                  YP     X
```

clear, redden, clean, weaken...

d.   vP with branching complement with both specifier and complement (small clause)

```
              vP
            /    \
      (Agent)    v'
               /    \
              v      XP
                   /    \
                  YP     X'
                       /    \
                      X      ZP
```

saddle, box, water, paint, butter...
Also, without incorporation of ZP, this is the Larsonian framework for ditransitive verbs:
   give, send, put....(see, e.g. Harley 1996 for discussion).

➢ Note that the distinciton between type (b) and (c) above can be made on the basis of the ontological type (State vs. Event) of X: if X is an Event, it cannot be predicated of something

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Assumption #1: The above represent all the argument structures available in language: maximum of three "direct" arguments. Note: no multiple specifiers allowed!

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(37)   *A different kind of denominal verb: instrumental activities*

   a.   John hammered the metal   for 5 minutes/in 5 minutes
   b.   Sue brushed the dog   for 5 minutes/in 5 minutes
   c.   Jill raked the leaves   for an hour/in an hour

➢ Notice that the boundedness of the nominal root here has no effect on the available atelicity. This is expected if the structural source of these nominal roots is not one of the possible measuring-out incorporating positions (i.e. complement to v or complement to P). Considering the incorporated nominal in thematic role terms, this makes sense: these incorporated nouns are neither Themes nor Location/Locatums, but rather Instruments.

Assumption #2: These are verbs created by Manner Incorporation: naming a verb of one of the four classes above ((36b), verbs of contact —*push, kick, kiss,* etc.) after a salient aspect of the Manner in which it is accomplished. This conflates these verbs with other manner-of-contact verbs such as *wipe,* etc.

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(38)   *What happens when you try to include an endstate in the argument structure of* push?

a.   John pushed the cart   John DO (a) PUSH (of) the cart
b.   John pushed the cart to New York   John CAUSE [the cart to New York] by PUSH

➢   All of a sudden, there's no room for the PUSH event nominal in the argument structure, which is now saturated with a State complement to vP, complete with an internal subject (*the cart*) and a predicate (*P New York*). Pushing is now relegated to a mere Manner element, which gets into the verb by (ta da!) Manner Incorporation on-the-fly.

(39)   *Same problem with manner-of-motion verbs*

a.   Sue ran.   Sue DO (a) RUN
b.   Sue ran to New York   Sue CAUSE [(self) to New York] by RUN
c.   The bullet whistled   The bullet DO (a) WHISTLE
d.   The bullet whistled past my ear   BECOME [the bullet past my ear] while WHISTLE

➢   What happens is that the (36d) verb frame is being used, but the verb is named after a manner element that can also occur as its own verb root in the (36a or b) frames.

(40)   *The argument structure of* push the cart to New York.
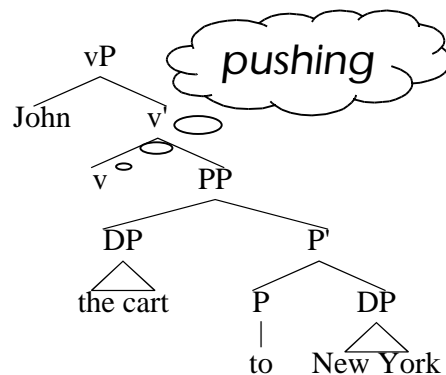
➢   Another way of thinking about it: consider Gleitman's example of the independent meaning supplied by the ditransitive frame. If you take a verb like *think*, which usually takes only a CP or DP complement, and force it into a ditransitive frame — *Sue thought the book to Mary* — what results is not ungrammaticality. Rather, we interpret *thinking* as a manner element describing the way in which the book was transferred to Mary (telepathically or telekinetically, probably). Cf. also the insights of construction grammar: Goldberg 1995.

(41)   *Inner subjects measure-out[2]*
       a.   John pushed carts to the cloakroom   for 3 hours/#in 3 hours
       b.   Susan hammered metal flat   for 3 hours/#in 3 hours

➢   Also, of course, the auxiliary selection change in Dutch results from the appearance of an inner subject and resulting availability of an unaccusative structure for the verb of motion *jump* when the endstate of the jumper is specified; similarly, the availability of *there*-insertion with verbs of motion results from the appearance of an inner subject and resulting availability of an unaccusative structure when the endstate is represented.

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[2] This is the answer to the $64,000 question: the objects of *push* verbs are not inner subjects.

6.1 The productivity of Manner Incorporation varies parametrically

(42) *Lack of lexical Manner elements in Romance*:

➢ As demonstrated by Talmy 1986, verbs of manner of motion are not much available in Romance languages:

    a.   The bottle floated away from the bank.
    b.   La botella   se fué   de la orilla   flotando.
        the bottle   REFL moved-away   from the bank floating

➢ Similarly, resultative constructions are unavailable in Romance languages, and most verbs of motion do not permit the addition of goal PPs or the causative accompanied motion construction (see Harley 1999; Mateu Fontanals 2000 for further discussion):

    c. The horse jumped / Kay jumped the horse over the fence.
    d. El caballo brincó / *Juan brincó el caballo sobre el cerco.
      the horse   jumped / *John jumped the horse over the fence.

Conclusion #3: If we understand that resultative constructions and motion-to-a-goal constructions involve a reanalysis of the verb root as a Manner element, we can attribute the absence of such constructions in Romance to the lack of productivity of Manner Incorporation in those languages.

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7 Reprise: Incremental Themes

(43) *So: what about the telicity of verbs with incremental themes?*

➢ Above, the only classes of verbs that measure out with their direct object are change-of-state verbs, with argument structures (36c) and (36d) above, whose direct object is an inner subject. Verbs whose direct object does not affect their telicity one way or another have no inner subject (frames 36a and 36b above), except in one case: verbs of making or unmaking. This was the original parallel that led us towards the idea that decomposing verbs in the syntax might be a useful idea. The verbs that they paralleled were the very Incremental Theme verbs that got Tenny and Dowty going in the first place:

    a.   Sue ate the apple   #for 5 minutes/in 5 minutes
    b.   Bill built the house   #for a year/in a year.

(43) *A structure for incremental theme verbs*

➢ Just as ditransitive verbs parallel location/locatum verbs without all the incorporation, I wish to claim that verbs of making and unmaking parallel the verbs of birthing without all the incorporation. The verb root will be an incorporated Manner element. The structure of, e.g., *write* will then be:
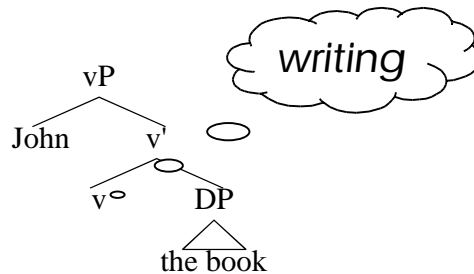
John MAKE the book by WRITE

➤ There is then a significant structural difference between the objects that measure-out in change-of-state verbs (including ditransitive verbs), and the incremental theme objects. The former are "inner subjects" of a small clause, the latter are direct objects of a light verb of creation (or negative creation).

(44)   *Middles and measuring-out*

➤ A test which may distinguish the two kinds of direct objects (may!) is the middle construction. Certainly location/locatum verbs take the middle easily...

      a.   These computers box easily.
      b.   Shetland ponies saddle easily.

➤ But it seems that verbs of making and unmaking resist the middle:

      c.   ??Powerbars eat quickly.
      d.   ??Frank Lloyd Wright houses don't build easily   Tenny 2000
      e.   ??Rodin statues sculpt easily.
      f.   ??Oxford shirts don't sew easily.

and certainly verbs of birthing do:

      g.   ***Foals of this type have easily.
      h.   ??Foals of this type birth easily.

(45)   *Maybe middles aren't the best test....*

➤ As Tenny (2000) notes, however, it seems that some class members can occur in the middle:

      a.   ...the soup that eats like a meal
      b.   ?Your initials embroider easily compared to mine.

(46)   *But maybe they are*

➤ However, consider the difference between a middle formed from (a) below, a genuine verb of creation, and a middle formed from the same verb in (b) below, in a change of state frane:

      a.   Maria carved a toy soldier.
      a'   ??Toy soldiers carve easily.
      b.   Maria carved the wood.
      b'.   Wood carves easily.

Conclusion #4: Middle formation (may) only apply to verbs whose argument structure contains an inner subject. Hale and Keyser 1999 come to the same conclusion looking at a very different set of data from psych verbs.

8.   So which light verb *is* it?

(47)   *DO, CAUSE, and MAKE*

➤ In my paraphrases, intended to elucidate the lexical semantics and lexical syntax of these different types of verbs, I've used several different light verbs to correspond to the contribution of little v:

a.   Susan DO (a) DANCE
b.   Bill DO (a) PUSH (of) the cart.
c.   The mare MAKE (a) FOAL.
d.   Jennifer MAKE a book (by) WRITING
e.   Jill CAUSE the table CLEAR
f.   Maria CAUSE the horse WITH SADDLE
g.   Patty CAUSE the cart to New York (by) PUSHING

➤ In fact, I think it's the same little v in all cases: one that denotes the beginning of an event, and its initiator. It's just a weakness of English that the beginnings of different kinds of events are referred to by different verbs. We MAKE Things, we DO Events, and we CAUSE states; the interpretation is wholly dependent on the ontological type of the complement to little v. In French, all three English verbs translate the same way: *faire*.

(48)   *BECOME*

➤ I didn't address the question of whether there's a light verb in unaccusative phrases or what it is; I assume there is, that it denotes the beginning of a spontaneous change-of-state event, and that it differs from the *FAIRE* little v only in that it does not select an external argument in its specifier.

     a.   BECOME [the door OPEN]
     b.   BECOME [the screen CLEAR]
     c.   BECOME [the bullet past my ear] (while) WHISTLING

9   Some Concluding Thoughts

(49) *Take-home messages*
     a) Evidence that root type affects telicity of unergative verbs and denominal
          location/locatum verbs argues for a lexical-syntax approach to argument structure
     b) A Pustejovsky -style semantics for accomplishments — CAUSE+ ENDSTATE — is
          directly represented in their lexical syntax[3].
     c) The fact that English allows productive Manner Incorporation accounts for certain
          transitivity alternations and the measuring-out effects that go with them; it can
          also explain why Romance doesn't show such alternations

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[3] Note that this entails that no monomorphemic root can name an Accomplishment. Is this true?

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