Introduction to Cognition and Communication

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Linguistics, logic, philosophy, artificial intelligence, psychology: few of us can claim to be at home in all of these fields, all of which are components of cognitive science. So a book that brings these components together to give us a grasp of the relationships between cognition and communication is welcome. Which parts will be harder to follow than others depends a lot on which of these fields you’re already familiar with (or not); but eventually the picture you build up of the connections of language, thought, and human interaction makes it worth the effort.

And it is human interaction and communication where most field linguists and language development workers will probably find the most payoff in this book: whether trying to communicate effectively across language and culture differences, or within a group closer to home, or even right at home, can cognitive science and all its parts give us insights to do better?

After introductory chapters, chapter 3, “Looking for certainties” (27-74), thoroughly discusses a well-known experiment in reasoning to demonstrate that the way people almost always think, including when trying to figure out what someone else just meant by what they said, uses a lot more than logic: “[…the] experiment shows how people are not accustomed to placing so much weight on tiny words alone—they are quite reasonably much guided by what they take the intentions of the author of the words to be” (65). That as listeners or readers we are continually trying to determine an author’s or speaker’s intentions, particularly communicative intentions, supports the emphasis on recognition of communicators’ intentions in a variety of fields dealing with communication. Examples (a few of which are alluded to in the book) include Givón’s (2005) “context as other minds”; Bloom’s (2000) claim that children’s learning the meanings of words is accomplished in part by their assumption that those speaking and gesturing to them have communicative intentions; the consistent emphasis in relevance theory (RT) on communicative intentions of speakers and their recognition by hearers (e.g., Sperber and Wilson 1986/1995—and cf. speech act theory as in Searle 1983); and the large role played by “authorial intention” in general and biblical hermeneutics and exegesis in particular (e.g., Wolterstorff 1995, Vanhoozer 1998)—almost all of which have direct implications for the theory and practice of translation (see, e.g., Gutt 1991 on RT and translation). (My authorial intention in the previous sentence is to make connections for as many likely readers as possible between what this book has to say and how people carry out communication, translation, and language development.)
Chapter 4, “Managing with certainties” (75-113), continues with further examples of the way people reason about what they experience, such as our attempts to communicate with them. Evidence is given that we reason about something in terms of the context in which we encounter it, so that scenarios presented out of natural context (e.g., in experiments) are especially subject to what RT calls our “cognitive environment” (Sperber and Wilson 1995:38ff.), including our cultural assumptions (see Cole et al. 1971 for a classic example from West Africa). In the authors’ words, “people appear to be better at contentful reasoning embedded in a rich context than they are at reasoning about coin tosses or arbitrary arrangements of letters and numbers” (95).

That communication is more successful as speaker and hearer share more starting assumptions is not limited to the mere transmission of information. Referring to phatic (relationship-establishing and relationship–maintaining) communication, this book explains that “many phatic social rituals have the characteristic that not only shall they be done, but they shall be seen to be done, and this because their function is to ensure mutual knowledge. Such generation of mutual knowledge is important in generating mutual trust” (100). Language development workers and other would-be agents of change, take note! But back to just successfully conveying information: “however explicit the framework of communication is made, there is still an ineradicable grounding in a community’s implicit shared tendencies to interpret” (105).

After these chapters on examples of people communicating, chapter 5, “Content, context, and formal systems” (117-141), opens part II, “Theoretical foundations”, beginning with a summary of the preceding section, a summary worth repeating here despite some redundancy: “Interpretation…is guided both by the content of messages and by the context of their utterance. Finding an interpretation and reasoning from it are processes that interact. If our reasoning from our initial interpretation leads to contradiction or implausible conclusions, then changing interpretation is a natural response. So understanding the mind is about understanding how content, context, and formal systems interact” (117). Now, after all that salutary reminding that there is a lot more to human reasoning than logic, this chapter gives us some logic—propositional calculus—in a way that again reinforces for us the difference between reasoning in the narrow, logical sense and interpretation, or reasoning in a more everyday sense. Chapter 6, “Computation and representation” (143-157), and chapter 7, “Representation: Inside the black box” (159-179), build on this introduction to logic to explore how our minds process information coming in and how we represent it. For example, if I hear you say “Anybody got a pen I can borrow?”, why might I treat as significant the features of the sound wave that allow me to identify consonants and vowels, but pay less attention to those that allow me to recognize the voice as yours (especially when I can already see how it is that’s talking)? And as I represent to myself what I’ve heard you say, are my “representations of discourse ‘linguistic’ or ‘imagistic’? Or both?” (178).

Part III, “Models of language”, shifts the focus from human reasoning from the “content or propositions conveyed in a conversation” to “the…question of how humans work out what the content of a conversation is in the first place” (183). Chapter 8, “Describing language” (187-201), covers basic notions about language that will be familiar to readers with any background in linguistics. Chapter 9, “Words, phrases, and meanings” (203-229), introduces a notation (“discourse representation structures”) aimed at representing the meaning of sentences or of sequences of sentences explicitly enough for even a computer to be able to process correctly to deduce literal meaning. The notation is further developed and applied in the chapters 10, 11,
and 12 before the brief chapter 13, “Language in people” (319-329), brings us back to how humans process and understand language. This chapter deals among other things with “one of the most striking things about human processing of language[,]…that it works so well in the face of ambiguity” (279). Experimental evidence is presented to support the claim that as we read or listen, we can simultaneously entertain a number of alternative analyses of the language signal we’re taking in.

With part IV, “Communicating in context”, we are squarely back in the world of language in use, a world where “people can infer more about meaning than is revealed by sentences’ syntax, because they are very good at making assumptions about what the speaker or author intended to communicate” (333)—in short, pragmatics. The chapter titles reflect the four areas of pragmatic processing of communication in actual use that are explored in this section in terms of all that has gone before about both human and machine processing of language input, including the discourse representation structures of part III. Chapter 14, “Finding what a pronoun refers to” (339-381), provides clear examples of the need to specify both linguistic structural constraints (like comparing the gender and number of a pronoun with those of possible antecedents) and non-linguistic constraints, which use assumptions about the world and about a speaker’s intentions. The authors’ “knowledge constraint” is that “one prefers pronouns to have antecedents that create an overall interpretation of the text that is ‘in tune’ with background information about the world, over those interpretations that describe something ‘bizarre’” (375). (So the preferred antecedent of “it” in “If a baby hates cow’s milk, try boiling it.” is “cow’s milk” rather than “a baby”.)

Chapter 15, “Presuppositions” (383-428), clearly presents the different characteristics of presuppositions and entailments, going on to show how pronouns and presuppositions behave in similar ways in text. But this is a book about cognition and communication, not just the linguistics component of these fields, so the chapter goes beyond phenomena more familiar to linguists, modeling presuppositions systematically within the discourse representation structure framework developed in part III.

The importance of our assumptions about speakers’/writers’ communicative intentions is brought out clearly in chapter 16, “Juxtaposing sentences” (429-457): “when speakers juxtapose sentences, they rely on the assumption that the hearers will reason about why they did this” (429). So the sequence “Alex drinks a bottle of whisky a day. Keith is her boss.” (429) leads a hearer to infer that having Keith as her boss drives Alex to drink. By contrast, the sequence “John entered the room. Mary’s hair is black.” (429) usually would require so much effort to imagine a reason for juxtaposing its two component sentences that it merely sounds incoherent. Once again, “one computes more meaning from text than is revealed by the grammar” (429). The discussion of such examples is chiefly in terms of Grice’s (1975) maxims of interpretation, bringing relevance theory in only in the chapter’s “Further Reading” section. Finally, chapter 17, “Processing dialogue” (459-472), applies to dialogue the role of beliefs about communicators’ intentions and assumptions, mostly in terms of speech act theory, as in Searle (1969, 1975).

Part V, “Graphical Communication” (473-521), consisting of one chapter with the same title, explores the difference between language and graphical communication (e.g., maps, diagrams) in terms of the directness of representation (indirect, mediated by syntax, in the case of language,
but direct in the case of graphical communication) and completeness (language can leave some information out more readily than graphics can). Part VI, “Science applied to the subjective?”, likewise consists of a single chapter, “Where have all the qualia gone?” (525-545), which considers two kinds of “sustained criticism of cognitive science’s approach to understanding the mind (525), criticisms which the authors claim are “driven strongly by the intuition that conscious experience is inherently beyond the grasp of computational approaches” (526). They conclude “that the claim that mind must be understood computationally, in informational terms, is a very weak claim—almost true by definition, once we have suitably abstract notions of information and computation. Weak it may be, but an indispensable conceptual foundation nonetheless” (538). They claim further that the criticisms of cognitive science are based on “the great illusion…that they assume that we know what people do, and what they experience…. Of course, the real problem is that we don’t know what people do or experience in the first place…. If this book has generated a little wonder at the extent of our ignorance about what people do, and given some idea about some current methods of analyzing and understanding the cognitive phenomena of communication, then it will already have succeeded in its most important aim” (538). With that modest goal, it succeeded with me.

Every chapter ends with lightly annotated suggestions for further reading, and almost all chapters have one or more sets of exercises as well. The three appendixes give additional bibliographical information, bring together the grammatical rules introduced throughout the book, and provide a glossary of around 220 terms. The book appears to have been copyedited in great haste, if at all, for omissions, misspellings, and grammatical errors abound. Fortunately in most cases readers will be able to infer the writers’ intentions with reasonable certainty.

References


Vanhoozer, Kevin. 1998. *Is there a meaning in this text?: The Bible, the reader, and the morality of literary knowledge*. Grand Rapids: Zondervan.