

Introspection in Analysis of Text and Discourse

The most conventional method of linguistic analysis – the introspective examination of discourse data – remains a central and important strategy in discourse studies. Introspection-based methods, typical of early efforts within the Prague School and early developments out of the generative tradition in linguistics, emphasize creation of precise theoretical definitions of key pragmatic notions coupled with introspection in their use. The most common strategy is to offer a pragmatic notion as the explanatory basis for some unexplained structural alternation, define in clear prose that theoretical notion, and then map discourse onto that definition. Argumentation consists largely of documenting numerous examples congruent with one's definition and hypotheses.

Some introspective analysis deals with hypothetical discourse data created by the analyst. Such analyses can be problematic because the intuitions on which they are based are often not as reliable, as consistent from speaker to speaker, as are the judgments of acceptability on which analogous claims in sentence syntax are made. Much stronger are introspective analyses conducted on authentic discourse data. Such efforts, typical of Prince and her associates (Birner, 1994; Prince, 1978; 1985; Ward, 1988), involve the collection of massive amounts of genuine discourse data, both written and spoken, which are subjected to painstaking analysis.

Despite its limitations, this strategy remains an extremely useful one for postulating important theoretical ideas and demonstrating their feasibility for addressing difficult problems.

Text Counting Strategies

Introspection has been either augmented or replaced by text counting methods of one kind or another. There was an active tradition in Europe in the 1950s and 1960s of quantitative textual analysis, though this tradition has been largely ignored among North American linguists. More recently, Givón and his students have developed an array of text counting methods intended to increase the reliability of text analysis and through this their cross-linguistic utility.

Within this tradition, critical theoretical notions are operationalized through a set of heuristic counting procedures. For example, one can get a quantifiable handle on the thematic centrality of a referent by observing how reference to a particular endures over the course of a text or text episode. Referents of greater thematic centrality should display greater *topic persistence* (Givón, 1983), where topic persistence is operationalized in terms of the frequency with which a reference recurs over the ten clauses immediately following a given reference of interest.

Text counting methods offer the advantage of increased reliability in discourse analysis. If the methods are transparent, the results should turn out the same no matter who conducts the analysis, a clear advantage over introspective efforts. There are two limitations, though, for text counting.

First, text counts only work well when the theoretical notions they serve as heuristics for are clearly defined and clearly linked to those heuristics. Second, the data collected under text counting methods require careful statistical analysis, which at present is difficult to complete (Tomlin, 1987b).

Experimental and Quasi-Experimental Strategies

There is increasing interest in finding ways of conducting discourse research within traditions of experimental studies. One direction is the employment of films or pictures to collect comparative discourse samples from speakers of various languages. In this tradition, the linguist obtains a drawing or a film and asks speakers to describe it. Since each speaker in the effort performs more or less the same task, the data collected should be reasonably comparable. Perhaps the best known effort of this sort is Chafe's 'Pear Film' (Chafe, 1980b), though others have followed this direction (Givón, 1991; Tomlin, 1985). These efforts are properly described as quasi-experimental: the collection of data is more controlled but there is no manipulation of variables required of true experimental work.

There is increasing interest in experimental studies of discourse within linguistics. There is, of course, a huge literature of experimental studies in discourse comprehension, but the employment of experimental methods by linguists is considerably rarer (Forrest, 1992; Kim, 1993; Sridhar, 1988; Tomlin, 1995; Tomlin and Pu, 1991). Experimental studies are important because the control employed in their development permits extremely strong conclusions to be drawn. Under the proper conditions, the observations made regarding language use will be due exclusively to the variables independently manipulated in the experiment. While significant results may offer extremely strong conclusions, experimental studies are often seen as problematic when the experimental task lacks the ecological validity seen in naturally occurring discourse data.

There is little point at this moment in time in advocating any of these strategies as the correct one to employ. Rather, it seems more valuable to emphasize the need to provide convincing evidence from an array of studies as the best overall strategy in studies of discourse semantics. Introspection provides deep and relatively inexpensive insights into how language may work. Text counting studies reveal systematic patterns of language use which reflect important features of the underlying system revealed in the rich data of human performance. Experimental studies demonstrate in a more narrow or constrained context the details of how pragmatic notions interact with or impact on linguistic form.

Cognitive Approaches to Discourse Semantics

The long term future of studies in discourse semantics lies in the development of cognitive models of discourse comprehension and production. There are two directions of note at this time: (1) cognitive treatments

of fundamental discourse notions, and (2) large scale models of discourse processing.

Cognitive Treatments of Fundamental Discourse Notions

It has been extremely difficult to develop definitions which are both theoretically satisfying and empirically manageable for basic notions in information management – theme, given/new, foregrounding, focus, etc. This has led a number of investigators to pursue a strategy in which discourse notions are operationalized in cognitive terms or in which traditional ideas are outright replaced by cognitive alternatives.

Within referential management, there has been considerable interest in recasting traditional notions of given and new in cognitive terms, in particular in terms of memory, or memorial activation. Chafe offers such a treatment, though he does not connect his theory directly with the cognitive literature. Building on Chafe's effort, others have incorporated ideas from the study of memory (see Cowan, 1988 for review) into a model of referential management based on experimental manipulation of episodic structure and memorial activation (Tomlin and Pu, 1991).

Within thematic management, there has been, as discussed above, considerable interest in demonstrating a connection between theme or topic and attention. A large scale review of ideas in attention is outside the scope of this chapter, but there are several quite excellent summary articles available (Cowan, 1988; Posner and Raichle, 1994; Tomlin and Villa, 1994). Recent work by Tomlin and his students argues that the idea of theme itself can be reduced to cognitive terms, in particular to attention detection at the moment of utterance formulation detection (Forrest, 1992; Tomlin, 1995; Tomlin and Villa, 1994). In this view, the cognitive processes of attention are not merely the cognitive reflexes of linguistic theme or topic; rather the notion of theme or topic is treated as an artifact emerging from the employment of attention within a conceptual representation during discourse production.

Within focus management, there is interest in developing a cognitive account of focus. There are a number of important treatments of focus which appeal to cognition, notably Lambrecht (1994) and Vallduví (1992). Some others have been looking at focus as another arena involving attention (Erteschik-Shir, 1986; Levelt, 1989). Under this treatment, focus is seen not as a status for NPs or arguments, but as the outcome of directing the listener's attention to a referent during discourse production and comprehension. One such treatment of interest is Erteschik-Shir's notion of dominance, in which a constituent is dominant if the speaker intends to direct the attention of the listener to a particular referent. Tomlin (1995) and Hayashi (1995) take a similar tack in seeking to explain the function of *wa* in Japanese.

All of these efforts show more in common than just the desire to overcome the problems of developing adequate theoretical definitions within

information management. These approaches are moving away from a conceptualization of text structure holding pragmatic statuses (for example, that NP is a topic; that argument is a focus) toward a conceptualization of discourse and grammars that is dynamic. In this view, morpho-syntactic cues reveal the memorial and attentional characteristics of the speaker's conceptual representation and direct those of the listener to conform to the speaker's conceptual representation. Attention and memory flow through conceptual representations in real time; there is every reason to believe, as Chafe (1974) observed early on, that information flows through discourse over time.

Models of Knowledge Integration

Just as investigators are moving increasingly toward cognitive treatments of information management, so too are researchers dealing with knowledge integration. Knowledge integration requires large scale models of how individual propositions are incorporated into textual representations and then integrated to generate final conceptual representations in the listener.

The two models of particular importance in this area have already been discussed: Gernsbacher's structure building model and Kintsch's construction-integration model. Both of these models seek to account for how the listener takes propositions encountered one at a time and builds a text representation by integrating the immediate proposition with knowledge already in hand. But a more comprehensive model of knowledge integration in discourse is needed. One, a more comprehensive model must deal more effectively with the role of morpho-syntax in aiding knowledge integration. Neither Gernsbacher nor Kintsch deal fully with how the form of an utterance (as opposed to its content) contributes to knowledge integration. Two, it must deal with how text representations, the set of connected propositions tied closely to the actual text blueprint, are to be related to deeper conceptual representations, in production as well as comprehension. Three, it must also deal explicitly with the dynamic nature of language use and conceptualization. The temporal features of language use probably do not sit outside of discourse semantics but constrain the kinds of systems that ultimately operate as humans create discourse together.

Conclusions

Summary: Key Issues in Discourse Semantics

In this chapter we have discussed the central issues and concepts of discourse semantics. This area involves two main problems. The first is the problem of knowledge integration: how the individual propositions in a text and discourse are integrated to reflect well the speaker's conceptual representation and to optimize the creation of an appropriate conceptual representation in

the listener. The second is the problem of information management: how information is organized and distributed as the speaker and listener interact during the blueprint creation process. In this area we looked at four distinct arenas of information management: rhetorical management, referential management, thematic management, and focus management. Each contributes in a distinct way to increase the efficacy of knowledge integration as the discourse unfolds.

This effort has two serious limitations. First, we have not looked at formal models of discourse semantics. This is an area better left to those more knowledgeable, although interested readers might wish to examine important works such as Kamp and Reyle (1993). Second, it is not possible to provide as detailed a look at the work of individual scholars as one might wish to do. We have settled on trying to extract for our readers the most central insights in each arena. Hopefully, this effort will lead some to a more careful examination of the original sources and related work.

The Future of Studies in Discourse Semantics

The future of studies in discourse semantics is no more predictable than other futures, but there are certainly some directions one can discern. The most important direction is the development of cognitive models of language use. One can expect to see an increased integration of ideas from cognitive psychology, ideas from attention and memory, into linguistic treatments of knowledge integration and information management. This integration will not be easy to accomplish because it will require of us the development of cross-disciplinary and multidisciplinary skills and knowledge that traditional academic disciplines do not readily cultivate. The static descriptive systems linguists know best, a legacy of our structuralist heritage, make it difficult for us to appreciate the dynamic nature of language processing, tempting us to relegate such matters to the periphery when we do not really know they belong there.

In a similar vein, one should expect to see also important developments arising from neuroscience. Even though word and sentence level studies still predominate in this area, the connection between language and brain as scenes and discourses are viewed and heard should prove a fruitful domain. In addition, the neurosciences offer new methods and technologies, in particular ERP and fMRI techniques, which may assist us in providing convincing empirical evidence for our textual and behavioral work.

Finally, we should expect to see increasing collaboration between the field and the laboratory. It is the desire to construct plausible theories of discourse semantics and language use that prompts the interest in empirical and experimental work. Anything we can do to increase our empirical rigor and theoretical sophistication will be welcome. But we must just as much remember that theories which make no connection to actual languages and their description fail to make their full contribution to the study of language. Thus, the future of discourse semantics requires that we deal with

each of the thousands of languages, described and undescribed, distributed across the globe. There is really plenty to do.

Notes

1 Discourse semantics is not concerned with the semantic interpretation or processing of each component in the utterance or sentence. For example, it is not concerned with how semantic roles are managed (agent vs patient vs instrument) or with how lexical knowledge is accessed (what 'dog' means in 'The dog chewed my shoe').

2 The term *conceptual representation* is virtually identical in meaning to another expression *mental model* (Johnson-Laird, 1983) used to capture cognitive representations of events and other mental representations.

3 The NPs in this example are not exhaustively analysed. We have focused on a number of pertinent cases to illustrate ideas in referential management.

4 Note that this is a description of the rhetorical goal of this paragraph.

5 This use of 'topic' does not imply a confusion in Givón's writings about a notion of theme. This is separately discussed in several places (Givón, 1983).

6 This text fragment is taken from a set of edited written protocols generated by a group of undergraduate students who narrated a brief animated film they had recently viewed (Tomlin, 1985).

References

- Aissen, J. (1992) 'Topic and focus in Mayan', *Language*, 68: 43-80.
- Anderson, R.C., Spiro, R.J. and Anderson, M.C. (1978) 'Schemata as scaffolding for the representation of information in connected discourse', *American Educational Research Journal*, 15: 433-40.
- Austin, J.L. (1962) *How To Do Things with Words*. Oxford: Clarendon Press.
- Baggett, P. (1982) 'Information content equivalent movie and text stories', *Discourse Processes*, 5: 73-99.
- Birner, B.J. (1994) 'Information status and word order: an analysis of English inversion', *Language*, 70: 223-59.
- Black, J.B. and Bower, G.H. (1979) 'Episodes as chunks in narrative memory', *Journal of Verbal Learning and Verbal Behavior*, 18: 309-18.
- Bolinger, D. (1972) 'A look at equations and cleft sentences', in E.S. Firchow, K. Grimstad, N. Hasselmo and W.A. O'Neil (eds), *Studies for Einar Haugen Presented by Friends and Colleagues*. The Hague: Mouton. pp. 96-114.
- Bransford, J.D. and Johnson, M.K. (1972) 'Contextual prerequisites for understanding: some investigations of comprehension and recall', *Journal of Verbal Learning and Verbal Behavior*, 11: 717-26.
- Chafe, W. (1974) 'Language and consciousness', *Language*, 50: 111-33.
- Chafe, W. (1976) 'Givenness, contrastiveness, definiteness, subjects, topics, and points of view', in C.N. Li (ed.), *Subject and Topic*. New York: Academic Press. pp. 25-56.
- Chafe, W. (1979) 'The flow of thought and the flow of language', in T. Givón (ed.), *Discourse and Syntax*. New York: Academic Press. pp. 159-81.
- Chafe, W. (1980a) 'The deployment of consciousness in the production of narrative', in W. Chafe (ed.), *The Pear Stories: Cognitive, Cultural, and Linguistic Aspects of Narrative Production*. Norwood, NJ: Ablex. pp. 9-50.
- Chafe, W. (ed.) (1980b) *The Pear Stories: Cognitive, Cultural, and Linguistic Aspects of Narrative Production*. Norwood, NJ: Ablex.
- Chafe, W. (1987) 'Cognitive constraints on information flow', in R. Tomlin (ed.), *Coherence and Grounding in Discourse*. Amsterdam: John Benjamins. pp. 21-51.

- Chafe, W. (1994) *Discourse, Consciousness, and Time*. Chicago: University of Chicago Press.
- Chomsky, N. (1965) *Aspects of the Theory of Syntax*. Cambridge, MA: MIT Press.
- Chomsky, N. (1970) 'Deep structure, surface structure, and semantic interpretation', in R.J.a.S. Kawamoto (ed.), *Studies in General and Oriental Linguistics*. Tokyo: TEC Corp.
- Clark, H.H. and Haviland, S.E. (1974) 'Psychological processes as linguistic explanation', in D. Cohen (ed.), *Explaining Linguistic Phenomena*. Washington, DC: Hemisphere. pp. 91-124.
- Cohen, P.R. and Perrault, C.R. (1979) 'Elements of a plan-based theory of speech acts', *Cognitive Science: a Multidisciplinary Journal of Artificial Intelligence, Psychology, and Language*, 3: 177-212.
- Coulthard, M. (1977) *An Introduction to Discourse Analysis*, London: Longman.
- Coulthard, M. and Montgomery, M. (ed.) (1981) *Studies in Discourse Analysis*. London: Routledge and Kegan Paul.
- Cowan, N. (1988) 'Evolving conceptions of memory storage, selective attention, and their mutual constraints within the human information-processing system', *Psychological Bulletin*, 104 (2): 163-91.
- Dahl, Ö. (1969) *Topic and Comment: a Study in Russian and Transformational Grammar*. Stockholm: Almqvist and Wiksell.
- Dahl, Ö. (1974) 'Topic-comment structure in a generative grammar with a semantic base', in F. Daneš (ed.), *Papers on Functional Sentence Perspective*. The Hague: Mouton. pp. 75-80.
- Daneš, F. (1974) 'Functional sentence perspective and the organization of the text', in F. Daneš (ed.), *Papers on Functional Sentence Perspective*. The Hague: Mouton. pp. 106-28.
- Dik, S. (1978) *Functional Grammar*. Amsterdam: North-Holland.
- Dik, S. (1989) *The Theory of Functional Grammar*. Dordrecht: Foris.
- Dik, S., Hoffmann, M.E., Jong, J.R.d., Djiang, S.I., Stroomer, H. and Vries, L.d. (1981) 'On the typology of focus phenomena', in T. Hoekstra, H.v.d. Hulst, and M. Moortgat (eds), *Perspectives on Functional Grammar*. Dordrecht: Foris. pp. 41-74.
- DuBois, J.W. (1980) 'Beyond definiteness: the trace of identity in discourse', in W. Chafe (ed.), *The Pear Stories: Cognitive, Cultural and Linguistic Aspects of Narrative Production*. Norwood, NJ: Ablex. pp. 203-73.
- Erteschik-Shir, N. (1986) 'Wh-questions and focus', *Linguistics and Philosophy*, 9: 117-49.
- Firbas, J. (1964a) 'From comparative word-order studies (thoughts on V. Mathesius' conception of the word-order system in English compared with that in Czech)', *Brno Studies in English*, 4: 111-28.
- Firbas, J. (1964b) 'On defining the theme in functional sentence analysis', *Travaux Linguistiques de Prague*, 1: 267-80.
- Firbas, J. (1974) 'Some aspects of the Czechoslovak approach to problems of functional sentence perspective', in F. Daneš (ed.), *Papers on Functional Sentence Perspective*. The Hague: Mouton. pp. 11-37.
- Firbas, J. (1987a) 'On the delimitation of theme in functional sentence perspective', in R. Dirven and V. Fried (eds), *Functionalism in Linguistics*. Amsterdam: John Benjamins. pp. 137-56.
- Firbas, J. (1987b) 'On two starting points of communication', in R. Steele and T. Threadgold (eds), *Language Topics*. Amsterdam: John Benjamins. pp. 23-46.
- Firbas, J. (1992) *Functional Sentence Perspective in Written and Spoken Communication*. Cambridge: Cambridge University Press.
- Forrest, L.B. (1992) 'How grammar codes cognition: syntactic subject and focus of attention'. Unpublished MA thesis, University of Oregon.
- Fox, B.A. (1987) *Discourse Structure and Anaphora in Written and Conversational English*. Cambridge: Cambridge University Press.
- Frase, L.T. (1975) 'Prose processing', in G.H. Bower (ed.), *The Psychology of Learning and Motivation: Advances in Research and Theory*. New York: Academic Press. pp. 1-47.
- Gernsbacher, M.A. (1990) *Language Comprehension as Structure Building*. Hillsdale, NJ: Lawrence Erlbaum.

- Givón, T. (ed.) (1983) *Topic Continuity in Discourse: a Quantitative Cross-Language Study*. Amsterdam: John Benjamins.
- Givón, T. (1989) *Mind, Code and Context: Essays in Pragmatics*. Hillsdale, NJ: Lawrence Erlbaum.
- Givón, T. (1991) 'Serial verbs and the mental reality of "events": grammatical vs cognitive packaging', in E. Traugott and B. Heine (eds), *Approaches to Grammaticalization*, vol. 1. Amsterdam: John Benjamins. pp. 81-127.
- Goodenough, C. (1983) 'A psycholinguistic investigation of theme and information focus'. Unpublished PhD dissertation, University of Toronto.
- Grimes, J. (1975) *The Thread of Discourse*. The Hague: Mouton.
- Grosz, B. (1974) 'The structure of task oriented dialogue' (in German), in *IEEE Symposium on Speech Recognition: Contributed Papers*. Pittsburgh, PA: Carnegie Mellon University Computer Science Department. pp. 250-3.
- Guindon, R. and Kintsch, W. (1984) 'Priming macropropositions: evidence for the primacy of macropropositions in the memory for text', *Journal of Verbal Learning and Verbal Behavior*, 23 (4): 508-18.
- Gundel, J. (1974) 'The role of topic and comment in linguistic theory'. PhD dissertation, University of Texas, Austin.
- Gundel, J. (1988a) 'Universals of topic-comment structure', in M. Hammond, E. Moravcsik and J. Wirth (eds), *Studies in Syntactic Typology*. Amsterdam: John Benjamins. pp. 209-39.
- Gundel, J.K. (1988b) *The Role of Topic and Comment in Linguistic Theory*. New York: Garland.
- Hajicová, E. (1984) 'Topic and focus', in P. Sgall (ed.), *Contributions to Functional Syntax, Semantics, and Language Comprehension*. Amsterdam: John Benjamins. pp. 189-202.
- Halliday, M.A.K. (1967a) 'Notes on transitivity and theme in English, Part 1', *Journal of Linguistics*, 3: 37-81.
- Halliday, M.A.K. (1967b) 'Notes on transitivity and theme in English, Part 2', *Journal of Linguistics*, 3: 199-244.
- Halliday, M.A.K. (1973) *Explorations in the Functions of Language*. London: Edward Arnold.
- Halliday, M.A.K. (1976) 'Theme and information in the English clause', in G. Kress (ed.), *Halliday: System and Function in Language*. London: Oxford University Press. pp. 174-88.
- Halliday, M.A.K. (1985) *An Introduction to Functional Grammar*. London: Edward Arnold.
- Halliday, M.A.K. and Fawcett, R.P. (eds) (1987) *New Developments in Systemic Grammar: Theory and Description*. London: Frances Pinter.
- Hawkinson, A.K. and Hyman, L.M. (1974) 'Hierarchies of natural topic in Shona', *Studies in African Linguistics*, 5: 147-70.
- Hayashi, A. (1995) 'American learners' use of Japanese *wa*'. MA thesis, University of Oregon.
- Hinds, J. (1977) 'Paragraph structure and pronominalization', *Papers in Linguistics*, 10: 77-99.
- Hinds, J. (1979) 'Organizational patterns in discourse', in T. Givón (ed.), *Discourse and Syntax*. New York: Academic Press. pp. 135-57.
- Hinds, J., Maynard, S.K. and Iwasaki, S. (eds) (1987) *Perspectives on Topicalization: the Case of Japanese 'wa'*. Amsterdam: John Benjamins.
- Hopper, P. (1979) 'Aspect and foregrounding in discourse', in T. Givón (ed.), *Discourse and Syntax*. New York: Academic Press. pp. 213-41.
- Hopper, P. and Thompson, S. (1980) 'Transitivity in grammar and discourse', *Language*, 56: 251-99.
- Johnson-Laird, P.N. (1983) *Mental Models*. Cambridge, MA: Harvard University Press.
- Jones, L.B. and Jones, L.K. (1979) 'Multiple levels of information in discourse', in L. Jones and L. Jones (eds), *Discourse Studies in Mesoamerican Languages: Discussion*. Arlington, TX: Summer Institute of Linguistics. pp. 3-28.
- Jones, L.K. (1977) *Theme in Expository English*. Lake Bluff, IL: Jupiter Press.
- Kamp, H. and Reyle, U. (1993) *From Discourse to Logic*. Dordrecht: Reidel.
- Keenan, E.L. (1976) 'Toward a universal definition of subject', in C.N. Li (ed.), *Subject and Topic*. New York: Academic Press. pp. 305-33.

- Keenan, E.O. and Schieffelin, B. (1976) 'Topic as a discourse notion', in C.N. Li (ed.), *Subject and Topic*. New York: Academic Press. pp. 337-84.
- Kim, H.W. (1994) 'An experimental study of two functions of the Korean topic marker: thematic and contrastive'. Unpublished MA thesis, University of Oregon.
- Kim, M.-H. (1993) 'The interaction of global and local theme in English narrative'. Doctoral dissertation, University of Oregon.
- Kintsch, W. (1974) *The Representation of Meaning in Memory*. Hillsdale, NJ: Lawrence Erlbaum.
- Kintsch, W. (1988) 'The role of knowledge in discourse comprehension: a construction-integration model', *Psychological Review*, 95 (2): 163-82.
- Kintsch, W. and van Dijk, T. (1978) 'Toward a model of text comprehension and production', *Psychological Review*, 85: 363-94.
- Labov, W. and Waletzky, J. (1967) 'Narrative analysis: oral versions of personal experience', in J. Helm (ed.), *Essays on the Verbal Arts*. Seattle: University of Washington Press.
- Lambrecht, K. (1981) *Topic, Antitopic, and Verb Agreement in Non-Standard French*. Philadelphia: John Benjamins.
- Lambrecht, K. (1987a) 'Aboutness as a cognitive category: the thetic-categorical distinction revisited', in J. Aske, N. Beery, L. Michaelis and H. Filip (eds), *Proceedings of the Thirteenth Annual Meeting of the Berkeley Linguistics Society*. pp. 366-82.
- Lambrecht, K. (1987b) 'On the status of SVO sentences in French discourse', in R. Tomlin (ed.), *Coherence and Grounding in Discourse*. Amsterdam: John Benjamins. pp. 217-61.
- Lambrecht, K. (1994) *Information Structure and Sentence Form*. Cambridge: Cambridge University Press.
- Leech, G.N. (1983) *Principles of Pragmatics*. London: Longman.
- Levelt, W.J.M. (1989) *Speaking*. Cambridge, MA: MIT Press.
- Levinson, S.C. (1983) *Pragmatics*. Cambridge: Cambridge University Press.
- Levy, D.M. (1979) 'Communication goals and strategies: between discourse and syntax', in T. Givón (ed.), *Syntax and Semantics: Discourse and Syntax*. New York: Academic Press. pp. 183-210.
- Li, C.N. and Thompson, S.A. (1976) 'Subject and topic: a new typology of language', in C.N. Li (ed.), *Subject and Topic*. New York: Academic Press. pp. 457-89.
- Longacre, R.E. (1968) 'Discourse, paragraph, and sentence structure in selected Philippine languages'. Santa Ana, CA: Summer Institute of Linguistics.
- Longacre, R.E. (1976a) 'The discourse structure of the Flood narrative', in G. Macrae (ed.), *Society of Biblical Literature: 1976 Seminar Papers*. Missoula, MT: Scholars Press. pp. 235-62.
- Longacre, R.E. (1976b) *An Anatomy of Speech Notions*. Lisse: Peter de Ridder Press.
- MacWhinney, B. (1977) 'Starting points', *Language*, 53: 152-68.
- Mann, W.C. and Thompson, S.A. (1986) 'Relational propositions in discourse', *Discourse Processes*, 9: 57-90.
- Marslen-Wilson, W., Levy, E. and Tyler, L. (1982) 'Producing interpretable discourse: the establishment and maintenance of reference', in R.J. Jarvella and W. Klein (eds), *Speech, Place, and Action*. Chichester: Wiley. pp. 339-78.
- Mathesius, V. (1929) 'Zür Satzsperspektive im modernen Englisch', *Archiv für das Studium der neuen Sprachen und Literaturen*, 155: 202-10.
- Mathesius, V. (1939) 'O tak zvaném aktuálním členění větám (On the so-called actual bipartition of the sentence)', *Slovo a Slovesnost*, 5: 171-4.
- Mathesius, V. (1975) 'On the information-bearing structure of the sentence', in S. Kuno (ed.), *Harvard Studies in Syntax and Semantics*. Cambridge, MA: Harvard University Press. pp. 467-80.
- Mayer, M. (1967) *A Boy, a Dog, and a Frog*. New York: Dial Press.
- McKeown, K.R. (1985) *Text Generation: Using Discourse Strategies and Focus Constraints to Generate Natural Language Text*. Cambridge: Cambridge University Press.
- Mehan, H. (1979) *Learning Lessons*. Cambridge, MA: Harvard University Press.

- Minsky, M. (1975) 'A framework for representing knowledge', in P.H. Winston (ed.), *The Psychology of Computer Vision*. New York: McGraw-Hill.
- Mithun, M. (1987) 'Is basic word order universal?', in R.S. Tomlin (ed.), *Coherence and Grounding in Discourse*. Amsterdam: John Benjamins. pp. 281-328.
- Payne, D.L. (ed.) (1992) *Pragmatics of Word Order Flexibility*. Amsterdam: John Benjamins.
- Pichert, J.W. and Anderson, R.C. (1977) 'Taking different perspectives on a story', *Journal of Educational Psychology*, 69: 309-15.
- Posner, M.I. and Raichle, M.E. (1994) *Images of Mind*. New York: Scientific American Library.
- Prentice, J.L. (1967) 'Effects of cuing actor vs. cuing object on word order in sentence production', *Psychonomic Science*, 8: 163-4.
- Prince, E. (1978) 'A comparison of WH-clefts and it-clefts in discourse', *Language*, 54: 883-907.
- Prince, E.F. (1981) 'Towards a taxonomy of given-new information', in P. Cole (ed.), *Radical Pragmatics*. New York: Academic Press. pp. 223-56.
- Prince, E.F. (1985) 'Topicalization and left-dislocation: a functional analysis', *Annals of the New York Academy of Sciences*, 433: 213-25.
- Propp, V. (1958) *Morphology of the Folktale*. Bloomington, IN: Indiana University Research Center in Anthropology, Folklore, and Linguistics.
- Reinhart, T. (1981) 'Pragmatics and linguistics: an analysis of sentence topics', *Philosophica*, 27 (1): 53-94.
- Rochester, S.R. and Martin, J.R. (1977) 'The art of referring: the speaker's use of noun phrases to instruct the listener', in R.O. Freedle (ed.), *Discourse Production and Comprehension: Advances in Discourse Processes*. Norwood, NJ: Ablex.
- Rumelhart, D. (1980) 'Schemata: the building blocks of cognition', in B. Spiro, B.C. Bruce and W.F. Brewer (eds), *Theoretical Issues in Reading Comprehension*. Hillsdale, NJ: Erlbaum.
- Rutherford, E. (1988) *Sarum*. New York: Ivy Books.
- Sanford, A.J. and Garrod, S. (1980) 'Memory and attention in text comprehension: the problem of reference', in R. Nickerson (ed.), *Attention and Performance VIII*. Hillsdale, NJ: Lawrence Erlbaum.
- Schank, R.C. and Abelson, R.P. (1977) *Scripts, Plans, Goals, and Understanding*. Hillsdale, NJ: Lawrence Erlbaum.
- Searle, J.R. (1969) *Speech Acts*. Cambridge: Cambridge University Press.
- Searle, J.R. (1979) *Expression and Meaning: Studies in the Theory of Speech Acts*. Cambridge: Cambridge University Press.
- Sgall, P. (1987) 'Prague functionalism and topic vs. focus', in R. Dirven and V. Fried (eds), *Functionalism in Linguistics*. Amsterdam: John Benjamins.
- Sidner, C.L. (1983) 'Focusing in the comprehension of definite anaphora', in M. Brady and R.C. Berwick (eds), *Computational Models in Discourse*. Cambridge, MA: MIT Press. pp. 267-330.
- Sinclair, J.M. and Coulthard, R.M. (1975) *Towards an Analysis of Discourse*. Oxford: Oxford University Press.
- Sridhar, S.N. (1988) *Cognition and Sentence Production: a Cross-Linguistic Study*. New York: Springer-Verlag.
- Swales, J. (1981) *Aspects of Article Introductions*. Aston ESP Research Report no. 1. The Language Studies Unit, University of Aston in Birmingham.
- Tannenbaum, P.H. and Williams, F. (1968) 'Generation of active and passive sentences as a function of subject and object focus', *Journal of Verbal Learning and Verbal Behavior*, 7: 246-50.
- Tomlin, R.S. (1983) 'On the interaction of syntactic subject, thematic information, and agent in English', *Journal of Pragmatics*, 7: 411-32.
- Tomlin, R.S. (1984) 'The treatment of foreground-background information in the on-line descriptive discourse of second language learners', *Studies in Second Language Acquisition*, 6: 115-42.

- Tomlin, R.S. (1985) 'Foreground-background information and the syntax of subordination', *Text*, 5: 85-122.
- Tomlin, R.S. (1986) 'The identification of foreground-background information in on-line descriptive discourse', *Papers in Linguistics*, 19: 465-94.
- Tomlin, R.S. (1987a) 'Linguistic reflections of cognitive events', in R. Tomlin (ed.), *Coherence and Grounding in Discourse*. Amsterdam: John Benjamins. pp. 455-80.
- Tomlin, R.S. (1987b) 'The problem of coding in functional grammars', paper presented at the UC Davis Conference on the Interaction of Form and Function in Language, Davis, California, April 1987.
- Tomlin, R.S. (1995) 'Focal attention, voice, and word order: an experimental, cross-linguistic study', in P. Downing and M. Noonan (eds), *Word Order in Discourse*. Amsterdam: John Benjamins. pp. 517-54.
- Tomlin, R.S. (1997) 'Mapping conceptual representations into linguistic representations: the role of attention in grammar', in J. Nuyts and E. Pederson (eds), *With Language in Mind*. Cambridge: Cambridge University Press. pp. 162-89.
- Tomlin, R.S. and Pu, M.M. (1991) 'The management of reference in Mandarin discourse', *Cognitive Linguistics*, 2 (1): 65-95.
- Tomlin, R.S. and Villa, V. (1994) 'Attention in cognitive science and SLA', *Studies in Second Language Acquisition*, 16 (2).
- Vachek, J. (ed.) (1966) *The Linguistic School of Prague: an Introduction to its Theory and Practice*. Bloomington, IN: Indiana University Press.
- Vallduvi, E. (1992) *The Informational Component*. New York: Garland.
- van Dijk, T.A. (1977) 'Sentence topic and discourse topic', in B.A. Stolz (ed.), *Papers in Slavic Philology 1: In Honor of James Ferrell*. Ann Arbor, MI: Department of Slavic Languages and Literature, University of Michigan.
- van Dijk, T.A. (1980) *Macrostructures*. Hillsdale, NJ: Lawrence Erlbaum.
- van Dijk, T.A. (1982) 'Episodes as units of discourse', in D. Tannen (ed.), *Analyzing Discourse: Text and Talk*. Washington, DC: Georgetown University Press.
- van Dijk, T.A. (ed.) (1985) *Handbook of Discourse Analysis*. London: Academic Press.
- van Dijk, T.A. and Kintsch, W. (1983) *Strategies of Discourse Comprehension*. New York: Academic Press.
- Ward, G. (1988) *The Semantics and Pragmatics of Preposing*. New York: Garland.
- Weil, H. (1887) *The Order of Words in the Ancient Languages Compared with that of the Modern Languages* (1844) (trans. C. Super), 3rd edn. Boston: Ginn.