

Lecture 14. Binding, Quantification, and the Dynamics of Context-Dependence

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Readings:

- (1) (Partee 1989) Binding implicit variables in quantified contexts
- (2) (Partee 1984b) Nominal and temporal anaphora
- (3) (van der Sandt 1992) Presupposition projection as anaphora resolution
- (4) (Heim 1998) Anaphora and semantic interpretation: A reinterpretation of Reinhart's approach
- (5) (Heim 1983a) The projection problem for presuppositions
- (6) (Partee 1991) Topic, focus, and quantification

1. Background

1.1 Binding implicit variables in quantified contexts (Partee 1989)

- (1) (a) John visited a local bar. (Mitchell 1986)
(b) Every sports fan in the country was at a local bar watching the playoffs.
- (2) (a) An enemy is approaching. (Partee 1984a)
(b) John faced an enemy.
(c) Every man faced an enemy.
- (3) (a) Most Europeans speak a foreign language.
(b) Most foreigners speak a foreign language. (Gregory Ward, p.c.)
- (4) (a) Every man who stole a car abandoned it 2 hours later.
(b) Every man who stole a car abandoned it 50 miles away
- (5) John often comes over for Sunday brunch. Whenever someone else comes over too, we (all) end up playing trios. (Otherwise we play duets.)
- (6) (Difference between "arrive here" and "arrive" anchored to 'here') Phone conversations:
(a) A: Joel hasn't arrived here.
B: David has (hasn't he?)
Unambiguously A's "here"; "strict" identity only. *Here* is normally only referential (unlike *there*).
(b) A: Joel hasn't arrived.

B: David has. Ambiguously A's or B's "here", strict or sloppy, referential or bound.

Anchoring situations can vary from expression to expression within a single evaluation situation: some of the above examples, and:

- (7) (a) Real time: Now you see it, now you don't.
(b) Is *that* the same river as *that*? (Kaplan 1979)
- (8) Few 19th century Shakespeare scholars tried to relate the work of contemporary authors to current/contemporary philosophical theories.
(Repeating the word "contemporary" suggests but does not require co-anchoring; choosing a different word suggests but does not require otherwise.)

1.2. Nominal and Temporal Anaphora

Partee (1973) observed a number of parallels between tenses and pronouns; in that paper I tried to account for them by using explicit variables over times and treating the tense morphemes *Present* and *Past* as directly analogous to pronouns. In Partee (1984c) I offered an improved account building on Reichenbach's (1947) notion of "reference time" as developed in work by Bäuerle (1977) and especially Hinrichs (1981, 1986), and building on the unified treatment of pronominal anaphora provided by the discourse representations of Kamp (1981) or the "file-card" semantics of Heim (1982). The task of unifying those advances was largely carried out by Hinrichs (1981); in Partee (1984) I showed how his work could be extended to cases of temporal quantification and to temporal analogs of 'donkey anaphora'.

The analogies: There are temporal analogs of deictic pronouns, anaphoric pronouns with definite and indefinite antecedents, 'bound-variable' pronouns, and 'donkey-sentence' pronouns. Actually, what are called deictic pronouns in Partee (1984) are just pronouns with non-linguistic 'antecedents', which should better be called 'pragmatic' or 'exophoric' pronouns. I don't believe that tenses can be used for true deixis; like the third person neuter pronoun *it* in English, they cannot be stressed and cannot be used to pick out a previously non-salient temporal referent. For that one needs to use a stressed adverbial like *then*. (Data below are from Partee (1973), repeated in Partee (1984).)

Pronouns with non-linguistic antecedents:

- (1) a. I didn't turn off the stove. [Note: this became a famous example, useful for showing that Past tense in English is not simply an existential quantifier over past times.]
b. She left me. (nominal analog)

Definite anaphors with definite antecedents:

- (2) a. Sam is married. He has three children.
b. Sheila had a party last Friday and Sam got drunk.
c. When John saw Mary, she crossed the street.
d. At 3pm. June 21st, 1960, Mary had a brilliant idea.

Indefinite antecedents:

- (3) a. Pedro owns a donkey. He beats it. (Kamp, Heim)
b. Mary woke up sometime during the night. She turned on the light.

Bound variables:

- (4) a. Every woman believes that she is happy.
b. No woman fully appreciates her mother.

- (5) a. Whenever Mary telephoned, Sam was asleep.
b. When Mary telephoned, Sam was always asleep.
c. Whenever Mary wrote a letter, Sam answered it two days later.
d. Whenever John got a letter, he answered it immediately.

'Donkey anaphora':

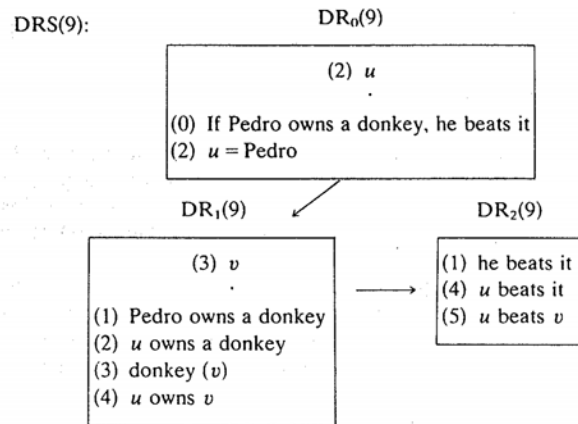
- (6) a. If Pedro owns a donkey, he beats it.
b. Every farmer who owns a donkey beats it.
c. If Mary telephoned on a Friday, it was (always) Peter that answered.
d. Whenever Mary telephoned on a Friday, Sam was asleep.

Parallels in "negative data": the quantificational element cannot be inside the 'restrictor' clause, which is a scope island for both nominal and temporal quantificational operators (and all kinds of semantic operators).

- (7) a. #If every man owns a donkey, he beats it.
b. #If Sheila always walks into the room, Peter wakes up.
(vs. OK b': If Sheila walks into the room, Peter always wakes up.)

Representations using Kamp's DRS structures (can do the same with Heim's theory; for more recent and better formalized account, see (Muskens 1995).

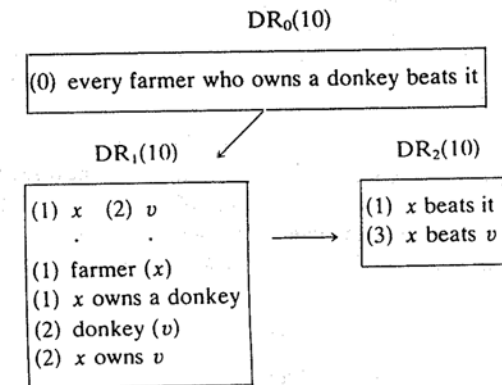
Example (9), Partee (1984): If Pedro owns a donkey, he beats it. (nominal donkey anaphora).



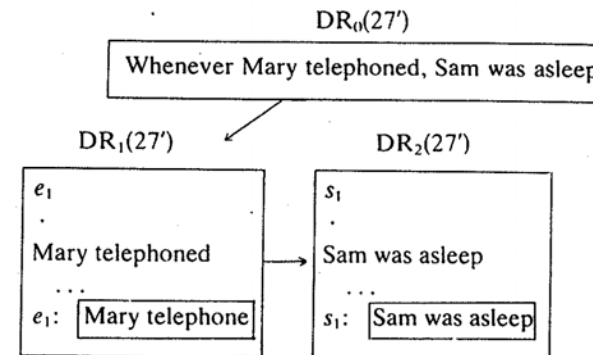
Example (10) from Partee (1984): Every farmer who owns a donkey beats it. (also nominal donkey anaphora).

- (10) Every farmer who owns a donkey beats it.

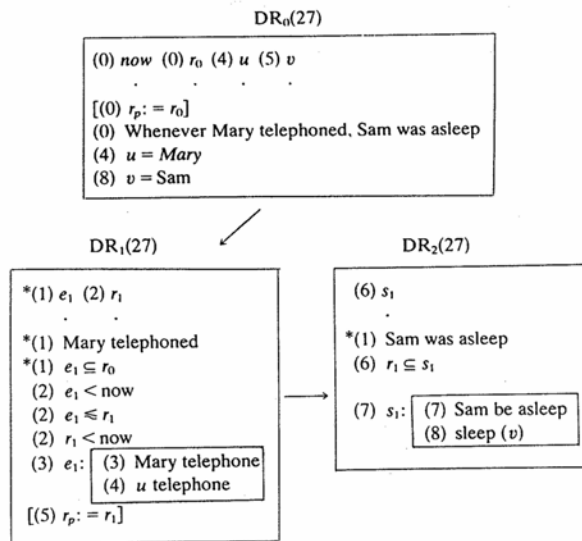
DRS(10):



Temporal analog of (9) and (10): Example (27) from Partee (1984): Whenever Mary telephoned, Sam was asleep. Below is first a preliminary DRS(27'), then a more complete one, DRS(27), showing the steps of the derivation.



DRS(27)



For other recent work, see (Webber 1979, Enç 1986, 1987, Muskens 1995, Stone and Hardt 1997, Kratzer 1998).

In the rest of this handout, we show how the parallels between nominal and temporal anaphora extend to much broader ranges of phenomena with anaphoric properties.

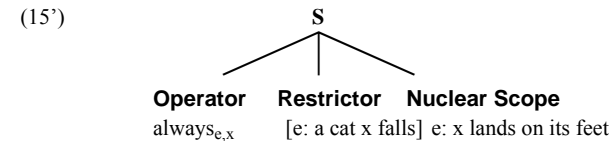
1.3. Context-dependent delimitation of quantificational domains

- (9) (a) Most quadratic equations have two different solutions.
- (b) Det'(CNP')(VP')
- (c) Determiner Quantifiers: domain strongly constrained by syntax.
- (10) Additional delimitation via focus effects:
 - Most ships pass through the lock at night. (Krifka 1990)
 - (Most ships that pass through the lock pass through the lock at night)
- (11) Additional contextual narrowing:
 - (a) "simple" contextual effects:
 - Almost every student was sitting down.
 - (b) "quantified local context" contextual effects.
 - Whenever a teacher entered any classroom, almost every student was sitting down.
- (12) (a) A quadratic equation usually has two different solutions. (Lewis 1975)
- (b) Usually, *x* is a quadratic equation, *x* has two different solutions
- (c) A-Quantifier: domain often [seems to be] determined in substantial part by topic-focus structure. (Padučeva 1985, 1989, Partee 1991, 1995)
- (13) (a) Mary usually takes JOHN to the movies. (Rooth 1985, 1992)

- (b) Mary usually takes John to the MOVIES.
- (c) MARY usually takes John to the movies.

(14) Contextual effects via presupposition accommodation (Schubert and Pelletier 1989): (caveats: see (von Stechow 1994).) On *accommodation*, see Lewis (1979).

(15) Cats always land on their feet.



(16) Diesing's generalization (Diesing 1990, 1992): material in the VP mapped into the Nuclear Scope, material outside the VP mapped into Restrictor.

Alternative (perhaps more primitive) Topic-focus generalization: material in focus (Rheme) mapped into Nuclear Scope; material in topic (Theme) mapped into Restrictor. (Partee 1991)

(17) Quantification as a diagnostic for sentence-internal structure, since variable-binding phenomena are more heavily constrained by "sentence grammar" than ordinary reference and coreference phenomena are.

(18) Sentence-internal structuring of "recursive contexts" and the need for an integrated view of compositional semantics and context-dependence. "Local context" changes within sentence; need appropriate structures to reflect that. Investigate syntactic, semantic, topic-focus structure.

2. Phenomena crucially affected by the structuring of local context.

2.1. Goal:

To explicate the parallels among the following sorts of phenomena, all of which relate to aspects of "accessible local structured context(s)".¹

- (1) Presuppositions, their sources, and their "lifespans"; local vs. global "accommodation".
- (2) Anaphora; accessibility of potential antecedents; lifespans of "discourse referents".
- (3) Adverbs of quantification and the principles for establishing their domains (the "restrictive clause" of tripartite structures). Domain selection as a species of anaphora (von Stechow 1994)
- (4) Context-dependence and the binding of implicit variables in "quantified contexts", quantified point-of-view phenomena, quantification and ellipsis interpretation, etc.
- (5) "Association to focus" with focus-sensitive operators, argued by Rooth (1992) to be also a species of anaphora.

¹ The perspective taken here draws on at least the following: Heim (1983a,b), Hajičová 1983, Rooth 1992, Krifka (1991, 1992, 1993), von Stechow 1994, Sgall et al 1986, Peregrin and Sgall (1986), Partee 1989, Partee 1991, Kratzer (1991), Koktova (1986), Berman (1989), Groenendijk and Stokhof 1990, 1991, Roberts (1995); and discussions with Petr Sgall, Eva Hajičová, and Jaroslav Peregrin, and participants in a Spring 1993 seminar on Quantification and Focus at UMass, Amherst; and fellow participants in Focus Conference, Wolfsbrunn, June 1994.

2.2. Context-dependence, context structure, and context change.

-- Interpretation is in general context-dependent.

-- Context is structured. There are well-known similarities and also differences between "layers" of structured non-linguistic context(s) and structures of discourse context and sentence-internal context.

Degrees of "accessibility" of various aspects of context at a given point in a linguistic structure related to degrees of communicative dynamism in the sense of the Prague school, topichood, structuring of activated shared knowledge, etc; topics related to presuppositions.

Progress on articulating relation between grammatical structure and constructed context structures: Prague school (Hajičová 1983, Sgall et al. 1986, Hajičová 1987, Hajičová 1988. vi, 516 pp.), Sidner & Webber (Webber 1980, Sidner 1983), Reinhart (1980, 1982, 1995), and others.

-- Dynamic perspective: context changes from one part of a discourse to another, and from one part of a sentence to another. (Heim (1983b, 1983a), Kamp (1981), Groenendijk and Stokhof (1990, 1991, 1997), Muskens (1991, 1995).) See also the long history of Prague school research on the dynamics of the stock of shared knowledge, degrees of communicative dynamism (CD), etc., and arguments that where anaphora and other context-dependent constructions are sensitive to the order in which parts are interpreted, the relevant order is not surface order but the order corresponding to relative communicative dynamism (CD); see works by Karel Oliva, Jaroslav Peregrin (Peregrin 1995).

2.3 Parallels in "accessible anchorings" among different context-dependent phenomena.

Claim: Accessibility patterns similarly for presupposition, anaphora, contextual anchoring, and those aspects of quantificational domain specification that similarly depend on local context.

2.3.1. Simple examples: generalization of limitations on "backwards anaphora".

Anaphora

- (6) (a) *Some people_i* complain loudly in the middle of the night and they_{i,j} make so much noise upstairs that one can't sleep.
(b) They_{i,j} make so much noise upstairs that one can't sleep and *some people_i* complain loudly in the middle of the night.

Presupposition

- (7) (a) Max imagines that *there is a saboteur in the company* and that the saboteur in the company is putting bugs in his programs.
(b) #Max imagines that the saboteur in the company is putting bugs in his programs and that *there is a saboteur in the company*.

Context-dependence

- (8) (a) Sam took the car, and two hours later Mary phoned.
(b) Two hours later Mary phoned, and Sam took the car.

- (9) (a) The group *went quickly through the west door*, and there they encountered a dragon guarding a gold ring.
(b) There they encountered a dragon guarding a gold ring, and the group *went quickly through the west door*.

Domain Restriction

- (10) (a) Henrik likes to travel. He goes to France in the summer and he usually travels by car. He goes to England for the spring holidays and he usually travels by ferry.
(b) #Henrik likes to travel. He usually travels by car and he goes to France in the summer. He usually travels by ferry and he goes to England for the spring holidays.

2.3.2 Semantically computed accessibility:

Simple cases of "nested contexts" as in tripartite structures headed by quantifiers, etc., allow simple "paths" of accessibility (cf. classic DRS theory); propositional attitudes, modals, etc., lead to more complex accessibility (Heim 1992), tracking through accessible worlds as dictated by semantics of modals, etc. Where anchorings can "come from" patterns with where presuppositions can "come from", where antecedents to pronouns can "come from", and where domain restrictions can "come from." "Lifespans" of contexts: principles not simply "geometric" but intrinsically semantic.

Presupposition

- (11) (a) John believes it's raining and wishes it would stop.
(b) #John wishes it would rain and believes it will stop.

Anaphora

- (12) (a) John believes there's a logician on the committee and wishes she were reasonable.
(b) #John wishes there were a logician on the committee and believes she's reasonable.

Context-dependence

- (13) (a) John believes that Susan hid a treasure (somewhere) in the forest and hopes that she left tracks nearby.
(b) #John hopes that Susan hid a treasure (somewhere) in the forest and believes that she left tracks nearby.

Domain restriction

- (14) (a) John knows that Susan goes to Maine in the summer and wishes that she would usually travel by car.
(b) John wishes that Susan would go to Maine every summer and knows that she usually travels by car.

3. The interconnections among topic-focus structure, anaphora, presupposition, domain selection, and dynamics of context change.

3.1. Tripartite structures generalized:

S		
Operator	Restrictor	Nuclear Scope
\forall	"cases"	main clause
must	if-clause	assertion
not	subordinate clauses	focus
almost every	common noun phrase	consequent
always	topic	main predication
mostly	presuppositions	
Generic	focus-frame	
	domain	
	reset default values	
	antecedent	
	context	

3.2 Prague school: Topic-Focus Articulation (TFA) and Scale of Communicative Dynamism (CD)

"Instead of such means as parentheses, variables, and prenex quantifiers, natural languages exhibit, at TL, the topic-focus articulation, the scale of CD ('deep word order'), and other features from which the scopes of operators can be derived." -Hajičová and Sgall (1987) "The Ordering Principle".

3.3 Which constructions are focus-sensitive? (Partee 1991)

(Caveats about that question)

Adverbs of quantification:

- (1) (a) Mary always took JOHN to the movies. (Rooth 1985, 1992, 1995)
(b) Mary always took John to the MOVIES.
(c) MARY always took John to the movies.

Only, even, also:

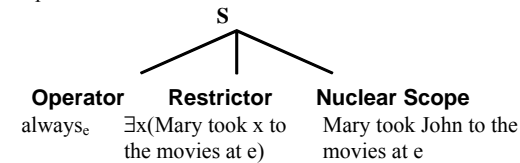
- (2) (a) John only introduced Bill to SUE. [even, also] (Rooth 1985)
(b) John only introduced BILL to Sue.

Counterfactuals: (Dretske 1972, Kratzer 1994)

- (3) (a) If Clyde hadn't married BERTHA, he would not have been eligible for the inheritance.
(b) If Clyde hadn't MARRIED Bertha, he would not have been eligible for the inheritance.

(4) Analysis of (1a)

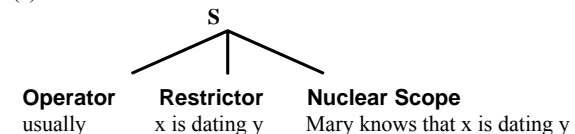
- (a) Mary always took [John]_F to the movies
(b) Tripartite structure



- (5) Berman (1989) on embedded questions and accommodation of presuppositions; is this the same phenomenon as focus-sensitivity? (See last section for von Stechow's 1994 answer.)

- (a) Mary usually knows who is dating whom
(b) Mary knows that S: presupposes S

(c)



Modals: (Roberts 1989)

Frequency adverbs: (Rooth 1985, 1992, 1995)

Generics: (Sgall et al 1986)(Carlson and Pelletier 1995, Krifka 1995)

WHY-questions: (Dretske 1972, 1975, Hajičová 1983, Bromberger 1985, Engdahl 1985, 1986)

Emotive factives and attitude verbs: (Dretske 1975, Kratzer 1994)

Presupposition vs. allegation under negation: (Hajičová 1973, 1974, 1984, Partee 1993)

Superlatives, "first", etc.: (Szabolcsi 1986, Gawron 1992)

In all these cases, the tripartite structure is essential to the interpretation, even truth-conditionally, and in all those cases the topic- focus structure appears to be contributing to the tripartite structure as specified in the basic correlation.

Discourse: focus-frame's set of alternatives locates conversational contribution with respect to common ground or background.

Focus-sensitive operators: focus-frame's set of alternatives contributes to specification of domain to be quantified over or analogous argument of other essentially binary (and conservative: Rooth) operators.

Conservativity: A binary operator is conservative if $OP(A,B)$ is equivalent to $OP(A, A\&B)$ [sensitive to different definitions of conjunction]. (See Barwise and Cooper (1981) on generalized quantifiers.) NOTE: Conservativity "means" that the 2nd argument is interpreted "in the context of" the first.

3.4. Connecting topic-focus structure and domain selection to presupposition and context-dependence.

Meaning as context-change potential. Heim, File-Change Semantics; Kamp, Discourse Representation Theory; Groenendijk and Stokhof, Dynamic Montague Grammar. (These theories have been synthesized into a compatible framework by Muskens (1991, 1993, 1995).)

What is a context? Heim 1983: a context may be identified with a property of sequences of individuals, i.e. a set of pairs $\langle g, w \rangle$, where g is a sequence of individuals and w is a world. The meaning of a sentence is a function from contexts to contexts; meanings of subsentential parts reflect their contributions to sentence meanings so construed.

Dynamic Montague Grammar variant: interpretation is with respect to an input assignment and input world and an output assignment and output world.

Existentials and conjunctions modify context; universals and conditionals function as "tests": local internal context-change with short lifespan.

(2) Every A B (shorthand for tripartite structures in general)

(3) Heim : Given an initial context c (e.g. as a set of pairs of possible worlds and assignment functions), $c + \text{Every } x_i A B = \{ \langle g, w \rangle \in c : \text{for every } a, \text{ if } \langle g[a/i], w \rangle \in c + A, \text{ then } \langle g[a/i], w \rangle \in c + A + B \}$

More generally: The restrictor clause gives instructions for constructing a temporary (limited lifespan) local context, perhaps just as a restriction on the antecedent context but perhaps a hypothetical or counterfactual context, a "variable context" which is a function of whatever variables or contextual parameters are explicit or implicit in the restrictor clause; the nuclear scope is then interpreted in that context. If "degrammaticized", how?

An example with quantified context effects, presupposition, and anaphora:

(4) Every man who stole a car abandoned it 50 miles away.

Note similarity in general presuppositions such as "abandoned presupposes had" and contextual anchoring requirements such as "50 miles away presupposes a reference location"

3.5. Topic-focus articulation and its significance in both pragmatic and dynamic semantic interpretation

- Topic material is interpreted relative to "current context", establishing a new "local context"; focussed material is interpreted relative to local context as established by topic material.
- Topic material contributes to the fixing of (partly implicit) domains of quantification, focus material contributes content to "nuclear scope"

(5) (a) Always, if John saw a street musician, he gave him a shiny coin.
(b) Always, if John had a shiny coin, he gave it to a street musician.

(6) (a) John always gave a street musician a SHINY COIN.
(b) John always gave a shiny coin to a STREET MUSICIAN.
or (b') John always gave a STREET MUSICIAN a shiny coin.

The topic part, like an *if*-clause, may specify or delimit the relevant domain/context in which the focus part is interpreted; the same kinds of dynamic relations to which topic-focus structure contributes in discourse can also be observed in sentence-internal quantificational structures.

3.6. Connecting anaphora and context-dependence.

Rooth 1992 and von Stechow 1994: Need to explain, not stipulate; the basic principles governing "anaphoric systems".

Von Stechow 1994, discussing Rooth 1992: "Building on Rooth's idea that focus semantics is essentially a process of anaphora resolution, we will take this a step further and suggest that the whole area of topic-focus-quantification is part of the anaphoric system of natural language. The relation between nuclear scope and restrictive clause is mediated through their anaphoric dependence on the discourse context."

Berman's generalization as a derivative phenomenon (von Stechow). Natural language quantifiers are CONSERVATIVE: the nuclear scope is always "evaluated in the context established by the domain argument. So, we expect that presuppositions of the second argument can always be satisfied by the domain and need not be projected globally."

3.7. Tripartite structures generalized, second version.

(7) OPERATOR	RESTRICTOR	NUCLEAR SCOPE
	Background	Focus (content including focus)
	Alternatives	Chosen alternative
	Context	Context-dependent content
	Domain	Nuclear scope
	Preconditions	Function-application
	Presuppositions	Assertion
	Antecedents (anchors)	Anaphors
	Topic	Comment

References

- Barwise, Jon, and Robin Cooper. 1981. Generalized quantifiers and natural language. *Linguistics and Philosophy* 4: 159-219. [Reprinted in Portner and Partee, eds., 2002, 75-126]. <http://newstar.rinet.ru/~goga/biblio/essential-readings/03-Barwise.Cooper-Generalized.Quantifiers.and.Natural.Language.djvu>
- Bäuerle, R. 1977. Tempus, Temporaladverb und die temporale Frage, Universität Konstanz: Doctoral Dissertation.
- Berman, Stephen. 1989. An analysis of quantificational variability in indirect questions. In *Papers on Quantification*, eds. Emmon Bach et al.: Department of Linguistics, University of Massachusetts at Amherst.
- Bromberger, Sylvain. 1985. What we don't know when we know we don't know why. In *Scientific Inquiry in Philosophical Perspective*, ed. Nicholas Rescher, 75-104. New York: University Press of America.
- Carlson, Greg N., and Francis Jeffry Pelletier eds. 1995. *The Generic Book*. Chicago: University of Chicago Press.
- Diesing, Molly. 1990. The Syntactic Roots of Semantic Partition, University of Massachusetts,

- Amherst: Ph.D.
- Diesing, Molly. 1992. *Indefinites*. Cambridge, MA: MIT Press.
- Dretske, F. 1972. Contrastive statements. *Philosophical Review* 81:411-437.
- Dretske, Fred. 1975. The Content of Knowledge. In *Forms of Representation*, eds. Bruce Freed et al., 77-93. Amsterdam: North-Holland.
- Enç, Mürvet. 1986. Towards a Referential Analysis of Temporal Expressions. *Linguistics and Philosophy* 9:405-426.
- Enç, Mürvet. 1987. Anchoring conditions for tense. *Linguistic Inquiry* 18:633-657.
- Engdahl, E. 1986. *Constituent Questions. The Syntax and Semantics of Questions with Special Reference to Swedish*. Dordrecht: Reidel.
- Engdahl, Elisabet. 1985. The scope of *why*, MS., LSA Annual Meeting.
- Gawron, Jean Mark. 1992. Focus and Ellipsis in Comparatives and Superlatives: A Case Study. In *SALT II. Proceedings of the Second Conference on Semantics and Linguistic Theory, May 1-3, 1992*, eds. Chris Barker and David Dowty, 79-98. Columbus, Ohio: The Ohio State University, Department of Linguistics.
- Groenendijk, Jeroen, and Martin Stokhof. 1990. Dynamic Montague Grammar. In *Papers from the Second Symposium on Logic and Language*, eds. L. Kálman and L. Pólos, 3-48. Budapest: Adakémiiai Kiadó.
- Groenendijk, Jeroen, and Martin Stokhof. 1991. Dynamic Predicate Logic. *Linguistics and Philosophy* 14:39-100.
- Groenendijk, Jeroen, Martin Stokhof, and Frank Veltman. 1997. Coreference and Modality in the Context of Multi-Speaker Discourse. In *Context-Dependence in the Analysis of Linguistic Meaning: Proceedings of the Workshops in Prague, February 1995 & Bad Teinach, May 1995. Volume I: Papers*, eds. Hans Kamp and Barbara Partee, 195-215. Stuttgart: IMS.
- Hajičová, Eva. 1973. Negation and Topic vs. Comment. *Philologia Pragensia* 16:81-93.
- Hajičová, Eva. 1974. Meaning, presupposition and allegation. *Philologia Pragensia*:18-25.
- Hajičová, Eva. 1983. Topic and focus. *Theoretical Linguistics* 10:268-276.
- Hajičová, Eva. 1984. Presupposition and Allegation Revisited. *Journal of Pragmatics* 8:155-167.
- Hajičová, Eva; Sgall, Petr. 1987. The Ordering Principle. *Journal of Pragmatics* 11:435-454.
- Hajičová, Eva; Sgall, Petr. 1988. vi, 516 pp. Topic and Focus of a Sentence and the Patterning of a Text.
- Heim, Irene. 1983a. On the projection problem for presuppositions. In *WCCFL 2: Second Annual West Coast Conference on Formal Linguistics*, eds. M. Barlow et al., 114-125: Stanford University. [Reprinted in Portner and Partee, eds., 2002, 249-260]. <http://newstar.rinet.ru/~goga/biblio/essential-readings/10-Heim-On-the-Projection-Problem-for-Presuppositions.djvu>
- Heim, Irene. 1983b. File change semantics and the familiarity theory of definiteness. In *Meaning, Use and the Interpretation of Language*, 164-190. Berlin: Walter de Gruyter. Reprinted in Portner and Partee, eds., 2002, 223-248. [Reprinted in Portner and Partee, eds., 2002, 223-248]. <http://newstar.rinet.ru/~goga/biblio/essential-readings/09-Heim-File-Change.Semantics.and.the.Familiarity.Theory.of.Definiteness.djvu>
- Heim, Irene. 1992. Presupposition projection and the semantics of attitude verbs. *Journal of Semantics* 9:183-222.
- Heim, Irene. 1998. Anaphora and semantic interpretation: A reinterpretation of Reinhart's approach. In *The Interpretive Tract. MIT Working Papers in Linguistics* 25, eds. Uli Sauerland and Orin Percus, 205-246. Cambridge, MA. <http://semanticsarchive.net/Archive/zZkNzIzO/HeimMITWPL25.pdf>

- Hinrichs, Erhard. 1981. Temporale Anaphora im Englischen, Universität Tübingen: Zulassungsarbeit.
- Hinrichs, Erhard. 1986. Temporal Anaphora and Discourses of English. *Linguistics and Philosophy* 9:63-82.
- Kamp, Hans. 1981. A theory of truth and semantic representation. In *Formal Methods in the Study of Language; Mathematical Centre Tracts 135*, eds. J.A.G. Groenendijk et al., 277-322. Amsterdam: Mathematical Centre. [Reprinted in: Jeroen Groenendijk, Theo Janssen, and Martin Stokhof (eds.), 1984, *Truth, Interpretation, Information*, GRASS 2, Dordrecht: Foris, pp. 1-41. Reprinted in Portner and Partee, eds., 2002, 189-222]. <http://newstar.rinet.ru/~goga/biblio/essential-readings/08-Kamp-A.Theory.of.Truth.and.Semantic.Representation.djvu>
- Kaplan, David. 1979. On the logic of demonstratives. In *Contemporary Perspectives in the Philosophy of Language*, eds. Peter A. French et al., 401-412: University of Minnesota Press. [Also in *Journal of Philosophical Logic* 8 (1979) pp.81-98. Also in Davis 1991, 137-145.].
- Koktova, Eva. 1986. Remarks on the semantics of sentence adverbials. *Journal of Pragmatics* 10:27-40.
- Kratzer, Angelika. 1991. The Representation of Focus. In *Semantik: Ein internationales Handbuch der zeitgenössischen Forschung*, eds. Arnim von Stechow and Dieter Wunderlich, 825-834. Berlin: Walter de Gruyter.
- Kratzer, Angelika. 1994. The representation of focus. In *Handbook of Semantics*, eds. Arnim von Stechow and Dieter Wunderlich, 825-834. Berlin: Walter de Gruyter.
- Kratzer, Angelika. 1998. More structural analogies between pronouns and tense. In *SALT VIII: Proceedings of the Second Conference on Semantics and Linguistic Theory 1998*, eds. Devon Strolovitch and Aaron Lawson, 92-110. Ithaca, N.Y.: CLC Publications, Department of Linguistics, Cornell University. <http://semanticsarchive.net/Archive/WY1NDFkM/Tenses.and.Pronouns.pdf>
- Krifka, M. 1991. Focus, semantic partition, and dynamic interpretation. Paper presented at *The 8th Amsterdam Colloquium*, Amsterdam.
- Krifka, Manfred. 1990. Four thousand ships passed through the lock: object-induced measure functions on events. *Linguistics and Philosophy* 13:487-519.
- Krifka, Manfred. 1992. A framework for focus-sensitive quantification. In *Proceedings of the Second Conference on Semantics and Linguistic Theory (SALT 2)*, eds. Chris Barker and David Dowty, 215-236. Columbus, Ohio.
- Krifka, Manfred. 1993. Focus and presupposition in dynamic interpretation. *Journal of Semantics* 10:269-300.
- Krifka, Manfred. 1995. Focus and the interpretation of generic sentences. In *The Generic Book*, eds. Gregory N. Carlson and Francis Jeffry Pelletier, 238-264. Chicago: Chicago University Press.
- Lewis, David. 1975. Adverbs of quantification. In *Formal Semantics of Natural Language*, ed. E.L. Keenan, 3-15. Cambridge: Cambridge University Press. [Reprinted in Portner and Partee, eds., 2002, 178-188]. <http://newstar.rinet.ru/~goga/biblio/essential-readings/07-Lewis-Adverbs.of.Quantification.djvu>
- Mitchell, Jonathan. 1986. *The Formal Semantics of Point of View*, University of Massachusetts at Amherst: Ph.D. dissertation.
- Muskens, Reinhard. 1991. Anaphora and the logic of change. In *Logics in AI. Lecture Notes in Artificial Intelligence* 478, ed. Jan van Eijck, 412-428. Berlin: Springer. <http://cogprints.org/4704/1/anaphora.pdf>
- Muskens, Reinhard. 1993. A compositional discourse representation theory. In *Proceedings of*

- the 9th Amsterdam Colloquium, eds. Paul Dekker and Martin Stokhof, 467-486: ILLC, University of Amsterdam.
- Muskens, Reinhard. 1995. Tense and the logic of change. In *Lexical Knowledge in the Organization of Language*, eds. Urs Egli et al., 147-183. Amsterdam: John Benjamins. <http://let.uvt.nl/general/people/rmuskens/pubs/cgdrf.pdf>
- Padučeva, E. V. 1989. O referencial'nom statuse rodovyx vyraženij: Adverbialnaja kvantifikacija. In *Myšlenie, kognitivnye nauki, iskusstvennyj intellekt*, 162-168. Moscow: Akademija Nauk USSR.
- Padučeva, E.V. 1985. Semantičeskie tipy predikatov i značenie VSEGDA [Semantic types of predicates and the meaning of VSEGDA 'ALWAYS']. *Semiotika i Informatika* 24:96-116.
- Partee, Barbara. 1973. Some structural analogies between tenses and pronouns in English. *The Journal of Philosophy* 70:601-609. [Reprinted in Partee, Barbara H. 2004. *Compositionality in Formal Semantics: Selected Papers by Barbara H. Partee*. Oxford: Blackwell Publishing, 50-58]. <http://links.jstor.org/sici?sici=0022-362X%2819731025%2970%3A18%3C601%3ASSABTA%3E2.0.CO%3B2-H> or <http://semanticsarchive.net/Archive/WUyZGJY/Partee1973.pdf>
- Partee, Barbara. 1984a. Compositionality. In *Varieties of Formal Semantics*, eds. Fred Landman and Frank Veltman, 281-312. Dordrecht: Foris. [Reprinted in Partee, Barbara H. 2004. *Compositionality in Formal Semantics: Selected Papers by Barbara H. Partee*. Oxford: Blackwell Publishing, 153-181]. https://udrive.oit.umass.edu/partee/Partee_1984Compositionality.pdf
- Partee, Barbara. 1984b. Nominal and Temporal Anaphora. *Linguistics and Philosophy* 7:243-286. <http://bhpartee.narod.ru/Partee1984NomTemp.pdf>
- Partee, Barbara. 1989. Binding implicit variables in quantified contexts. In *CLS 25: Papers from the Twenty Fifth Meeting of the Chicago Linguistic Society*, eds. C. Wiltshire et al., 342-365. Chicago: Chicago Linguistic Society. [Reprinted in Partee, Barbara H. 2004. *Compositionality in Formal Semantics: Selected Papers by Barbara H. Partee*. Oxford: Blackwell Publishing, 259-281]. https://udrive.oit.umass.edu/partee/Partee89_BindingImplicitVar.pdf
- Partee, Barbara H. 1984c. Nominal and temporal anaphora. *Linguistics and Philosophy* 7:243-286. <http://bhpartee.narod.ru/Partee1984NomTemp.pdf>
- Partee, Barbara H. 1991. Topic, focus and quantification. In *SALT I: Proceedings of the First Annual Conference on Semantics and Linguistic Theory 1991*, eds. Steven Moore and Adam Zachary Wyner, 159-187. Ithaca, N.Y.: CLC Publications, Department of Linguistics, Cornell University. <http://semanticsarchive.net/Archive/zM0MjNhO/>
- Partee, Barbara H. 1993. On the 'Scope of Negation' and polarity sensitivity. In *Functional Description of Language: Proceedings of the Conference, Prague, November 24-27, 1992*, ed. Eva Hajicova, 179-196. Prague: Faculty of Mathematics and Physics, Charles University. <http://semanticsarchive.net/Archive/TJhNTVmN/>
- Partee, Barbara H. 1995. Quantificational structures and compositionality. In *Quantification in natural language*, eds. Emmon Bach et al., 541-602. Dordrecht: Kluwer. http://bhpartee.narod.ru/Partee93_QStructuresandComp1-29.pdf, http://bhpartee.narod.ru/Partee93_QStructuresandComp30-47.pdf
- Peregrin, Jaroslav, and Petr Sgall. 1986. An attempt at a framework for semantic interpretation of natural language. *Theoretical Linguistics* 13:37-73.
- Peregrin, Jaroslav. 1995. Topic, focus and the logic of language. In *Proceedings of the Göttingen Focus Workshop*, eds. Inga Kohlhof et al., 49-58. Tübingen: Arbeitspapiere des Sonderforschungsbereichs 340, 69-1995.

- Reichenbach, Hans. 1947. *Elements of Symbolic Logic*. New York, London: MacMillan.
- Reinhart, Tanya. 1980. Conditions for text coherence. *Poetics Today* 1:161-180.
- Reinhart, Tanya. 1982. Pragmatics and linguistics: An analysis of sentence topics. *Philosophica* 27:53-94.
- Reinhart, Tanya. 1995. Interface Strategies. OTS, Utrecht University.
- Roberts, Craig. 1989. Modal subordination and pronominal anaphora in discourse. *Linguistics and Philosophy* 12:683-721.
- Roberts, Craig. 1995. Domain restriction in dynamic semantics. In *Quantification in natural language*, eds. Emmon Bach et al., 661-700. Dordrecht: Kluwer.
- Rooth, Mats. 1985. Association with Focus, University of Massachusetts: Ph.D. Dissertation.
- Rooth, Mats. 1992. A theory of focus interpretation. *Natural Language Semantics* 1:75-116. <ftp://ftp.ims.uni-stuttgart.de/pub/papers/mats/focus-interpretation.ps.gz>
- Rooth, Mats. 1995. Focus. In *The Handbook of Contemporary Semantic Theory*, ed. Shalom Lappin, 271-298. Oxford: Blackwell. <ftp://ftp.ims.uni-stuttgart.de/pub/papers/mats/survey.ps.gz>
- Schubert, Lenhart K., and Jeffry Pelletier. 1989. Generically speaking: or, using Discourse Representation Theory to interpret generics. In *Properties, types and meanings II: Semantic issues*, eds. Gennaro Chierchia et al., 193-268. Dordrecht: Kluwer.
- Sgall, Petr, Eva Hajičová, and Jarmila Panevová. 1986. *The Meaning of the Sentence in Its Semantic and Pragmatic Aspects*. Dordrecht/Prague: Reidel/Academia.
- Sidner, Candace L. 1983. Focusing in the comprehension of definite anaphora. In *Computational Models of Discourse*, ed. Michael Brady and Robert C. Berwick, 267-330. Cambridge, Ma.: MIT Press.
- Stone, Matthew, and Daniel Hardt. 1997. Dynamic Discourse Referents for Tense and Modals. In *Proceedings of IWCS 2*, 287-299. <http://www.cs.rutgers.edu/~mdstone/pubs/iwcs97.pdf>
- Szabolcsi, Anna. 1986. Comparative superlatives. *MIT Working Papers in Theoretical Linguistics* 8:245-265.
- van der Sandt, Rob. 1992. Presupposition projection as anaphora resolution. *Journal of Semantics* 9:332-377.
- von Stechow, Kai. 1994. Restrictions on Quantifier Domains, University of Massachusetts, Amherst: Ph.D. dissertation. Distributed by GLSA, Amherst.
- Webber, Bonnie. 1979. *A Formal Approach to Discourse Anaphora*. New York: Garland Publishing.
- Webber, Bonnie Lynn. 1980. *A Formal Approach to Discourse Anaphora*. New York: Garland.