

[“How the Mind Turns Language Into Meaning”]

Review of *The Ascent of Babel*

by Mark Canada

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In his preface to *The Ascent of Babel: An Exploration of Language, Mind, and Understanding*, Gerry T. M. Altmann explains: “I wanted to write this book so that it would be readable by non-specialists. I wanted to convey to them the excitement and challenge of *psycholinguistics*—the study of how the mind turns language into meaning, and back again.” Altmann succeeds on both counts, making his subject both accessible and interesting. Indeed, *The Ascent of Babel* has all the ingredients of a successful lay introduction to a complex subject, as well as an approach that makes it an ideal text book for a college linguistics course.

In this brief but expansive overview, Altmann explores the processes by which the human brain acquires language, interprets spoken words and sentences, produces speech, and absorbs language through reading, as well as the various ways that these processes can break down. As the preface promises, the focus is on meaning. For example, while some discussions of language acquisition emphasize the stages by which infants learn to talk, Altmann examines the possible ways that infants come to make sense of the language they hear. Comparing the prosody of speech to the music behind song lyrics, he suggests that the prosodic clues that infants hear in voices may help them to distinguish syllables--an important first step in understanding language. Meaning is also the focus of a chapter called “Words, and how we (eventually) find them,” which examines the

complex mental processes involved when a person hears and interprets a sentence. Altmann shows how aural input initially activates various words with different meanings--"captain" and "captive," for example--in the brain and how the brain then eliminates inappropriate meanings until it arrives at the correct one. Perhaps the most provocative chapter in the book is the penultimate one, "Wiring-up a brain." In some ways a culmination of earlier chapters, especially one called "On the meaning of meaning," this portion of the book contains a fascinating look at the physiological basis of meaning in the brain. Drawing on work done with an artificial neural network called an "Elman net," Altmann speculates on how neurons in the brain may learn to use context and experience to encode meaning.

Of course, a successful book for lay readers requires more than a fascinating subject. Above all, it requires clarity, and Altmann excels in this area. In addition to writing clear prose relatively free of jargon, he makes extensive use of examples and analogies. To illustrate the process by which various words are activated and eliminated, for example, he uses the metaphor of a combination lock in which tumblers fall into place. Subheadings and illustrations, furthermore, graphically reinforce the book's organization and ideas. Less obvious but perhaps more important is Altmann's expert use of transitions. As if anticipating the inevitable confusion that a lay reader--or even a linguist new to the particular material he is covering--might feel in taking in all that the book covers, Altmann speaks directly to the reader with transitional statements: "But again, so what?" "So far so good." "So what should we now conclude?" In one of the many transitional sections he uses to link chapters, Altmann writes: "What these last two chapters have done is move us some little way closer towards understanding how a

meaning is arrived at. . . . In the next chapter, we take a closer look at what meaning might be." Finally, the book is short. Thanks to a cogent style and a feel for what details can be omitted for a lay audience, Altmann manages a respectably comprehensive overview in fewer than 250 pages.

The content and clarity of *The Ascent of Babel* make it an illuminating and enjoyable read for anyone interested in how human minds communicate with one another. The same features would make it an excellent text for a college course, as well. Indeed, as he moves toward an understanding of how the brain processes language, Altmann manages a rather seamless overview of phonology, morphology, syntax, and semantics. Though less thorough, this overview has an advantage over the kind one might find in a standard linguistics text book, where concepts such as phonemes and voice onset time might strike a student as esoteric, even trivial. Because Altmann examines linguistic principles as they relate to meaning, their relevance is obvious. Finally, in addition to surveying the hypotheses that make up our current understanding of psycholinguistics, Altmann shows how Ellen Markman, William Marslen-Wilson, Stephen Crain, and other researchers have tested these hypotheses. This approach accurately depicts linguistics--like virtually any other academic field--as something mysterious and unfolding rather than a fixed body of knowledge. Indeed, particularly because of its juxtaposition of generally accepted concepts and speculation, *The Ascent of Babel* implicitly invites students to participate in the search for knowledge. This invitation, along with the lesson it teaches about academic inquiry, is the book's most appealing and important feature.