

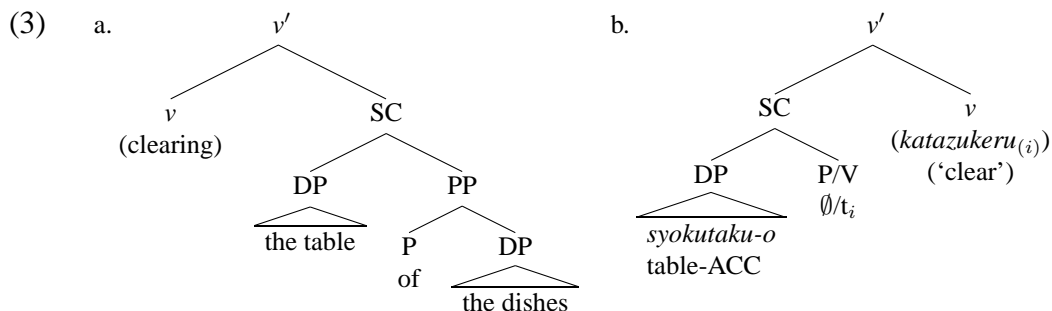
Predicting Argument Realization from Preposition Semantics

1 Introduction

- This paper discusses the role of adposition semantics in determining argument realization cross-linguistically, focusing primarily on adpositions that mark arguments of verbs:

- (1) a. The waiter cleared **the dishes** *from the table*.
 b. The waiter cleared *the table* **of the dishes**. (English)
- (2) a. *Ueetaa-wa syokutaku-kara syokki-o katazuketa.*
 waiter-TOP table-from dishes-ACC cleared.
 ‘The waiter cleared the dishes from the table.’
 b. *Ueetaa-wa syokutaku-o (*syokki-de/kara/ni) katazuketa.*
 waiter-TOP table-ACC (*dishes-INST/from/DAT) cleared.
 ‘The waiter cleared the table (of the dishes).’ (Japanese; Kageyama 1980:38)

- How are oblique arguments licensed and why do English and Japanese differ?
- V-centric:** We could assume that each V is/isn’t subcategorized for an appropriate PP, though this misses generalizations about which PPs show up where and why languages differ.
- P-centric:** Prepositions drive argument realization; the verb encodes manner and/or result state (Folli and Harley 2004, Harley 2003, 2005; see Hale and Keyser 1993, *inter alia*):



- This doesn’t necessarily explain why different languages have different clause structures.
- Hybrid:** Both V and P are equally relevant, but are semantically mutually constraining (via entailment relations; Gawron 1986, Wechsler 1995, Beavers 2006), making two predictions:
 - OLD:** We should expect only certain V+P pairs (between compatible V and P).
 - NEW:** Languages lacking certain Ps will not allow oblique arguments with certain Vs.
- Thus the contrast in (1) and (2) may not be due to differences in verbs or clause structures, but simply the absence of an *of*-oblique in Japanese.

Typological variation in which verb classes allow oblique arguments may be partly reducible to independent, language-particular properties of adpositional inventories.

2 The Role of Preposition Semantics in Argument Realization

- A quick look at the data shows that both V and P contribute crucial semantic components.
- First, certain aspects of role of the oblique argument are determined primarily by the verb, since the “same” oblique arguments have different roles depending on the verb.

- (4) a. Sandy loaded the wagon *with the hay*. (Theme; loaded)
 b. Sandy sprayed the wall *with the paint*. (Theme; sprayed)
 c. John cut the bread *with the knife*. (Instrument argument; inserted)
 d. John chipped the rock *with the chisel*. (Instrument argument; hit bluntly)

- Yet there is commonality across the obliques: they are all “causally intermediate” between the agent and patient Croft (1991:178) (cf. instruments), yielding a single semantics for *with*:

- (5) John ate the grits *with a fork*. (Instrument adjunct)

- (6) a. x → y → z b. x → y → z
 ****load***** ****cut*****
 John hay wagon John knife bread
 c. x → y → z
 ****eat*****
 John fork grits

- Crucially, the link between the verb-dependent and preposition semantics is not arbitrary: the verb-dependent semantics are more specific versions of causal intermediacy.

- (7) a. John loaded the wagon with the hay. → John acts on the hay and then the wagon.
 b. John cut the bread with the knife. → John acts on the knife and then the bread.

- The preposition’s meaning is implied by the verb’s meaning (see Beavers 2006 for an explicit treatment following Dowty 1989, 1991, Ackerman and Moore 2001).

- (8) OBLIQUE SELECTION PRINCIPLE: The role assigned to an oblique argument x by a verb V must imply the role assigned to x by the oblique marker P , i.e.:

$$\forall x, y_1, \dots, y_n. \square [V'(y_1, \dots, x, \dots, y_n) \rightarrow P'(x)], \text{ for } \llbracket V \rrbracket = V', \llbracket P \rrbracket = P'$$

- This predicts that the compatibility of the verb and preposition is a necessary (but not sufficient) condition on oblique realization.
- A less oft-discussed prediction is that certain argument realization patterns may *not* be available in some languages due to the absence of certain adpositions more generally.
- Consider again the English/Japanese contrast in (1b) vs. (2b).
- *Of* is historically an erstwhile ablative (<Old English *æf*, related to *off*). The use in (1b) is what Hook (1983) calls the “abstrument”: an *instrument* used in an *ablative* context.
- *Of* is actually more general, especially in comparison with *from*. *From* describes sources, *of* can mark both sources and abstruments, i.e. it marks either side of a separation relation:

- (9) a. Source (place theme is removed from):
- i. Little (be)came of/from it.
 - ii. We desired it of/from him.
 - iii. He partook of/?from the salad.
- b. “Abstrument” (theme that is removed from somewhere):
- i. He cleared the table of/*from dishes.
 - ii. We robbed them of/*from their jobs.
 - iii. The doctor cured him of/*from his nail biting.
 - iv. The government deprived him of/*from his welfare check.

- Japanese more generally seems to lack an abstrument marker: *-de* marks instruments, *-kara* marks sources, but neither marks a separated item in any context I am aware of.
- Thus these data reflect a general correspondence of the shape of a language’s lexical inventory and the possibility of alternations.
- I turn next to several case studies of systematic variation across languages, and show that in each case this can be reduced to independent variation in adpositional inventories.

3 Encoding of Goals - Possibilities and Impossibilities

- A classic case study is the motion typology of Talmy (1975, 1985, 2000), based on how **path** and **manner** are encoded in a single clause describing a **directed motion event**.

(10) Context: John moved into the house limping.

- a. S(atellite)-framed (English, Russian, German, Mandarin):
Manner is encoded as a *main verb*; path must be a satellite.
John limped into the house. (English)
- b. V(erb)-framed (Spanish, French, Turkish, Japanese, Hebrew):
Path is encoded as a *main verb*; manner must be a subordinate adjunct.
Je suis entré dans la maison (en boitant).
I am entered in the house in limping
‘I entered (into) the house (limping).’ (French)
(cf. #*J’ai boité dans la maison*)

- This is often thought of in terms of verbs: verbs encode manner or path (Talmy 1975, 1985).
- However, these patterns also systematically correlate with motion-independent properties of (among other things) adpositional inventories across language (Talmy 2000, Folli and Ramchand 2002, Beavers et al. 2006, Son 2007 (yesterday, in fact)).
- In S-framed languages, the markers used to realize paths/goals (e.g. (*in*)*to*) often have very general use marking goals/results, even with verbs that do not inherently select for them.

- (11) a. John walked/ran/promenaded to the store. (V implies motion but no goal).
 b. Ted scrubbed/polished/rubbed/caressed his shoes to a healthy shine.

- These prepositions are more like general allative/translative markers.
- In V-framed languages goals are marked by dative/locative adpositions (cf. *dans* ‘in’ in (10b)), but *only* when the verb selects for a goal/result, as illustrated here for Japanese *-ni*:

(12) Marking arguments/IMPLIED participants:

- a. *John-wa eki-ni itta/modotta/orita.*
 John-TOP station-to went/went-up/went-down
 ‘John went/went up/went down to the station.’ (Goal; Beavers 2004:(1a))
- b. *Mary-ga doresu-o pinku-ni some-ta*
 Mary-NOM dress-ACC pink-DAT dye-PAST
 ‘Mary dyed the dress pink.’ (Entailed result; Washio 1997:5, (13b))

(13) *Marking adjuncts/non-selected participants:

- a. **John-wa kishi-ni oyoida/tadayotta/hatta.*
 John-TOP shore-to swam/drifted/crawled
 ‘John swam/drifted/crawled to the shore.’ (Goal; Beavers 2004:1)
- b. **John-ga kinzoku-o petyanko-ni tatai-ta.*
 John-NOM metal-ACC flat-DAT pounded-PAST
 ‘John pounded the metal flat.’ (Non-entailed result; Washio 1997:5, (16b))

(14) a. *Mary-ga boku-ni kono hon-o kureta*
 Mary-NOM I-DAT this book-ACC gave
 ‘Mary gave me this book.’ (Dative/Recipient; Kuno 1973:127, (3a))

- b. *John-wa Mary-ni hon-o yom-ase-ru*
 John-TOP Mary-DAT book-ACC read-CAUSE-NON.PAST
 ‘John will make Mary read a book.’ (Causee; Kuno 1973:139, (7))

- c. *E-ga doroboo-ni nusum-are-ta.*
 painting-NOM thief-by steal-PASS-PAST
 ‘The painting was stolen by the thief.’ (Agent; Tsujimura 1996:233, (169))

- Thus *-ni* is not comparable to *to* (i.e. as an allative), and similarly for Romance *a* (Talmy 2000, Beavers et al. 2006). These goal markers are more akin to datives (see Levin 2006).
- The lack of a general allative in V-framed languages derives from a more general property of these languages: the lack of secondary predication (e.g. result AdjPs, PPs; Aske 1989; though see Son 2007).

<p>The differences in S- and V-framed languages can be reduced to the presence/absence of adpositions of the appropriate sort (e.g. the existence of allative/translative adpositions).</p>

- (19) a. *Ich schickte ihm/#Berlin ein Buch.*
 I.NOM sent him.DAT/Berlin a book
 ‘I sent him/#Berlin a book.’
- b. *Ich schickte ein Buch zu ihm / nach Berlin.*
 I.NOM sent a book to him.DAT / to Berlin
 ‘I sent a book to him/Berlin.’ (German; Judith Tonhauser, p.c.)
- (20) a. *#I Anastasia estile ena vivlio tis Neas Lorcis*
 The.NOM Anastasia.NOM sent a.ACC book.ACC the.GEN New.GEN York.GEN
 ‘Anastasia sent New York a book.’
- b. *I Anastasia estile ena vivlio sti Nea Lorci*
 The.NOM Anastasia.NOM sent a.ACC book.ACC to-the.ACC New.ACC York.ACC
 ‘Anastasia sent a book to New York.’ (Greek; Bowers and Georgala 2005:3, (4))

- The alternation is thus between a structural case/position vs. a semantic case.
- Finnish and Japanese exemplify two alternatives: having only the semantic case variant and only the direct argument variant:

- (21) a. *Minä annoin miehelle kirjan.*
 I.NOM gave man.ALL book.ACC
 ‘I gave the man a book.’ (Finnish; Kaiser 2002:(4b))
- b. *Masao-ga Akira-ni syasin-o okutta.*
 Masao-NOM Akira-DAT picture-ACC send
 ‘Masao sent a picture to Tokyo.’ (Japanese; Beavers 2006:189, (11))

- This reflects the general lack of a dative case or a double object construction in Finnish and the general lack of an allative in Japanese (discussed above).
- In both languages word order encodes the relative topicality, rather than a morphological alternation. But what about the semantic contrasts?
- Each language actually has an alternation, but of a different form than in English/Greek. In Finnish a goal can also be realized in the illative ‘into’ case (Karlsson 1999:112-119):

- (22) *Minä lähetin kirjan Suomeen.*
 I-NOM sent book-ACC Finland.ILLAT
 ‘I sent a/the book to Finland.’ (Finnish; Kaiser 2002:(a), fn.2)

- The allative/illative contrast (between two semantic cases) has something of the flavor of the semantic contrast in dative alternations (albeit with an additional set of locative constraints).
- In Japanese a similar effect is achieved, but here through the relative obliqueness of the dative marker in different contexts.
- We can probe for this through topic-marking by *-wa*. When a non-oblique argument is *-wa* marked, the corresponding case is dropped, but not for a *-wa* marked oblique (Beavers 2006):

- (23) a. *John-ga kaigan-de oyoida*
 John-NOM shore-at swam
 ‘John swam at the shore/beach.’
- b. *John-wa kaigan-de oyoida*
 John-TOP shore-at swam
 ‘As for John, he swam at the shore/beach.’
- c. *Kaigan-de-wa/??kaigan-wa John-ga oyoida*
 beach-at-TOP/??beach-TOP John-NOM swam
 ‘As for the beach, John swam at it.’ (Japanese)

- If we apply *-wa* marking to goals of ditransitives in Japanese, we see that the “London Office” effect obtains for inanimates only if *-ni* is dropped:

- (24) a. *Masao-ga Akira/Tokyo-ni syasin-o okutta.*
 Masao-NOM Akira/Tokyo-DAT picture-ACC send
 ‘Masao sent a picture to Akira/Tokyo.’
- b. *Akira/#Tokyo-wa Masao-ga syasin-o okutta.*
 Akira/Tokyo-TOP Masao-NOM picture-ACC send
 ‘As for Akira/#Tokyo, Masao sent her/#it a picture.’
- c. *Tokyo-ni-wa Masao-ga syasin-o okutta.*
 Tokyo-DAT-TOP Masao-NOM picture-ACC send
 ‘As for Tokyo, Masao sent a picture to it.’

- This suggests that there *is* an alternation in Japanese, between a direct argument *-ni* and an oblique *-ni* phrase (see also Sadakane and Koizumi 1995 and Miyagawa and Tsujioka 2004).
- Whether this corresponds to two different *-ni* morphemes is a murkier question.
- Similarly, in Spanish, clitic doubling has an effect similar to the English dative alternation, though whether this corresponds to a difference in obliqueness of *a* I do not know:

- (25) a. *Yo envié un libro a Nueva York.*
 I sent a book to New York
 ‘I sent a book to New York.’
- b. *#Yo le envié un libro a Nueva York.*
 I 3SG.CL sent the book to New York.
 #‘I sent New York a book.’ (Bleam 2003:235, (6))

<p>The lack of morphological alternations is correlated with the lack of certain types of adpositions, though other properties of these languages encode the same functionality.</p>
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5 Conclusion - The Case of Default Prepositions

- One potential problem for this analysis, however, involves so-called “default” prepositions that mark arguments when the governing head is unable to assign case (Chomsky 1981).
- Such adpositions are meaningless and trivially implied by any verb, thus any argument of any verb could be realized by this according to the OBLIQUE SELECTION PRINCIPLE.
- Clearly this is not the case, so how is this possibility ruled out?
- Here again I appeal to a lexical solution by suggesting that “default” prepositions do not exist, at least not in the verbal domain.
- The most common candidate for the status of default preposition is English *of*:

(26)	a. the destruction of the city/the Romans	([Comp,N])
	b. fond of Mary	([Comp,Adj])
	c. off of the rock	([Comp,P])
	d. I spoke highly of him	([Comp,V])

- Similar adpositions occur in other languages, e.g. Japanese genitive *-no* (Martin 1975).
- However, most uses of *of* in the verbal domain correspond to a limited set of roles, including separation (source and abstrument) and also “material” and comparison:

(27)	a. Separation: <i>He partook of it, We cleared the table of dishes</i>
	b. Material: <i>I wrote of/about him, I was notified of/about his plans</i>
	c. Comparison: <i>This soup tastes of/like mutton, He reminds me of a peacock</i>

- Thus while *of* is a few ways polysemous, it is not clear that it is semantically vacuous.
- As much as it is a default preposition in non-verbal domains it is essentially a direct argument marker (non-verbal objective case), and thus should not be treated as an oblique marker.
- A second candidate for “default” status is English *by*, which can mark a passive agent for virtually any active subject (Fillmore 1968), i.e. it is a proto-agent marker.

(28)	a. The book was bought by Sandy.
	b. The deal was brokered by Kim.

- Thus we might expect to see nominative/*by* alternations in the active voice:

(29)	a. John saw Mary.
	b. *By John saw Mary.

- This I suggest is ruled out by independent constraints that require an NP subject for each finite clause (i.e. the EPP; with exceptions such as dative subjects licensed systematically)
- Thus there does not appear to be any evidence of a truly default preposition in English for verbal argument marking, and I am not aware of any such evidence in any other languages.

6 Conclusion

- Both the verb and preposition assign thematic roles to oblique arguments, but they are constrained by the OBLIQUE SELECTION PRINCIPLE:

(30) OBLIQUE SELECTION PRINCIPLE: The role assigned to an oblique argument x by a verb V must imply the role assigned to x by the oblique marker P , i.e.:

$$\forall x, y_1, \dots, y_n. \square [V'(y_1, \dots, x, \dots, y_n) \rightarrow P'(x)], \text{ for } \llbracket V \rrbracket = V', \llbracket P \rrbracket = P'$$

- This helps explain the distribution of a given adposition with a range of verbs in terms of shared semantics.
- It also predicts that the presence of adpositions of a certain sort are a necessary (though not sufficient) condition on oblique realization.
- The evidence presented here for this correlation is sketchy at best; future work will involve a more systematic view of a range of oblique realization options/inventories across languages.

7 References

- Ackerman, Farrell and John Moore. 2001. *Proto-Properties and Grammatical Encoding: A Correspondence Theory of Argument Selection*. Stanford, CA: CSLI Publications.
- 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* 76:28–55.
- Aske, John. 1989. Path predicates in English and Spanish: A closer look. In *Proceedings of Berkeley Linguistics Society 15*, pages 1–14.
- Beavers, John. 2003. The semantics and polysemy of goal-marking postpositions in Japanese. In P. St. Dizier, ed., *Proceedings of the ACL-SIGSEM Workshop on the Linguistic Dimensions of Prepositions and their Use in Computational Linguistics Formalisms and Applications*, pages 205–215. Toulouse, France: IRIT.
- Beavers, John. 2004. On the nature of goal markers and event delimiters: Evidence from Japanese. Unpublished Ms., Stanford University.
- Beavers, John. 2006. *Argument/Oblique Alternations and the Structure of Lexical Meaning*. Ph.D. thesis, Stanford University.
- Beavers, John, Beth Levin, and Tham Shiao Wei. 2006. The typology of motion events revisited. Talk given at the 80th Annual Meeting of the LSA, Albuquerque, NM.
- Bleam, Tonia. 2003. Properties of the double object construction in Spanish. In R. N. nez Cadeño, L. López, and R. Cameron, eds., *A Romance Perspective on Language Knowledge and use*, pages 233–252. Amsterdam: John Benjamins.
- Bowers, John and Effi Georgala. 2005. The syntax of goals and beneficiaries in modern greek. Presented at the Workshop on the Morpho-Syntax of Modern Greek, LSA Summer Institute, Cambridge, MA. July 22-23.
- Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Croft, William. 1991. *Syntactic Categories and Grammatical Relations: The Cognitive Organization of Information*. Chicago, IL: University of Chicago Press.
- Cummins, Sarah. 1996. Movement and direction in French and English. *Toronto Working Papers in Linguistics* 15, pages 31-54.

- Dowty, David. 1989. On the semantic content of the notion ‘thematic role’. In G. Chierchia, B. H. Partee, and R. Turner, eds., *Properties, Types, and Meaning*. Dordrecht: Kluwer Academic Publishers.
- Dowty, David. 1991. Thematic proto-roles and argument selection. *Language* 67:547–619.
- 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*, pages 1–90. New York: Holt.
- Folli, Raffaella and Heidi Harley. 2004. Consuming results: Flavors of little-*v*. In P. Kempchinsky and R. Slabakova, eds., *Aspectual Enquiries*, pages 1–25. Dordrecht: Kluwer Academic Publishers.
- Folli, Raffaella and Gillian Ramchand. 2002. Event structure composition: The case of goal of motion and resultative constructions in Italian and Scottish Gaelic. In H. J. Verkuyl, ed., *Proceedings of Perspectives on Aspect Conference*. Utrecht: OTS.
- Gawron, Jean Mark. 1986. Situations and prepositions. *Linguistics and Philosophy* 9:327–382.
- Givón, Talmy. 1984. Direct object and dative shifting: Semantic and pragmatic case. In F. Plank, ed., *Objects: Towards a Theory of Grammatical Relations*, pages 151–182. London: Academic Press.
- Green, Georgia. 1974. *Semantic and Syntactic Regularity*. Bloomington, IN: Indiana University Press.
- Hale, Ken and Samuel J. Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In K. Hale and S. J. Keyser, eds., *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*. Cambridge, MA: MIT Press.
- 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.
- Harley, Heidi. 2005. How do verbs get their names? denominal verbs, manner incorporation, and the ontology of verb roots in English. In N. Erteschik-Shir and T. Rapoport, eds., *The Syntax of Aspect*, pages 42–64. Oxford: Oxford University Press.
- Hook, Peter. 1983. The English abstract and rocking case relations. In *Proceedings of CLS 19*, pages 183–194.
- Kageyama, Taro. 1980. The role of thematic relations in the *spray paint* hypallage. *Papers in Japanese Linguistics* 7:35–64.
- Kaiser, Elsi. 2002. The syntax-pragmatics interface and Finnish ditransitive verbs. In M. van Koppen, E. Thrift, E. van der Torre, and M. Zimmermann, eds., *Proceedings of ConSOLE IX*.
- Karlsson, Fred. 1999. *Finnish: An Essential Grammar*. New York: Routledge.
- Kuno, Susumu. 1973. *The Structure of the Japanese Language*. Cambridge, MA: The MIT Press.
- Levin, Beth. 2006. First objects and datives: Two of a kind? Handout from a talk given at BLS 32.
- Martin, Samuel. 1975. *A Reference Grammar of Japanese*. New Haven: Yale University Press.
- Miyagawa, Shigeru and Takae Tsujioka. 2004. Argument structure and ditransitive verbs in Japanese. *Journal of East Asian Linguistics* 13:1–38.
- Oehrle, Richard T. 1976. *The Grammatical Status of the English Dative Alternation*. Ph.D. thesis, MIT.
- Özçalışkan, Şeyda and Dan I. Slobin. 2003. Codability effects on the expression of manner of motion in Turkish and English. In A. S. Özsoy, D. Akar, M. Nakipoglu-Demiralp, E. Erguvanli-Taylan, and A. Aksu-Koç, eds., *Studies in Turkish Linguistics*. Istanbul: Boğaziçi University

- Press.
- Sadakane, Kumi and Masatoshi Koizumi. 1995. On the nature of the “dative” particle *ni* in Japanese. *Linguistics* 33:5–33.
- Son, Minjeong. 2007. Event (de-)composition of directed motion in Korean and English. Talk given at GURT2007, March 9th.
- Talmy, Leonard. 1975. Semantics and syntax of motion. In J. P. Kimball, ed., *Syntax and Semantics*, vol. 4, pages 181–238. New York: Academic Press.
- Talmy, Leonard. 1985. Lexicalization patterns: Semantic structure in lexical forms. In T. Shopen, ed., *Language Typology and Syntactic Description Vol. 3: Grammatical Categories and the Lexicon*, pages 57–149. New York: Cambridge University Press.
- Talmy, Leonard. 2000. *Toward a Cognitive Semantics: Typology and Process in Concept Structuring*. Cambridge, MA: MIT Press.
- Tsujimura, Natsuko. 1996. *An Introduction to Japanese Linguistics*. Oxford: Blackwell.
- Washio, Ryuichi. 1997. Resultatives, compositionality, and language variation. *Journal of East Asian Linguistics* 6:1–49.
- Wasow, Thomas. 2002. *Postverbal Behavior*. Stanford, CA: CSLI Publications.
- Wechsler, Stephen. 1995. *The Semantic Basis of Argument Structure*. Stanford, CA: CSLI Publications.