

5

The Discourse-Knowledge Interface

Teun A. van Dijk

Discourse and knowledge as multidisciplinary phenomena

One of the major challenges of Critical Discourse Analysis (CDA) is to make explicit the relations between discourse and knowledge. Both discourse and knowledge are very complex phenomena studied in virtually all disciplines of the humanities and social sciences. Thus, we may expect that also a theory of their relationships has philosophical, linguistic, psychological, sociological and anthropological dimensions.

The philosophical enquiry, developed in epistemology, focuses on fundamental issues of the nature of knowledge, traditionally defined as 'justified true beliefs' (for a selection of work in epistemology where this concept is discussed and criticized, see, for example, Bemecker and Dretske, 2000). I shall deviate from this orthodoxy as well as from most other approaches by defining knowledge as the consensual beliefs of an epistemic community, and shall reserve truth as a property of assertions. Only situated talk or text may be said to be true or false; for instance, when the beliefs expressed by them are asserted to correspond to the facts. Beliefs themselves may, or may not, correspond to 'reality', but have no truth values unless discursively asserted.

Linguistics has traditionally ignored knowledge, and it is only in cognitive grammar that knowledge has appeared as an important category (see, for example, Langacker, 1983; Fauconnier, 1985). In linguistic discourse analysis, it is especially the late Paul Werth who has made interesting proposals on the role of knowledge in discourse (Werth, 1999). In the theory of generative grammar, knowledge appears especially as implicit knowledge of the (rules) of grammar, shared by the members of a language community. Cognitive approaches explore the relations between meaning and knowledge, thus blurring the classical distinction between language and thought. For instance, in modern metaphor theory, it is assumed that virtually all meanings are organized by underlying metaphorical concepts and processes, whose 'embodied' nature also shape the ways we know the world (Lakoff and Johnson, 1980, 1999).

Psychology and Artificial Intelligence (AI) have undoubtedly contributed most to our contemporary knowledge about knowledge, defined as mental representations in memory (Schunk and Abelson, 1977; van Dijk and Kintsch, 1983; Britton and Graesser, 1996; Bechtel and Graham, 1999; Markman, 1999). Although 'representational' formats also have their critics, knowledge representation theories have meant a major advance in our understanding of discourse processing. Producing and comprehending discourse not only involves the processing of meaning, form and action, but presupposes vast amounts of knowledge; for instance, during lexicalization, stylistic variation, and especially for the processing of meaning. Notions such as topics, global and local coherence, implication, presupposition, schematic structures and a host of other properties of discourse, all require a knowledge component. And not only the meaning of discourse requires a knowledge component, but also its forms. However, in order to further limit the size of a potentially vast area, I shall focus in this chapter on only some of the semantic properties of the discourse-knowledge interface.

Knowledge is not only mental, but also social, as many contemporary directions in pragmatics and discourse studies show (Gumperz and Levinson, 1996; Potter, 1996; Wodak, 1996; see also the early work of Kreckel, 1981). Knowledge is acquired, shared and used by people in interaction, as well as by groups, institutions and organizations. Indeed, without such a social basis, knowledge would be no more than personal belief. Consensus, common sense or common ground are among the many notions that define this social dimension of knowledge (Clark, 1996). It is this social nature of shared knowledge that defines presupposition and that allows discourse to be understandable without making all relevant knowledge explicit all the time. Like all other scarce social resources, knowledge may be a power resource, that is, the 'symbolic capital' of specific groups (Bourdieu, 1988). Knowledge may be dominant, and may (have to) be ratified and legitimated, or may be challenged as such by alternative forms of beliefs (Foucault, 1972). Knowledge is expressed, conveyed, accepted and shared in discourse and other forms of social interaction. It may be spread and acquired through talk and text of social institutions such as governments, media, schools, universities and laboratories. In sum, many fundamental properties of knowledge need to be dealt with in a sociological approach.

Finally, knowledge has an important cultural dimension, and hence needs an anthropological or ethnographic account (Holland and Quinn, 1987; D'Andrade, 1995; Shore, 1996). Epistemic communities are not merely social groups or institutions, but also communities of practice, thought and discourse. More than any other property of humans, knowledge has been used to define the very basis of cultures: one belongs to the same culture, and one can only act competently as a member of such a culture when one shares its knowledge and other social cognitions. The epistemic common ground that allows discourse production and understanding needs

definition in terms of culture. Even when we speak of the knowledge shared in an organization or by a group, we often do so in terms of 'culture'. Whereas in several other disciplines the cognitive and the social dimensions of knowledge have seldom been fruitfully combined, cognitive anthropology is one of the interdisciplines where such an integration has proved to be very successful.

Similar remarks may be made for the notion of discourse, which also has philosophical, linguistic, cognitive, social and cultural dimensions — and of course historical ones (instead of providing a vast bibliography here, I may refer to the chapters contributed to van Dijk, 1997). That means that also the interface between discourse and knowledge needs to be multidisciplinary. This is not surprising when we realize that they mutually need and presuppose each other: discourse production and understanding is impossible without knowledge, and knowledge acquisition and change usually presupposes discourse. Indeed, it has been claimed that whatever is socially relevant of knowledge is usually also expressed in text or talk.

Given the obvious limitations of a single chapter, we can only examine some of the many properties of this complex interface between discourse and knowledge. Although all dimensions mentioned above are closely inter-related, I shall focus on the cognitive and semantic aspects of the discourse-knowledge interface, also because the social aspects of knowledge are much better known in CDA, as is the case for the work of Foucault, Gumperz and Bourdieu among others. It is in this interface that we are able to bridge the fundamental gap between knowledge (and hence the mind), and discourse meaning (and hence social interaction), and hence between discourse and society and discourse and culture.

Knowledge analysis and CDA

It is not the main task of this chapter to spell out extensively the relationships between what we may call 'epistemic analysis' and CDA. We first have to establish what epistemic analysis is in the first place, since in discourse analysis that is not a very common enterprise.

However, there are some obvious links between CDA and the study of the relations between knowledge and discourse structures. One of the general aims of CDA is to study the discursive reproduction of dominance (power abuse) and its consequences on social inequality (van Dijk, 1993b). Such social power relations are based on the preferential access to or control over scarce social resources by the dominant group. These resources are not only material, but also symbolic (see also Bourdieu's (1988) notion of 'symbolic capital'), and knowledge as well as access to public discourse are among the major symbolic power resources of contemporary society. In order to study power and its abuse, it is therefore crucial to understand how exactly powerful groups and institutions (such as media, universities, and so on) manage

and express their knowledge in public discourse. This is what I shall do in the illustrative analysis below.

There are many ways such an epistemic analysis of dominant group discourse can be further focused on in a critical perspective. Power abuse or domination, as we define it, is ultimately based on the breach of human or social rights, that is, of laws, principles or norms regulating the relations between people, or the public actions of groups or institutions. Thus, of a newspaper it may normatively be expected that it does not deliberately lie, that it provides essential information about news events and does not provide irrelevant personal information that might hurt people or groups (such as the ethnic group membership of perpetrators of crimes). This variant of the Gricean principles, duly made more explicit, may be applied to the management of knowledge by all powerful groups and institutions. Thus, of scholars, politicians, journalists and legal specialists we may expect that they do not use their specialized knowledge in order to harm, exclude or marginalize citizens, but on the contrary that they only use such knowledge in order for citizens (clients) to benefit from such knowledge. For each group or institution, we may thus formulate an applied ethics that also regulates the acquisition, uses and application of knowledge in various forms of public discourse (for the media, see, for instance, my own study on racism and what knowledge should and should not be included in news reports: van Dijk, 1991; see also van Dijk, 1993a, for a similar study of other forms of elite racism, also involving breaches of laws, norms and rules for the treatment of minorities by elites).

Similarly, an essential part of a critical approach to knowledge is also a study of the relations between knowledge and social groups and institutions: which groups or institutions have preferential access to various kinds of knowledge, which groups or institutions set the criteria for the very definition or legitimization of knowledge, and which are especially involved in the distribution of knowledge - or precisely in the limitation of knowledge in society. This more general, sociological and philosophical approach to knowledge, often associated with the work of Foucault and Bourdieu, is well-known and need not be discussed further here. Our task as critical discourse analysts is to spell out these general social strategies of dominance and knowledge management at the more detailed level of cognitive knowledge structures and strategies and how these affect discourse structures, and vice versa; how these discourse strategies may in turn affect the cognitive and then the social properties of the audience and society at large.

Knowledge and social cognition

In the same way as it would be wrong to reduce knowledge to individual, mental representations, we should not merely view knowledge as a discursive, social or cultural phenomenon. In my view, knowledge is both cognitive and as such associated with the neurological structures of the brain, as

well as social, and thus locally associated with interaction between social actors and globally with societal structures. For social knowledge to have an impact on discourse, however, we necessarily need a sociocognitive interface, according to all we know today in cognitive science.

In this chapter I shall thus explore some of the cognitive properties of the way knowledge and discourse are related. This does *not* mean, however, that cognition here is merely understood as 'individual' cognition. Although it is quite plausible and in line with our finest intuitions that people also have personal or 'private' knowledge, the kind of 'knowledge of the world' studied most in discourse analysis is clearly social. Therefore, in order to guarantee the possible integration with sociological and anthropological approaches to knowledge I also define such knowledge in terms of *social cognition*.

'Social cognition' I shall define as the system of mental structures and operations that are acquired, used or changed in social contexts by social actors and shared by the members of social groups, organizations and cultures. This system consists of several subsystems, such as knowledge, attitudes, ideologies, norms and values, and the ways these are affected and brought to bear in discourse *and* other social practices. Although what counts as knowledge for a specific epistemic community may be based on attitudes, ideologies and norms and values, we shall largely ignore these other components of social cognition. Indeed, the overall architecture of the 'social mind' is still on the agenda.

Note that in social psychology, 'social cognition' is usually associated with the (largely experimental) research tradition in the US (see, for example, Fiske and Taylor, 1991). This approach is often accused of having an individualistic slant that ignores the social dimensions of the acquisition, usage, and so on, of knowledge (Augoustinos and Walker, 1995). In Europe, alternatively, much (especially qualitative) work on shared knowledge has been done in terms of 'social representations' (Farr and Moscovici, 1984; Moscovici, 2000).

Fortunately, there have recently been attempts at integration of these two traditions, a development that is in line with my multidisciplinary framework. I shall therefore use the more general term 'social cognition' in a broader sense than has hitherto been the case in social psychology, that is, as a perspective that combines the cognitive and the social aspects of knowledge and other fundamental properties of the 'social mind' or the 'thinking society' (see also Bar-Tal and Kruglanski, 1988; Fraser and Gaskell, 1990; Breakwell and Canter, 1993; Flick, 1998).

Types of knowledge

The explicit formulation of the discourse-knowledge interface first of all requires a typology of knowledge. Instead of reducing knowledge to just one type, and thus having to find other terms for other types of knowledge, I shall maintain the general term for all types and differentiate between them with various adjectives. Since a typology of knowledge is not a main

aim of this chapter, I shall be brief about it and merely enumerate and succinctly define various types of knowledge. However, it is strange that, as far as I know, neither epistemology nor psychology has provided such a typology before, apart from mentioning some of the distinctions referred to below.

- *Declarative vs procedural knowledge.* In both philosophy and AI a distinction is often made between 'declarative' and 'procedural' knowledge, that is, between 'knowing that' and 'knowing how to' (Ryle, 1949), sometimes also described as 'explicit' vs 'implicit' knowledge (Wilkes, 1997). In this chapter I shall only be concerned with 'declarative' knowledge, also because 'knowing how' is an ability or capacity, and not knowledge as we define it. Such knowledge may be expressed explicitly in discourse or be presupposed (remain implicit). Hence we do not use the oppositional pair explicit vs implicit knowledge to refer to declarative vs procedural knowledge. Nor do we use the notion of 'declarative' because knowledge need not be 'declared' or expressed in discourse at all: indeed, it may also be presupposed by our actions or social practices.
- *Personal vs social knowledge.* Many properties of discourse and interaction require a distinction between 'private' and 'shared' knowledge. It is only the latter knowledge that can be presupposed in discourse. Personal knowledge is acquired by personal experiences and used only as a condition for personal action, and as a source for personal storytelling.
- *Types of social knowledge.* Social knowledge also comes in different types, depending on who shares such knowledge, that is, depending on its 'scope'. Thus, we may distinguish between interpersonal, group and cultural knowledge, depending on whether such knowledge is shared and discursively presupposed by two or a few people (typically in a conversation), a whole group, such as a profession or institution, or a whole culture. The traditional concept of 'knowledge of the world' is usually a form of cultural knowledge, that is, all knowledge being shared by all competent members of a culture. We might also speak of national knowledge when it is shared by the members of a nation; it is typically acquired through schooling and through the mass media of a country, and presupposed by all competent members of a nation. And finally, there might be a form of 'universal' knowledge if there is knowledge shared and presupposed by all competent members of all cultures. In these brief characterizations we already see that the sociocognitive definitions of these kinds of knowledge are closely related to discourse, namely through their typical acquisition by various discourse genres and contexts, as well as by their discursive uses, as is the case for presuppositions.
- *General vs specific knowledge.* The types of knowledge distinguished above may be specific or general. Personal knowledge about one's own experiences tends to be specific, and so is knowledge about historical events shared by members of a group, nation or culture. Socially shared knowledge, however,

is usually general, and can thus be used or 'applied' in many different contexts. Different, but closely related, is the difference between *abstract vs concrete* knowledge, which, however, is not defined in terms of the knowledge itself but in terms of the things we have knowledge *about*. This distinction is relevant, among other things, for the application of 'truth criteria', such as personal observation, for knowledge: 'I know it, because I have seen (heard, and so on) it myself.'

Why this typology?

The point of this knowledge typology is first of all to make us more aware of the fact that knowledge is not just some unitary 'knowledge of the world' but many different things, each with their own typical mental representation, memory storage, usage and expression in discourse. Second, we have already seen some typical correlates of these types with properties of discourse, that is, potential characteristics of the discourse-knowledge interface. It needs little argument that an explicit typology would need to be much more explicit, but for this chapter this first account will do.

Knowledge and representation

I shall also be brief about the representational formats of knowledge in the mind or in memory. It was already suggested that the very concept of 'representation' is controversial. The concept is usually made more explicit as 'X representing Y for Z', where X is the representation (often in some kind of language, code or other representational medium), Y is something represented by X (usually something concrete 'in the world'), and Z is a person or group. This is already pretty vague, but it will have to do here (for details, see Markman, 1999). For our discussion, it only needs to be stressed that knowledge need not 'represent' any 'outside' things, reality or world at all, but may be limited to mere mental 'constructs'; for example, as acquired, used or expressed by discourse or other forms of semiotic communication. Yet, intuitively, members usually define knowledge as something they believe *about* something (in or of the world), and in that sense knowledge is often said to be 'intentional' or indeed 'representational', whereas 'mere beliefs' (fantasies, and so on), are not. Similarly, I shall ignore the neuropsychological aspects of knowledge, for example, in terms of its realization in specific regions or overall properties of the brain and its activities (see, for example, Gazzaniga c. al., 1998).

Nor shall I take a position in the debate between 'representationalists' and 'connectionists', except by suggesting that many of the properties of knowledge and the discourse-knowledge interface as yet cannot be (well-) accounted for in terms of a connectionist theory of the mind (see Levy, 1995; Dijkstra and Smedt, 1996). That is, for practical purposes, I shall simply assume that knowledge as mental construct is schematically represented in various forms,

for example, as scripts and various other socially shared schemas, such as schemas for things, people, events, phenomena, and so on. Thus, personal experiences (biographical memories, and so on) are usually represented in mental models that have event schema structure (Johnson-Laird, 1983; van Dijk and Kintsch, 1983; van Oostendorp and Goldman, 1999). On the other hand, general and socially shared knowledge may be represented in generalized event/action schemata such as scripts (Schank and Abelson, 1977) or in terms of frames or schemata for objects, people, groups, phenomena and many other types. The same is obviously true for others forms of social cognition, such as attitudes, norms, values and ideologies (van Dijk, 1998). Note finally that depending on the theory or uses of such knowledge, such different 'formats' of knowledge may be more or less *static* or *dynamic*, that is, as a finished construct, shared (and presupposed) by people, or as an ongoing process of construction, as it is typically manifested in concrete conversation and interaction and its processes of knowledge construction or interpretation.

A unified theory of the structures of such different mental constructs, as well as of the strategies of knowledge construction (acquisition, use), is still on the agenda. We have only some general insights in terms of the uses, accessibility, connections, hierarchies, and so on, of such constructs and their components. Such a theory should obviously combine the neurological evidence of brain research with the mental evidence of psychological research. The latter should be connected to a social theory of knowledge, since we have seen that knowledge can only properly be defined in terms of epistemic communities and their criteria.

Discourse processing

One of the important advances of the cognitive theory of discourse processing has been the recognition of the fundamental role of knowledge in production and comprehension. Whether at the level of words or sentences or at the level of whole discourses, language users need vast amounts of knowledge in order to be able to produce or understand meaningful text and talk. Indeed, as we shall see in a moment, discourses are in many respects icebergs of which only the most relevant information is actually expressed as meaning. Thus, language users need social and cultural knowledge in order to establish local coherence, to derive global topics, to know what parts of sentence or propositions are asserted and which ones are presupposed, and so on. They need knowledge about specific events in order to monitor what they already know about the event, what is new information, what is foreground and background, and in general they need knowledge in order to establish whether a discourse is meaningful.

Ignoring for a moment the fundamental problem of the formats of the mental representation of knowledge, I shall merely summarize some of the relevant aspects of this crucial role of knowledge in text processing.

The knowledge typology we have proposed above suggests that there are basically two kinds of knowledge we need to attend to in discourse processing:

- personal or group knowledge about specific events: mental models
- socially or culturally shared, general knowledge: social representations.

Personal knowledge is usually represented in episodic memory, as part of our 'personal history' of experiences. In discourse processing it is the typical source of personal storytelling, and knowledge that is not presupposed but asserted. Once asserted, it may become shared interpersonal knowledge or local 'common ground'; for example, among friends and spouses, and in that case it is presupposed in later interpersonal discourse.

The same is true at the group level for the kind of event knowledge shared by a collectivity or nation, such as prominent political or historical events (the Holocaust or the terrorist attacks of 11 September 2001 on the World Trade Center and the Pentagon, for example), typically asserted and later presupposed in news discourse and other forms of public discourse.

Socially or culturally shared, general knowledge is the result of a process of learning and is presupposed in all public discourse. It is part of the 'public sphere' and typically asserted in all forms of didactic discourse for young or new members of an epistemic community. Such knowledge is usually represented in social memory, and assumed to be used for the understanding of all meanings of discourse and for the construction of mental models, that is, of the personal interpretations of discourse by individual language users.

In other words, discourse comprehension and production at all levels involve the activation, use, change or updating of various kinds of personal and social knowledge. In this process, the understanding of words, clauses, sentences, paragraphs or larger parts of text and talk requires the activation of usually implicit, socially or culturally shared knowledge; for instance, in the construction of the mental models we build of our experiences in everyday life. These mental models may again be generalized and abstracted from when constructed as more general knowledge about the world.

So far, this is standard theory in the psychology of discourse processing, and one of the main controversies is about the amount of knowledge being activated, used and applied in the construction of mental models, that is, in the interpretation of specific events. For instance, in order to understand stories about the terrorist attacks of 11 September 2001, do we need to activate all we know about airplanes, skyscrapers, terrorists, and so on, or just activate relevant parts of such knowledge, just enough to establish local and global coherence or to construct a mental model? And if so, how much is 'relevant' in such a case? (See, for example, Kintsch, 1998; van Oostendorp and Goldman, 1999.)

We have seen, however, that there is not merely one type of 'world' knowledge, but many different types of knowledge and, depending on the structures, strategies and contexts of text and talk, there may differently be addressed, used, asserted, presupposed, implied, and so on. In some situations

it is better or even necessary to make one's personal knowledge explicit in discourse (for example, in interrogations, testimonies, and so on); in other situations divulging one's personal knowledge may be irrelevant, taboo or simply uninteresting. And whereas cultural knowledge for competent members may always be presupposed in all public discourse, specialized group knowledge may only be used and presupposed by competent group members, such as professionals or members of an organization, institution or sect. That is, there is a permanent, and dynamic relationship between the cognitive processes of knowledge activation and use in discourse production and comprehension, and the properties of the communicative contexts, such as settings, types and roles of speakers, ongoing actions, intentions, genres, and so on, as we shall see below.

As we have seen for the definition of knowledge above, which also cannot be limited to an abstract epistemological or cognitive dimension but needs a sociocultural dimension in terms of epistemic communities and their criteria and practices, the psychology of text processing thus needs a sociocultural basis in which we can explain how various kinds of knowledge affect processing in different ways. Indeed, such a sociocognitive interface may result in different kinds of mental representations, specialization, modules, forms of activation, and so on. General, cultural knowledge that is usually presupposed in all discourse may not only be socially learned, over-learned, routinely used many times and hence easily accessible, but such processes of specific use may also neurologically and mentally have their consequences for the construction of such knowledge in the brain/mind. Unique personal memories of one's individual life or political events, on the one hand, or specialized general group knowledge, on the other, may have a quite different form of mental representation or brain manifestation, depending on their different use, in discourse processing. Indeed, unlike general cultural knowledge such personal, specific or specialized group knowledge is often more easily forgotten. We need much more theorizing, experiment and discourse analysis in order to find the details of this cognitive-social interface of knowledge on the one hand and discourse structures and their processing on the other.

Knowledge, context and cognition

From a discourse-theoretical point of view, knowledge is a property of participants of communicative events, and hence part of the context. As is the case for all context properties, knowledge thus controls part of the properties of text and takes as part of the process of contextualization. As we have seen above, this theoretical point of view is consistent with a cognitive account of discourse processing.

However, since we still lack an explicit theory of context, this relation between knowledge and context needs further comment. Context is usually

defined in terms of the (relevant) properties of the social situation of discursive language use, including such features as Setting (Time, Location), Participants and their various roles or identities, Actions and Goals, among other categories (in this chapter we do not review work on context; for references and further arguments on the nature of contexts as mental models, see van Dijk, 1999).

The problem with this analysis is that properties of a social situation are not directly related to the conditions of discourse processing. That is, psychologically speaking a direct context—text relationship does not make sense. Also, such an account would make contextualization deterministic: all people in the same social situation would then speak, write or understand the discourse the same way.

We need an interface between text and social situation, and again for theoretical reasons such an interface must be cognitive. In line with contemporary views on the psychology of discourse processing, I have therefore proposed to define this interface in terms of a mental model (van Dijk, 1999). That is, a context is *not* a social situation but a subjective mental model that participants construct of the relevant properties of the social situation. Such *context models* explain many aspects of contextualization, such as the personal and hence individually variable interpretation of social constraints, as well as the fundamental notion of *relevante*. Indeed, a mental model theory of context *is* a theory of relevance (see also Sperber and Wilson, 1986). Thus, it is not Location, time, gender, age, profession or other social properties of the social situation that influence how we speak, write and understand, but rather our subjective interpretations or *constructions* of such social dimensions. This also allows us to explain that sometimes such social dimensions are (constructed to be) relevant, and sometimes not.

Finally, classical analyses of contexts often had some 'cognitive' properties, such as the goals and beliefs of the participants. In our mental model approach, these cognitive conditions find a natural place — plans, goals, and so on, are also mental models, namely of future actions or states of affairs.

Knowledge, then, is one of the 'cognitive' properties of context, and hence in our approach they are part of context models. What exactly does this mean, and what does it describe or explain? The basic idea is simple: we only know what knowledge to express or to leave implicit or presupposed when we know (or have reason to believe) what our recipients know. That is, we need a representation of the knowledge of our recipients — as we also need to know something about their other characteristics. Of course, since this knowledge is vast, and we can hardly be expected to know all our recipients know, this 'common ground' knowledge must be limited to knowledge that is *relevant* for the understanding of the ongoing discourse. More in general, then, the context model that manages the knowledge side of text processing provides the overall and specific strategies applied by language users during their understanding. How does this device limit a potential infinite set of

hearer-knowledge to a manageable amount? How do language users adapt their discourses to the (vast) knowledge of their recipients, usually adequately and sometimes within a fraction of a second?

Fortunately, as we have seen above most knowledge is socially shared with other members of the same group or culture so that the speaker/writer needs no additional knowledge representation of recipients if these are known to be competent members of the same epistemic community. In other words, the contextual strategy for interaction with co-members is to presuppose the same knowledge as the speaker has.

The same is true for memory of past communicative events shared with the recipients, which also allow the speaker to activate previously shared knowledge (though far from completely, and hence possible repetitions of information). That is, the speaker may strategically presuppose that recipients share all socially and much interpersonally shared knowledge, and thus may focus especially on what recipients are most likely *not* to know as yet (news about recent events, situations in which recipients were not present and cannot have read or heard about, and so on).

In other words, as part of the context model we find what we may call a *knowledge model* or K-device which, for each text or talk, and ongoing during discourse, keeps track of what recipients know and do not yet know. This allows speakers/readers to select the relevant information from their mental models of events they want to tell or write about. Such mental models of events may be quite extensive (all people know about an event), and we know that only a tiny fragment of such knowledge is *relevant* for recipients. The knowledge component of context models thus operates as a selection device in the production of semantic meaning of discourse on the basis of mental models of events. It is this device that controls what mental model information remains implicit or presupposed in the discourse. The detailed structure and operation of this device is beyond the scope of this chapter, but the general strategy is that all relevant unknown information may be selected for inclusion in the semantic representation of the discourse.

Of course, mental model information (knowledge, opinions, and so on) about events may also be selected or excluded for other than epistemic reasons; for instance, when it is assumed to be bad for one's self-image, or when it violates politeness constraints. It is also the context model that provides the information about such social constraints on knowledge expression or suppression in discourse.

This account of context-knowledge relationships at the same time provides us with fragments of a more adequate, context-sensitive cognitive theory of discourse processing, and hence with the interface between text and social situation we need. This means that in discourse production and comprehension, it is not the text which is first produced, but rather the model of the social situation which we have called 'context'. This context model is a routine part of our daily experiences - continually represented as our

subjective models of all events in which we participate and which define our consciousness. Also, context models are dynamic and continuously updated as a function of the (interpreted) changes in the social situation as well as by the interpretations of the ongoing discourse — and the knowledge conveyed by it. It is in this way that the discourse and its understanding are adapted to the environment of the participants, merging the relevant mental and social aspects of this environment. And perhaps most importantly, context models explain how social aspects of situations are able to condition discourse structures and, conversely, how discourse structures are able to affect properties of social situations. Context models thus act as the fundamental interface between social and cognitive dimensions of discourse; and we have seen that knowledge plays a fundamental role in this context model, controlling many important aspects of discourse meaning and interpretation.

Knowledge and discourse structures

Unfortunately, there is no systematic procedure that allows us to find the structures of discourse that are controlled by the knowledge structures identified above, though given the postulated cognitive unity of meaning and knowledge, we may assume that this relationship will most clearly be exhibited in meaning. However, since meaning in turn may control grammatical or discursive form (such as word order, pronouns, or the headline of news reports or the conclusion of an argument), knowledge might at least also indirectly be related to formal aspects of text and talk that at first sight are less dependent on underlying knowledge structures.

Depending on how we define knowledge, we may also count context models as knowledge, as models of the current situation — just like mental models of events count as specific knowledge of such events. And when we take context models as forms of knowledge, and context models control many other aspects of discourse including its form and variation, then the scope of knowledge control on text is much wider. For instance, when adult speakers modify their intonation when speaking to a child, this means that intonation may vary with our knowledge of whom we are speaking to. Since, however, this would (not quite so trivially) be the case for all aspects of context, all contextualization cues of discourse would be knowledge-based, in a way that needs no further analysis here.

Another obvious and trivial link between knowledge and discourse is of course the relation between *all* discourse structures and our general (linguistic, and so on) knowledge about such structures. Reading a headline not only activates knowledge about some political event such as a civil war, but of course also knowledge about headlines — as we can readily ascertain when the headline has a position or form that is totally deviant from the usual ones. The same is true for all aspects of grammar, but this well-known relationship

between discourse processing, structures and our knowledge about discourse is also beyond the scope of this chapter.

A more productive way to examine discursive expressions of knowledge is to study the ways that different types of knowledge are mapped into discourse. Thus, we have seen that we need to distinguish between mental models of specific events on the one hand, and socially shared representations on the other. We have already suggested that the first typically are expressed in stories of various types, and the latter typically in various forms of abstract, generic discourses. This implies that different types of knowledge may be related to different (classes of) discourse genres. But we have also seen that *all* discourse processing needs general, cultural knowledge, even for the interpretation of specific expressions, and that the same genre may mix specific and generic expressions so that a discursive extrapolation of types of knowledge is not as straightforward as one would hope. Thus, instead of starting with properties or types of knowledge and finding evidence for them in discourse structures, let us begin by exploring some discourse structures and examining how these are linked to underlying knowledge structures. We shall start with the more obvious semantic structures and then examine some formal structures. It need not be repeated that such an exploration is tentative, and that in a single chapter only a few aspects of the very complex relations between discourse and knowledge can be investigated.

Example

By way of example, I shall use an editorial that appeared in the *New York Times*, 17 May 2001, 'SETBACK ON MEDICAL MARIJUANA'. The article was about the unanimous Supreme Court decision to ban marijuana as a medical drug, which went against an earlier decision on the part of some US states.

As suggested above, the knowledge activated (by journalist or reader) in the processing of this article is controlled by the knowledge device of the context model of the journal or reader. That is, the journalist writing this editorial activates what he or she thinks the readers know or should know on the issue, and which knowledge thus can be presupposed or left implicit. Note also that the context model activates the knowledge of the journalist about editorials as a genre, about the *New York Times* (henceforth *NYT*), as the purported medium, on the probable other social cognitions of the readers (such as their attitudes and ideologies about drugs and marijuana), as well as the social or political goals of the journalist, such as influencing the opinions of the readers or of the government. All this contextual knowledge will potentially be relevant also in the control of the knowledge device of the context model. For instance, assumptions on the ideology of the readers also affect what we expect them to know (for example about marijuana, or their experiences with marijuana) and what they will probably infer from the editorial.

Headline

One of the most important properties of the semantics of discourse, as well as of its schematic conventional form, is the headline, which literally heads an article, is printed in bigger type and hence calls attention, is generally read first, and expresses the (intended) main topic of the article, that is, the top of its semantic macrostructure, also in strategic cognitive processing. The proposition expressed by the headline is also a strong strategic suggestion to the readers to construct this as the top macro proposition of their mental model of the event to be represented — or to add or modify an opinion already formed in an earlier model when readers heard about this case. That is, this proposition may be interpreted as the summary of the current opinion of the NYT on the Supreme Court's decision to ban marijuana as a medical drug, and hence as one of the top macro propositions of the mental model of the current opinion editorial about this event. Note, though, that a headline as part of the text is also a clause, with its own lexical (for example) properties, and is not merely a global proposition. This means that even if the headline *expresses* a major proposition, it is not the same as that proposition. That is, the actual formulation of the headline is also a function of the context model, in particular of the social or political aims of the editorial and the newspaper. Since this editorial is a critique of a Supreme Court decision, and a newspaper of record such as the NYT is not expected to attack the Supreme Court head on, let alone with aggressive language, we may expect that contextual constraints will control the expression of its negative opinion about this verdict, which will thus be formulated in mitigated terms — as is indeed the case in the choice of *setback* in the title, instead of, for instance 'disastrous decision'.

We see how the contents of some categories of the context model (such as opinions about the political role of the NYT and the relationship between the NYT and the Supreme Court — part of the Participant category of the context model) influence the transformation of the (probably) negative opinion of the event model of the journalist into a mitigated formulation in the actual text itself. And since this actual formulation of the headline is the input for the readers, we may expect a persuasive mitigating effect on the top (opinion) proposition of the model of the readers on this decision.

Apart from the complex relationships between headline, context model and event models of journalists and readers, the headline also expresses and activates general social knowledge, in this case on marijuana and in particular its medical uses. The knowledge involved here is not only more general — widespread knowledge about marijuana as a drug, but also more specific — more recent knowledge about proposals to use marijuana for medical purposes in easing the pain of patients suffering from cancer or AIDS. This knowledge is general and abstract, and socially shared at least by 'informed citizens', but is still closely related to actual 'cases' people may also remember, that is, with mental models. We here find an area of knowledge that lies at the borders

of episodic (specific) and social (general) memory: years later the cases may have been forgotten (mental models have become inaccessible) but the general knowledge about the medicinal properties of marijuana may have become common knowledge. The headline here addresses, expresses and activates this area of knowledge at the border of mental models of concrete events and the social representation of marijuana. And since most readers will also have ideologically based attitudes about marijuana — attitudes that have probably been activated and updated in relation to the recent cases in the US where the medical use of marijuana was advocated — these evaluative forms of shared social cognitions will also probably be activated by the headline. Conversely, we may assume that the reverse is the case for the journalist: expressing an opinion on the medical use of marijuana in an editorial presupposes that the journalist (and perhaps the collectivity of the *NYT*) has attitudes and ideologies about marijuana and its medical uses, and not just an isolated opinion on this Supreme Court decision.

Although we try to be rather precise in our analysis of the probable cognitive processes involved in the production and comprehension of this headline, and in particular about the role of knowledge in these processes, it needs to be emphasized that if we were required to spell out all the detailed knowledge items and inferential steps involved, we would need to write down many pages of which I shall refrain from in order not to hamper the readability of this chapter.

Next, consider the first paragraph of this editorial:

The federal government won a major legal victory Monday in its benighted efforts to prevent the use of marijuana to relieve the symptoms of pain, nausea or loss of appetite in desperately ill patients. But the Supreme Court's unanimous verdict against a California cooperative set up to supply marijuana to qualified patients need not terminate all efforts to help those who have no reasonable alternative treatment. The verdict simply shifts the onus to individual patients or to compassionate state governments to obtain marijuana for medical purposes and test the limits of federal intransigence.

The first clause of the paragraph, and especially the use of the definite

of the (definite) noun phrase *the federal government*, presupposes that the readers know what the federal government is, and that there is only one such government, but also what a government, and a federal government are. That is, in order to know what specific government the editorial is referring to, the readers obviously need to activate their general political knowledge about governments. This example also nicely shows the omnipresent role of the context model, which needs to supply the presupposed, implicit information 'in the United States of America'. This information may be left implicit for readers of the *NYT*, precisely because it will be contained in their

context models as readers of this US newspaper. And since the knowledge model of the author(s) of the editorial also features pointers to the assumed knowledge of the readers (including their knowledge that the *NYT* is a US newspaper, and so on), they can leave this information implicit also in the textual realization of the information in the event model about the federal government. Note how the strategic formulation or understanding of a simple phrase like this involves mental models of events (about what the government did), common ground political knowledge about governments, and about the US having a federal government, as well as context model knowledge about what editorial writers and readers know (also about each other). Again, writing all this knowledge and mental operations down would be a major task of codification.

It needs little further analysis to deduce that the interpretation of the adverbial expression *Monday* presupposes a context model with a Setting category for time, which specifies that 'today' is Wednesday, 17 May. This allows the inference that the decision was two days ago, and hence can be called 'recent', which is consistent with the general knowledge about editorials as a genre, which specifies that editorials are usually about recent events. This general genre knowledge about editorials will itself also be activated and applied in the context model of this particular communicative event, necessary to be able to interpret and categorize this particular text in the newspaper or on the internet. Note finally that the reference to the day of the Supreme Court decision (not yet referred to in the text) which meant a victory for the US government, will occupy the Time category of the event model being formed by the readers. In other words, inferences from context models (for example, about the time of events) may provide information (knowledge) about the time of event models that constitute the readers' interpretation of a text. Again we see how context models are at work in the formation and control of the formation of event models, and hence in understanding.

The interpretation of the next phrase, *won a major legal victory*, similarly combines several kinds of knowledge. First, the past tense of *won* calls the Time categories of both context model and event model, and is thus consistently interpreted as an event that happened (past) Monday. Second, general political and legal knowledge is activated in the interpretation of this phrase, namely in order to be able to construct that the event of a government winning a legal battle can actually be modelled (understood) by the readers. Such a predicate would not be applicable to (say) federal taxes or my cat. This is the well-known and most straightforward relation between discourse and knowledge, namely that such knowledge is necessary for the very interpretation of expressions (like the predicate phrase here) and more specifically for the construction of mental models: are governments the kind of things that can win legal battles?

Note that, although readers may have little problem understanding this phrase, it is not likely that they have a ready-made proposition in their

knowledge about the federal government that it may engage in litigation, no more than for most people or institutions. That is, it is likely that some inferences are needed in order to establish the interpretability of this phrase; for instance, that legal battles are usually engaged in by people or collections of people, such as organizations, institutions or states (and not objects or animals), and that the government is an institution and hence belongs to the set of things that can engage in legal battles. Such inferences are instantaneous and can and must be derived in milliseconds in order for this phrase to be understood and construed as part of a 'possible' mental model of the event (for details, see Graesser and Bower, 1990).

Finally, also note that the general and specific knowledge involved is metaphorical: being vindicated by a court decision is 'winning' and hence conceptualized as a 'victory', which presupposes that legal conflicts may be represented as a game or a battle. Indeed, it is rather difficult to describe the positive outcome of a legal decision in terms other than 'winning'. If this metaphorical conceptualization of our knowledge about legal trials in terms of games or battles is part of the very knowledge structure about such trials, it may also affect the further interpretation of the text in the same metaphorical terms, that is, as a battle between the (conservative) Bush government, and (more liberal) state governments or medical organizations, with the (predominantly conservative) Supreme Court as ally of the government. Incidentally, the expression *winning a victory* might normatively be considered to be tautological and a contraction of 'winning a battle' and '(having a) victory'.

The next phrase, *its benighted efforts to prevent the use of marijuana*, the predicate of the US government, first of all continues and confirms the activation of the knowledge about marijuana, which is consistent with the knowledge about 'using (drugs)' and the knowledge about prevention, which in turn is compatible with efforts or policies of a government responsible for upholding the laws that limit the use of drugs. Indeed, part of the knowledge complex activated by marijuana may feature information about prohibition, government policies, and so on, and hence be directly applicable in the mental model construction of the readers understanding this fragment.

The use of the stylistically formal word *benighted* in this case, expressing a negative opinion about the government's intellectual or moral virtues, and attributing to it backwardness in its efforts to prevent the medical use of marijuana, signals the first explicit opinion of this paragraph. That is, it is not only knowledge that is expressed or activated here, but also opinion or attitudes. Part of the knowledge structure of marijuana is that its use in many countries is prohibited or controversial but that as a soft drug it does not do much harm, and that many liberal people advocate freedom of use, especially in medical situations when people need it. That is, the meaning of 'benighted' is consistent with the normative, moral aspect of the knowledge we have about the prohibition of the use of marijuana. As an opinion it is a manifestation of the negative opinion of the (relatively liberal) *NYT*

about the current (conservative) US government. However, this calls for knowledge represented in the context model of the journalist and the readers about the political and ideological orientation of the *NYT* and about its likely relations with the current government. All this information provides for the plausibility of the critical opinion expressed by *benighted*. That is, even for the understanding of evaluative meanings in terms of underlying opinions or attitudes, we need to activate and apply general social knowledge in order to be able to judge whether the opinions are relevant. Note finally that the very lexical selection of *benighted* (instead of, say, 'reactionary') also indexes the formality of the communicative event and the written/printed dimension of the genre, and the formality of the relations between a major newspaper and the Supreme Court, as indicated above.

The last phrase of this sentence, *to relieve the symptoms of pain, nausea or loss of appetite in desperately ill patients* briefly describes the nature of the medical uses of marijuana. Its concepts ('symptoms', 'pain', 'ill', 'patients', and so on) are all consistent parts of our knowledge about the 'medical' application of drugs, and would only need a few inferences to be fully interpreted. Of course, this phrase does more than merely describe some medical uses of marijuana. Indeed, the editorial could simply have abstracted from this knowledge and written, 'prevent the medical use of marijuana'. It does not, and gets down to the (painful) details of illness, and in addition adds 'desperate' to 'illness'. In other words, even at the abstract level of a Supreme Court case and government policies, we find a change of *level of description* to a much more detailed, concrete description of the medical uses of marijuana as a drug. Such a stylistic change has rhetorical and persuasive functions. Rhetorically, it calls on the feelings (pity, sympathy) of the readers by confronting them with the details of serious illness in an effort to influence their opinion about the medical use of marijuana. Implied in this case is the opinion that its morally backward stance on the use of marijuana is more important for the government than the plight of terribly ill people — thus legitimating the critical use of *benighted*.

In this last example, we see how concrete, everyday reader knowledge about illness is activated in order to obtain a preferred opinion in a mental model, through the manipulation of the readers, emotions triggered by reading about the misery of very ill people. Just one phrase activates knowledge at various levels, social attitudes and personal opinions about ill people, social and political attitudes and personal opinions about the (conservative) government, as well as emotions that may be used in the construction of the ongoing event model. We have seen that discursively these processes are expressed and signalled by the use of specific (emotion-arousing) words such as 'desperately' by the rhetorical device of an enumeration and by the change from a high/abstract to a lower level of description.

Although the government is explicitly described and judged as being *benighted*, it is not said but *implied* that it is also hard and heartless in

preventing the use of a drug in order to relieve suffering. It is also not said but implied that such a policy is typical of a conservative government, and hence ideologically consistent. And finally, it is implied that if the *NYT* thinks that prohibition of the medical use of marijuana is 'benighted', propagating its use is liberal, progressive, modern and especially humane, and since its critical position against the government presupposes such an attitude about marijuana, it is also implied that the *NYT* has these positive properties — which is part of the self-identity category in the context model of the journalists of the newspaper. In the context model of most readers of the *NYT* its attitude would simply be consistent with their own attitude about the newspaper, and hence the editorial would hardly be an ideological surprise.

We see that such a conclusion operates largely in terms of a rather impressive set of inferences and bodies of knowledge. Thus, really understanding the editorial is not limited to understanding its words or sentences, and not even limited to the knowledge needed merely to understand these words, but also involves complex sequences of inferences about social and political presuppositions and the implications of these interpreted meanings as constructed in the mental model of an event. Very much present in these political implications are the contents and inferences drawn from the mental model the journalists and the readers have of the context, that is, of themselves, of the media, of government, of the relations between government and media, about their own attitudes about marijuana, and so on. These implications are controlled by the overall (genre) goal of editorials to give an opinion on recent events and to criticize important organizations, institutions or persons.

Systematic analysis

After this more detailed but still informal and unsystematic description of the relations between discourse and knowledge, we shall be more succinct and more systematic in the analysis and 'epistemic interpretation' of the rest of the paragraph. After the type of knowledge indicated, we only mention one or two general knowledge propositions needed to establish coherence or to derive a meaningful interpretation. The list of actual knowledge activated could run into many dozens, and sometimes hundreds, of relevant propositions. Below, bold italics indicate the word or phrase that is being analysed in each line. Where a whole phrase is analysed, the quote is just in italics.

- | | |
|---------------------------------------|---|
| 1. <i>But the Supreme Court's</i> | Semantic contrast. General political knowledge: Legal victory of government. Makes use of marijuana difficult. |
| 2. <i>the Supreme Court's verdict</i> | Definite description. Presupposition. General/National political knowledge about legal affairs: Legal victory. Verdict. Specific knowledge (mental model): Readers know about the verdict. |

3. <i>Supreme Court</i>	Name of institution. General/National political knowledge; scriptal knowledge: Legal victory of government because of Supreme Court decision.
4. <i>unanimous verdict</i>	Topic. Nominalization. Legal knowledge about Supreme Court: Unanimous decisions presuppose consensus.
5. <i>against a California cooperative set up</i>	Participant. Legal knowledge: The losing party of the trial. Social-political knowledge: California is (more) liberal in drug matters. Specific knowledge (public mental model): Readers know about the California plans.
6. <i>to supply marijuana to qualified patients</i>	New social knowledge: Marijuana is a useful medicine for seriously ill people. Specific knowledge: People know about these actions of the California cooperative. Medical knowledge: Patients are beneficiaries of treatment. Implication: 'qualified'. Legitimization of drug use.
7. <i>need not terminate all efforts</i>	Predicate. Causal relation. Legal-Political knowledge: Supreme Court prohibition implies problems for a social programme.
8. <i>to help those who have no reasonable alternative treatment</i>	Social knowledge: Goal of actions of participant. General-Medical knowledge: Patients' Treatment. Causality: <i>No reasonable alternative</i> : Implication: Marijuana is morally/medically necessary.
9. <i>the verdict</i>	Definite expression. Topic. Specific knowledge: Verdict known while mentioned before.
10. <i>simply shifts the onus to individual patients</i>	Predicate. Legal knowledge: Official prohibition does not end 'illegal' practices. Implication: Individual patients are victims of verdict. Opinion implication: Government and Supreme Court are immoral.
11. <i>or to compassionate state governments</i>	Participant. Legal-Political knowledge: States have some freedom to act independently of Supreme Court decision. General knowledge: To help very ill patients is compassionate. Implication: Government/Supreme Court not passionate.

12. <i>to obtain marijuana for medical purposes</i>	Predicate. Goal. Global coherence: to get marijuana for terminally ill patients.
13. <i>and test the limits of federal intransigence</i>	Predicate. Goal. Presupposition: Federal government is intransigent. Social-Political knowledge: Conflict States: Government. General knowledge: Intransigence is immoral. Social knowledge: Not helping patients is immoral.

This brief analysis shows the following about the relations between discourse and knowledge:

- (a) Comprehension of this passage first of all requires a huge amount of general knowledge; in this case, especially political, legal and medical knowledge
 - about the role of the (federal) government, the possible conflicts with the states, and so on
 - the implications of (unanimous) Supreme Court decisions
 - how to treat seriously ill patients
 - the role of marijuana in such treatment.
- (b) Local and global coherence requires specific (mental model) knowledge about a specific event (this particular case). For instance, this allows the editorial to mention the Supreme Court only in the second sentence, although already presupposed in the expression 'legal victory' in the first sentence. 'The verdict' similarly presupposes that the reader already knows the case. In sum, reading an editorial usually means that readers already have a mental model about an event, and the editorial may presuppose this knowledge to be known to many readers.
- (c) Knowledge is being presupposed and asserted also as part of expressing and constructing opinions, as is the case for the use of expressions such as 'benighted efforts', 'desperately ill patients', 'qualified patients', 'no reasonable alternative treatment', 'compassionate' and 'intransigence'. These expressions (in context) all imply that the government (and even the Supreme Court) is immoral.
- (d) Context model knowledge is being presupposed in the use of explicit opinion expressions (in principle excluded in news reports) and hence the critique of the government by the newspaper, the presupposed knowledge of the readers (about the California marijuana experiments, about the decision of the Supreme Court, and so on), general-political knowledge (about government, and so on) that resolves referential expressions (*the government*); *and* the social implications of the editorial — support for patients in an important social issue (the medical use of marijuana).

These, and many more types of relationships that need to be researched further, are not merely semantic-cognitive but also show up in formal structures; for instance, in definite expressions (*the federal government*), definite articles (*the verdict*), nominalizations (*effort*), connectives (*but*), embedded clauses vs main clauses (*in his benighted efforts to prevent*), adjectives that express opinions (*desperately ill; qualified patients*). In addition, for these many properties of discourse we need to examine in more detail how they show the ways that language users express, signal, emphasize or hide knowledge and other social cognitions.

Conclusion

In this chapter it has been argued that CDA and discourse studies in general need a detailed theory of the role of knowledge in discourse production and comprehension. Current work on knowledge in several disciplines often ignores the results of research in other disciplines. Against this background, this chapter has pleaded for a broad, multidisciplinary theory of knowledge in order to be able to describe in detail the interface between discourse and knowledge. Even a simple typology of discourse, as presented here, shows how complex a theory of discourse processing becomes when we take into account different types of knowledge and how they influence discourse production and comprehension. And since knowledge must (also) be defined in the social terms of beliefs shared and ratified by an epistemic community, this means that a cognitive theory of text processing needs an important social and cultural dimension: what is being expressed and presupposed in discourse depends on the social nature of the (members of) groups so that a true, integrated sociocognitive theory of knowledge-discourse processing can be developed. It has also been shown that a context model, that is, the mental representation (stored in episodic memory) of the communicative context, is an indispensable theoretical device for such a development. Knowledge is an important category of context models, the device that regulates pragmatic (deictic) interpretation, the adequate use of many pronouns and in general of style. Finally, it has been these complex relationships between knowledge, text and context that have been demonstrated in an exploratory analysis of an editorial in the *NYT*.

References

- Augoustinos, M. and Walker, I. (1995) *Social Cognition. An Integrated Introduction*. London: Sage.
- Bar-Tal, D. and Kruglanski, A.W. (eds) (1988) *The Social Psychology of Knowledge*. Cambridge: Cambridge University Press.
- Bechtel, W. and Graham, G. (1999) *A Compendium to Cognitive Science*. Oxford: Blackwell.

- Bernecker, S. and Dretske, F.I. (eds) (2000) *Knowledge: Readings in Contemporary Epistemology*. Oxford: Oxford University Press.
- Bourdieu, P. (1988) *Language and Symbolic Power*. Cambridge: Polity Press.
- Breakwell, G.M. and Canter, D.V. (eds) (1993) *Empirical Approaches to Social Representations*. Oxford: Clarendon.
- Britton, B.K. and Graesser, A.C. (eds) (1996) *Models of Understanding Text*. Mahwah, NJ: Erlbaum.
- Clark, H.H. (1996) *Using Language*. Cambridge: Cambridge University Press.
- D'Andrade, R.G. (1995) *The Development of Cognitive Anthropology*. Cambridge and New York: Cambridge University Press.
- Dijkstra, T. and Smedt, K. (eds) (1996) *Computational Psycholinguistics. AI and Connectionist Models of Human Language Processing*. London: Taylor & Francis.
- Farr, R.M. and Moscovici, S. (eds) (1984) *Social Representations*. Cambridge; New York/Paris: Cambridge University Press/Editions de la Maison des Sciences de l'Homme.
- Fauconnier, G. (1985) *Mental Spaces: Aspects of Meaning Construction in Natural Language*. Cambridge, MA: MIT Press.
- Fiske, S.T. and Taylor, S.E. (1991) *Social Cognition*. New York: McGraw-Hill.
- Flick, U. (ed.) (1998) *The Psychology of the Social*. Cambridge; New York: Cambridge University Press.
- Foucault, M. (1972) *The Archaeology of Knowledge and the Discourse on Language*. New York: Harper & Row (Harper Colophon).
- Fraser, C. and Gaskell, G. (eds) (1990) *The Social Psychological Study of Widespread Beliefs*. Oxford; New York: Clarendon Press; Oxford University Press.
- Gazzaniga, M.S., Ivry, R.S. and Mangun, G.R. (1998) *Cognitive Neuroscience. The Biology of the Mind*. New York: Norton.
- Graesser, A.C. and Bower, G.H. (eds) (1990) *Inferences and Text Comprehension. The Psychology of Learning and Motivation*, Vol. 25. New York: Academic Press.
- Gumperz, J.J. and Levinson, S.C. (eds) (1996) *Rethinking Linguistic Relativity*. Cambridge: Cambridge University Press.
- Holland, D.C. and Quinn, N. (eds) (1987) *Cultural Models in Language and Thought*. Cambridge; New York: Cambridge University Press.
- Johnson-Laird, P.N. (1983) *Mental Models: Towards a Cognitive Science of Language, Inference and Consciousness*. Cambridge; New York: Cambridge University Press.
- Kintsch, W. (1998) *Comprehension. A Paradigm for Cognition*. Cambridge: Cambridge University Press.
- Kreckel, M. (1981) *Communicative Acts and Shared Knowledge in Natural Discourse*. London; New York: Academic Press.
- Lakoff, G. and Johnson, M. (1980) *Metaphors We Live By*. Chicago: University of Chicago Press.
- Lakoff, G. and Johnson, M. (1999) *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.
- Langacker, R.W. (1983) *Foundations of Cognitive Grammar*. Bloomington, IN: Indiana University Linguistics Club.
- Levy, J.P. (ed.) (1995) *Connectionist Models of Memory and Language*. London; Bristol, PA: UCL Press.
- Markman, A.B. (1999) *Knowledge Representation*. Mahwah, NJ: Erlbaum.
- Moscovici, S. (2000) *Social Representations. Explorations in Social Psychology*. Cambridge: Polity Press.
- Potter, J. (1996) *Representing Reality: Discourse, Rhetoric and Social Construction*. London; Thousand Oaks, CA: Sage.

- Ryle, G. (1949) *The Concept of Mind*. New York: Bames and Noble.
- Schank, R.C. and Abelson, R.P. (1977) *Scripts, Plans, Goals, and Understanding: An Inquiry into Human Knowledge Structures*. Hillsdale, NJ; New York: Lawrence Erlbaum, distributed by the Halsted Press Division of John Wiley and Sons.
- Shore, B. (1996) *Culture in Mind: Cognition, Culture, and the Problem of Meaning*. New York: Oxford University Press.
- Sperber, D. and Wilson, D. (1986) *Relevance: Communication and Cognition*. Cambridge, MA: Harvard University Press.
- van Dijk, T.A. (1991) *Racism and the Press*. London; New York: Routledge.
- van Dijk, T.A. (1993a) *Elite Discourse and Racism*. Newbury Park, CA: Sage.
- van Dijk, T.A. (1993b) 'Principles of Critical Discourse Analysis', *Discourse & Society*, 4(2), pp. 249-83.
- van Dijk, T.A. (1998) *Ideology: A Multidisciplinary Approach*. London: Sage.
- van Dijk, T.A. (1999) 'Context models in discourse processing', in H. van Oostendorp and S.R. Goldman (eds), *The Construction of Mental Representations during Reading*. Mahwah, NJ: Lawrence Erlbaum, pp. 123-48.
- van Dijk, T.A. (ed.) (1997) *Discourse Studies: A Multidisciplinary Introduction*. London: Sage.
- van Dijk, T.A. and Kintsch, W. (1983) *Strategies of Discourse Comprehension*. New York: Academic Press.
- van Oostendorp, H. and Goldman, S.R. (eds) (1999) *The Construction of Mental Presentations during Reading*. Mahwah, NJ: Lawrence Erlbaum.
- Werth, P. (1999) *Text Worlds: Representing Conceptual Space in Discourse*. London: Longman.
- Wilkes, A.L. (1997) *Knowledge in Minds. Individual and Collective Processes in Cognition*. Hove: Psychology Press.
- Wodak, R. (1996) *Disorders of Discourse*. London: Longman.