

The Aspectual Behavior of Ditransitives in English

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1 Introduction

- I examine the aspect of three argument verbs describing causation of possession (CoP).
- A considerable amount of work has focused on the semantic, pragmatic, and grammatical underpinnings of the well-known dative alternation (Fillmore 1968, Jackendoff and Culicover 1971, Green 1974, Oehrle 1976, Erteschik-Shir 1979, Barss and Lasnik 1986, Larson 1988, Gropen et al. 1989, Pinker 1989, Pesetsky 1995, Baker 1997, Arnold et al. 2000, Wasow 2002, Harley 2003, Rappaport Hovav and Levin 2005, *inter alia*).
 - (1) a. Kim gave/sent/mailed/threw/tossed **Sandy** the ball.
 - b. Kim gave/sent/mailed/threw/tossed the ball **to Sandy**.
 - c. Kim threw/tossed/*gave/*sent/*mailed the ball **at Sandy**.
- Yet, relatively little work has examined the aspect of CoP verbs in detail, despite the considerable work on the relationship of argument realization and aspect for transitive verbs (Verkuyl 1972, 1993, Dowty 1979, 1991, Tenny 1987, 1992, 1994, Krifka 1986, 1989, 1992, 1998, Jackendoff 1996, *inter alia*).
- I take a first stab at examining the aspectual behavior of CoP verbs, focusing on **telicity** and **durativity**, and demonstrate that:

- a. The class of CoP verbs is not aspectually homogeneous
- b. Their aspectual behavior is reducible to more basic semantic primitives

- These primitives classify CoP verbs in a way that corresponds to a high degree to previous classes proposed by Green (1974), Gropen et al. (1989) and Pinker (1989).
- My ultimate goal is to link aspect and argument realization together for ditransitives, as has been done for transitives, and I present some tentative observations here.

2 Previous Classifications

- Based on earlier work by Green (1974), Gropen et al. (1989) and Pinker (1989) propose the following classification of dative verbs, organized both by licensing of double object constructions and by intuitive semantic classes (**boldface** are CoP classes):
 - (2) Verbs found in ditransitive construction:
 - a. **Verbs that inherently signify acts of giving:** *give, pass, hand, sell, pay, trade, lend, loan, serve, feed*

- b. **Verbs of sending:** *send, mail, ship*
 - c. **Verbs of instantaneous causation of ballistic motion (Verbs of throwing):** *throw, toss, flip, slap, kick, poke, fling, shoot, blast*
 - d. **Verbs of continuous causation of accompanied motion in a diectionally specified direction:** *bring, take*
 - e. **Verbs of future having:** *offer, promise, bequeath, leave, refer, forward, allocate, guarantee, allot, assign, allow, advance, award, reserve, grant*
 - f. Verbs of type of communicated message: *tell, show, ask, teach, pose, write, spin, read, quote, cite*
 - g. **Verbs of instrument of communication:** *radio, email, telegraph, wire, telephone, netmail, fax*
- (3) Verbs not found in the ditransitive construction:
- a. Verbs of fulfilling: *credit, present, entrust, supply, trust*
 - b. **Verbs of continuous causation of accompanied motion in some manner:** *carry, pull, push, schlep, lift, lower, haul*
 - c. Verbs of manner of speaking: *shout, scream, murmur, whisper, shriek, yodel, yell, bellow, grunt, bark*
 - d. Verbs of communication of propositions and propositional attitudes: *say, assert, question, claim, think aloud, doubt* (Gropen et al. 1989:243-244)
- I ignore non-CoP classes, as well as benefactive (*bake me a cake*) and adversative (*envy him his luck*) uses of double objects. I also ignore verbs of future having for now.
 - Bresnan and Nikitina (2003) and Levin (2004) show that the verbs in (3) do appear in the double object construction, though not as frequently as those in (2). Levin (2004) (summarizing various cross-linguistic research) shows that these classes are still relevant for determining at least some argument realization possibilities.
 - But are (2) and (3) really autonomous or can they be cross-classified in any ways?

3 Telicity

- Informally, a telic predicate specifies a termination point for the event such as a definite, specific result state (Dowty 1991, Tenny 1994, Jackendoff 1996).
 - CoP verbs are always telic (on the intended, single dynamic event reading) (Jackendoff 1996), acceptable with *in* temporal adverbials but not *for* adverbials (Dowty 1979):
- (4)
- a. John gave/sent/threw/?hurled Mary the ball in/#for five minutes.
 - b. John gave/sent/threw/hurled the ball to Mary in/#for five minutes.
 - c. John threw/hurled the ball at Mary in/#for five minutes.
- For some CoP verbs, including *give, hand, pass (the salt)*, the recipient necessarily comes to possess the theme, thus providing an appropriate bound for the event:

- (5) a.#John gave/handed/passed Mary the salt, but it fell on the floor before she got it.
 b.#John gave/handed/passed the salt to Mary, but it fell on the floor before she got it.

- As often noted, successful possession of the theme by the recipient is not actually entailed for most CoP verbs (Oehrle 1976, Rappaport Hovav and Levin 2005):

- (6) a. John sent/threw/tossed/?hurled/?carried Mary the ball, but the torrential downpour stopped her from ever getting it.
 b. John sent/threw/tossed/?hurled/?carried the ball to Mary, but the torrential downpour stopped her from ever getting it.
 c. John threw/tossed/hurled the ball at Mary, but the torrential downpour stopped her from ever getting it.

- But if no result state is entailed, why are the predicates telic? In fact, nearly all CoP verbs do entail LOSS of possession by the agent:

- (7) a.#John sent/threw Mary the ball, but he never let it go.
 b.#John sent/threw the ball to Mary, but he never let it go.
 c.#John threw the ball at Mary, but he never let it go.

- Telicity is thus not surprising: loss of possession is a bound imposed on the event. The only CoP verbs acceptable with even this canceled are accompanied motion verbs:

- (8) John carried/took the dossier to the security council, but never gave it up.

- However, they do entail ARRIVAL of the agent+theme at the goal:

- (9) #John carried/took the dossier to the security council, but neither arrived.

- This is like *walk/run*, etc. (cf. #*John walked to the store but never arrived*). Arrival serves to bound the event, making these predicates telic as well.

- CoP verbs are all telic, but for slightly different reasons:

(10)

Verb Class	Examples	Bound on Event
COMING INTO POSSESSION	<i>give, hand</i>	possession by recipient
LOSS OF POSSESSION	<i>throw, toss, send</i>	loss of possession by agent
ARRIVAL	<i>carry, take</i>	arrival at goal

4 Durativity

- Durativity can be defined informally as the subdividability of an event into smaller subevents: durative events are subdividable, punctual events are not.
- Following Beavers (to appear a), durativity often correlates with the **complexity of the change** that defines the progress of the event.
 - Punctual predicates describe transitions from one state to another along a binary scale.
 - Durative predicates describe transitions from one state to another through at least one successive intermediate states.
- Durativity of telic predicates can be tested for with *in* adverbials (use of future tense highlights the effect) (Kearns 2000, Beavers to appear a).

(11) a. **Pred**[telic, durative]+*in X time* = $\left\{ \begin{array}{l} \text{It took X time to } \mathbf{Pred} \\ \mathbf{Pred} \text{ occurred after X time} \end{array} \right\}$

- b. The settler will cross the desert in 5 days.
i. It will take the settler 5 days to cross the desert.
ii. The settler will cross the desert after 5 days.

(12) a. **Pred**[telic, punctual]+*in X time* = **Pred** occurred after X time

- b. The settler will cross the border in 5 days.
i. The settler will cross the border after 5 days.

- COMING INTO POSSESSION verbs are punctual (Jackendoff 1996, Krifka 1998):

(13) a. Carla will give/pass/hand the diner the salt in ten seconds. (*after*)
b. Carla will give/pass/hand the salt to the diner in ten seconds. (*after*)

- The only felicitous reading is the *after* reading, suggesting that these predicates are punctual, describing a transition from not possessing to possessing.
- Durativity varies for LOSS OF POSSESSION verbs. *Send* and *mail* are punctual:

(14) a. The seller will send/mail Mary the package in five minutes. (*after*)
b. The seller will send/mail the package to Mary in five minutes. (*after*)

- So are ballistic motion verbs like *throw*, *toss*, and *granny*:

(15) a. Dr. J will throw/toss/granny Shaq the ball in five minutes. (*after*)
b. Dr. J will throw/toss/granny the ball to Shaq in five minutes. (*after*)
c. Dr. J will throw/toss/granny the ball at Shaq in five minutes. (*after*)

- However, unlike *send*, these verbs also imply a path of motion for the theme, something they share in common with canonical motion verbs (e.g. *walk*, *climb*, *cross*).
- For canonical motion verbs, durativity often depends on the complexity of the path; short paths yield punctual readings, long paths durative ones:

- (16) a. The settler will cross the desert in five days. (duration/*after*)
 b. The settler will cross the border in five days. (*after*)

- Yet the durativity of ballistic motion verbs is NOT determined by path complexity:

- (17) Without leaving the mound, Nolan will throw/toss/granny the center outfielder the ball in ten seconds. (*after*)

- Despite a context involving a complex path this predicate is punctual. However, compare this to a verb like *ricochet*:

- (18) a. Baker ricocheted the ball to Nicole Randall, who rifled the ball into the net to tie the match at 1-1. [Mhttp://www.hillcountrynews.com/articles/2004/04/02/news/sports/sports06.txt]
 b. Baker will ricochet Nicole Randall the ball in 30 seconds. (duration/*after*)
 c. Baker will ricochet the ball to Nicole Randall in 30 seconds.(duration/*after*)

- Here, a durative reading IS possible, where *30 seconds* refers to the amount of time the ball spends bouncing between surfaces. This is perhaps clearer in a specific context:

- (19) Given the craggy, twisted walls, it will take Baker 30 seconds to ricochet the ball to Nicole Randall. (duration/*after*)

- Loss of possession is still the only entailment that bounds the event:

- (20) a. Baker ricocheted the ball to Randall, but Randall failed to catch it.
 b. Baker ricocheted the ball to Randall, but it went the wrong direction and never got to her.
 c.#Baker ricocheted the ball to Randall, but Baker never let it go.

- Mannered traversal must occur but no additional result state must obtain.
- So why is *ricochet* durative but not *send/throw*?
- Following Beavers (to appear a), this may be due to **manner**: mannered traversal involves sequenced steps, yielding durativity.
- Thus we have the following LOSS OF POSSESSION subclasses:

(21) LOSS OF POSSESSION verbs:

Subclass	Examples	Durativity	Transition
-MOTION	<i>send, mail</i>	Punctual	Loss of possession
+MOTION, -MANNER	<i>throw, toss</i>	Punctual	Loss of possession
+MOTION, +MANNER	<i>ricochet</i>	durative	Loss of possession+path of motion

- ARRIVAL (accompanied motion) verbs are also durative:

(22) John will haul/carry/push the boulder to Mary in five minutes.(duration/*after*)

- *Carry* and *haul* collapse with the *ricochet* verbs in terms of a manner component. *Bring* and *take* must be durative as well, but without a manner component:

(23) a. John will bring/take Mary the boulder in five minutes. (duration/*after*)
 b. John will bring/take the boulder to Mary in five minutes. (duration/*after*)

- But in fact all seem to require extended paths, explaining the durativity:

(24) #John brought/carried the letter to Mary, who was standing right next to him.

- Thus we have two classes of ARRIVAL verbs, differing only in manner:

(25) ARRIVAL:

Subclass	Examples	Durativity	Transition
+MOTION, -MANNER	<i>bring, take</i>	durative	Path of motion
+MOTION, +MANNER	<i>carry, haul</i>	durative	Path of motion

- A final class are verbs such as *transfer*, *scp*, *ftp*, and *fax*, which are also durative:

(26) a. ?John will transfer/scp Dan the 1G file in 2.34 minutes. (duration/*after*)
 b. John will transfer/scp the 1G file to Dan in 2.34 minutes. (duration/*after*)

- The progress of the event is measured by the theme's size (i.e. an incremental theme):

(27) John will transfer/scp/ftp the 1G file to Dan in 2.34 minutes and the 1KB file in only 0.1 seconds. (duration/*after*)

- Incremental themehood might also be an orthogonal factors relevant for all CoP verbs:

(28) John gave/sent/threw Mary five balls in 5 minutes. (duration?/*after*)

- *Transfer* etc. may not be unique in involving incremental themes.

5 Summary: Semantic and Aspectual Classes

- There are several CoP classes that determine durativity and telicity in different ways:

(29)

	Verb Class	Examples	Durativity	Transition	Bound
a.	COMING INTO POSSESSION	<i>give, pass</i>	Punctual	Coming into possession	Possession
b.	LOSS OF POSSESSION:				
	i. -MOTION	<i>send, mail</i>	Punctual	Loss of possession	Loss
	ii. +MOTION, -MANNER	<i>throw, toss</i>	Punctual	Loss of possession	Loss
	iii. +MOTION, +MANNER	<i>ricochet</i>	Durative	Loss+path of motion	Loss
c.	ARRIVAL:				
	i. +MOTION, -MANNER	<i>bring, take</i>	Durative	Path of motion	Arrival
	ii. +MOTION, +MANNER	<i>carry, haul</i>	Durative	Path of motion	Arrival
d.	INCREMENTAL THEME	<i>fax, scp</i>	Either	Incremental transfer	Arrival

- There is a high degree of overlap between this and the Gropen et al. classes:

(30) a. **Verbs that inherently signify acts of giving:** *give, pass, hand, sell, pay, trade, lend, loan, serve, feed* (29a)

b. **Verbs of sending:** *send, mail, ship* (29b.i)

c. **Verbs of instantaneous causation of ballistic motion:** (Verbs of throwing): *throw, toss, flip, slap, kick, poke, fling, shoot, blast* (29b.ii)

d. **Verbs of continuous causation of accompanied motion in a diectionally specified direction:** *bring, take* (29c.i)

g. **Verbs of instrument of communication:** *radio, email, telegraph, wire, telephone, netmail, fax* (29d)

(31) b. **Verbs of continuous causation of accompanied motion in some manner:** *carry, pull, push, schlep, lift, lower, haul* (29c.ii)

- The only class I have identified that is not identified by Gropen et al. are the ones in (29b.iii), the manner of ballistic motion verbs like *ricochet*.
- These perhaps fit under (30c), although their manner components determine durative readings, suggesting that that class needs to be bifurcated.
- This supports the intuitive classes defined by previous work, although the underlying primitives offer an explanation for the aspectual behavior of the different classes, suggesting that we need to dig deeper than the intuitive classifications.

6 Conclusion - Tentative Observations on Argument Realization

- The aspectual behavior of CoP verbs is reducible to various semantic properties.

Telicity	Durativity	Other
Coming into possession	Coming into possession	Motion
Loss of possession	Loss of possession	
Arrival	Mannered traversal	
	Incremental themehood	

- However, some of these properties figure into argument realization as well.

- In the dative alternation, the recipient may be realized as the first object (FO) of a double object construction, as a *to*-oblique, or as an *at*-oblique.
- FO realizes prospective possessors while *to* realizes prospective goals (Green 1974) (“prospective” since the recipient need only have the potential to possess, etc.):

- (32) a. John sent London a package. (Must be “London Office”)
 b. John sent a package to London. (“London Office” or London location)

- *At* realizes prospective targets of ballistic motion (also cancelable):

- (33) John threw the ball at Mary (but the wind blew it in the wrong direction).

- Thus we have the following alignment of realization options to thematic roles:

(34) Recipient thematic roles (x =recipient, y =theme):

Role Label	Realization Option	Prospective Result
PROSPECTIVE POSSESSOR	FO/dative	x has y
PROSPECTIVE GOAL	<i>to</i>	y arrives at x/y is with x
PROSPECTIVE TARGET	<i>at</i>	y goes toward x

- Clearly, then the notions of (PROSPECTIVE) POSSESSION and (PROSPECTIVE) ARRIVAL are relevant for both telicity and argument realization:

- FO vs. *to* contrast in PROSPECTIVE POSSESSOR vs. PROSPECTIVE GOAL
- *Give* and *take* contrast in COMING INTO POSSESSION vs. ARRIVAL

- Other properties (e.g. LOSS OF POSSESSION, PROSPECTIVE TARGET, MANNER, INCREMENTAL THEME) are not relevant for both aspect and argument realization.

Thus the semantic primitives that classify both CoP verbs (aspectually) and recipients’ realization options are built up of overlapping but distinct sets of primitives.

- POSSESSION is unique: it is relevant for argument realization, durativity, and telicity.

- Its role is similar to AFFECTEDNESS for transitives, which also partly determines:

- Telicity (specificity of effect; Tenny 1992, 1994, Dowty 1991, Hay et al. 1999)
- Durativity (complexity of effect; Wechsler 2001, 2005, Beavers 2002, to appear a)
- Argument realization (existence of effect):
 - * Transitivity cross-linguistically (Hopper and Thompson 1980, Tsunoda 1981)
 - * Object-selection (Anderson 1971, Dowty 1991)
 - * Object/oblique alternations (Beavers 2005, to appear b):

- (35) a. The diner cut the pie (clean in two). (Pie affected)
 b. The diner cut at the pie (but missed it).(Pie maybe not affected)

- The conative alternation is characterizable as the specification or underspecification of AFFECTEDNESS. The dative alternation is likewise characterizable as a contrast in the (under)specification of PROSPECTIVE POSSESSION (Beavers 2005, to appear b).
- Likewise, typological work has shown that POSSESSION is perhaps the most important factor for defining “core” ditransitives (Croft et al. 2001, Levin 2004) just as AFFECTEDNESS is most important for defining “core” transitives (Tsunoda 1981, 1985).
- Thus argument realization and aspect for CoP verbs can be linked together through a common set of primitives, some of which are more central to the nature of the verbs than others.
- The kinds of results achieved for transitive verbs may be possible for CoP verbs as well.

References

- Anderson, Stephen R. 1971. On the role of deep structure in semantic interpretation. *Foundations of Language* 7(3):387–396.
- Arnold, Jennifer E., Thomas Wasow, Anthony Losongco, and Ryan Ginstrom. 2000. Heaviness vs. newness: The effects of structural complexity and discourse status on constituent ordering. *Language* 76(1).
- Baker, Mark C. 1997. Thematic roles and syntactic structure. In L. Haegeman, ed., *Elements of Grammar*, pages 73–137. Dordrecht: Kluwer Academic Publishers.
- Barss, Andrew and Howard Lasnik. 1986. A note on anaphora and double objects. *Linguistic Inquiry* 17:347–354.
- Beavers, John. 2002. Aspect and the distribution of prepositional resultative phrases in English. LinGO Working Paper #2002-7, CSLI, Stanford University, Stanford, CA.
- Beavers, John. 2005. A semantic analysis of argument/oblique alternations in HPSG. In S. Müller, ed., *Proceedings of the 2005 HPSG Conference*. Stanford, CA: CSLI Publications.
- Beavers, John. To appear a. Scalar complexity and the structure of events. In J. Dölling and T. Heyde-Zybatow, eds., *Event Structures in Linguistic Form and Interpretation*. Berlin: Mouton de Gruyter.
- Beavers, John. To appear b. Thematic role specificity and argument/oblique alternations in English. In *Proceedings of WECOL 2004*. University of Southern California, Los Angeles.
- Bresnan, Joan and Tatiana Nikitina. 2003. On the gradience of the dative alternation. Draft of May 7, 2003.
- Croft, William, Jóhanna Barðdal, William Hollmann, Maike Nielsen, Violeta Sotirova, and Chiaki Taoka. 2001. Discriminating verb meanings: The case of transfer verbs. handout, LAGB Autumn Meeting, Reading.
- Dowty, David. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.
- Dowty, David. 1991. Thematic proto-roles and argument selection. *Language* 67(3):547–619.
- Erteschik-Shir, Nomi. 1979. Discourse constraints on dative movement. In T. Givón, ed., *Discourse and Syntax*, pages 441–468. New York: Academic Press.
- Fillmore, Charles J. 1968. The case for case. In E. Bach and R. T. Harms, eds., *Universals in Linguistic Theory*. New York: Holt.

- Green, Georgia. 1974. *Semantic and Syntactic Regularity*. Bloomington, IN: Indiana University Press.
- Gropen, Jess, Steven Pinker, Michelle Hollander, Richard Goldberg, and Ronald Wilson. 1989. The learnability and acquisition of the dative alternation in English. *Language* 65(4):203–257.
- Harley, Heidi. 2003. Possession and the double object construction. In P. Pica and J. Rooryck, eds., *Linguistic Variation Yearbook 2*, pages 31–70. Amsterdam: John Benjamins.
- Hay, Jennifer, Christopher Kennedy, and Beth Levin. 1999. Scalar structure underlies telicity in degree achievements. In *The Proceedings of SALT IX*, pages 127–144.
- Hopper, Paul J. and Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56(2):251–299.
- Jackendoff, Ray. 1996. The proper treatment of measuring out, telicity, and perhaps event quantification in English. *Natural Language and Linguistic Theory* 14:305–354.
- Jackendoff, Ray and Peter Culicover. 1971. A reconsideration of dative movements. *Foundations of Language* 7(3):397–412.
- Kearns, Kate. 2000. *Semantics*. St. Martin's Press.
- Krifka, Manfred. 1986. *Nominalreferenz und Zeitkonstitution. Zur Semantik von Massentermen, Pluraltermen und Aspektklassen*. Ph.D. thesis, Universität München.
- Krifka, Manfred. 1989. Nominal reference, temporal constitution and quantification in event semantics. In R. Bartsch, J. van Benthem, and P. van Emde Boas, eds., *Semantics and Contextual Expressions*, pages 75–115. Dordrecht: Foris Publications.
- Krifka, Manfred. 1992. Thematic relations as links between nominal reference and temporal constitution. In I. A. Sag and A. Szabolcsi, eds., *Lexical Matters*. Stanford, CA: CSLI Publications.
- Krifka, Manfred. 1998. The origins of telicity. In S. Rothstein, ed., *Events and Grammar*, pages 197–235. Dordrecht: Kluwer Academic Publishers.
- Larson, Richard K. 1988. On the double object construction. *Linguistic Inquiry* (19):335–392.
- Levin, Beth. 2004. Verbs and constructions: Where next? Talk given at WECOL 2004, University of Southern California, Los Angeles, CA.
- Oehrle, Richard T. 1976. *The Grammatical Status of the English Dative Alternation*. Ph.D. thesis, MIT, Cambridge, MA.
- Pesetsky, David. 1995. *Zero Syntax: Experiencers and Cascades*. Cambridge, MA: MIT Press.
- Pinker, Stephen. 1989. *Learnability and Cognition*. Cambridge, Mass: MIT Press.
- Rappaport Hovav, Malka and Beth Levin. 2005. All dative verbs are not created equal. Unpublished ms., The Hebrew University of Jerusalem.
- Tenny, Carol. 1987. *Grammaticalizing Aspect and Affectedness*. Ph.D. thesis, MIT, Cambridge, MA.
- Tenny, Carol. 1992. The aspectual interface hypothesis. In I. A. Sag and A. Szabolcsi, eds., *Lexical Matters*. Stanford: CSLI Publications.
- Tenny, Carol L. 1994. *Aspectual Roles and the Syntax-Semantic Interface*. Dordrecht: Kluwer Academic Publishers.
- Tsunoda, Tasaku. 1981. Split case-marking in verb-types and tense/aspect/mood. *Linguistics* 19:389–438.

- Tsunoda, Tasaku. 1985. Remarks on transitivity. *Journal of Linguistics* 21:385–396.
- Verkuyl, Henk J. 1972. *On the Compositional Nature of the Aspects*. Dordrecht: Reidel.
- Verkuyl, Henk J. 1993. *A Theory of Aspectuality: The Interaction between Temporal and Atemporal Structure*. Cambridge, UK: Cambridge University Press.
- Wasow, Thomas. 2002. *Postverbal Behavior*. Stanford, CA: CSLI Publications.
- Wechsler, Stephen. 2001. A fresh aspect on resultatives. Talk given at University of California at Berkeley.
- Wechsler, Stephen. 2005. Resultatives under the ‘event-argument homomorphism’ model of telicity. In N. Erteschik-Shir and T. Rapaport, eds., *The Syntax of Aspect*. Oxford: Oxford University Press.