Simultaneous interpreting (SI) is one of the most complex language tasks imaginable. Forms of interpreting in professional practice, two kinds of interpreting are common: simultaneous interpreting and consecutive interpreting. Models of bilingualism, for example, need to accommodate the fact that in interpreting two languages must be activated and controlled simultaneously (Grosjean, 1997), and theories of speech perception that assign articulation a crucial role in comprehension (e.g., Liberman & Mattingly, 1985) should be reconciled with the fact that in SI production and comprehension are performed simultaneously. In consecutive interpreting, an interpreter starts to interpret when the speaker stops speaking, either in breaks in the source speech (discontinuous interpreting) or after the entire speech is finished (continuous interpreting) (see also Gerver, 1976). It then refers to text-to-text translation and contrasts with interpreting, which typically involves the verbal rephrasing of a source language utterance into a target language utterance. Interpreting Versus Translating In many respects, translating and interpreting are very similar tasks. But, before beginning our review of SI research, we describe briefly the different forms of interpreting and compare interpreting with translating to show that cognitively they should be regarded as distinct tasks. Simultaneous interpreting (SI), sometimes called conference interpreting, can be argued to be one of the most complex language tasks imaginable because many processes take place at the same time. Superior processing in particular cognitive subskills would suggest that the interpreting experience itself may boost these skills, or that interpreters are self-selected on the specific abilities required for performing the task adequately. Mixtures of text-to-text translation and interpreting also exist. For example, in so-called sight interpreting, the interpreter produces a verbal translation of a written text (Moser-Mercer, 1995). Interpreting and shadowing are similar in that both tasks involve simultaneous listening and speaking, but they are different in that shadowing does not require the input to be transformed. New input is continuously presented while the interpreter is involved simultaneously in comprehending that input and storing segments of it in memory. From a cognitive perspective, it is important to distinguish between translation and interpreting because they are likely to engage different cognitive processes (De Groot, 1997, 2000; Gile, 1997). The typical differences between translating and interpreting concern the modes of input and output. The clarity of input in interpreting can vary widely because of the variability of the speakers or because of variability of the quality of technical equipment and environmental circumstances. Consecutive interpreting puts large demands on long-term memory because it requires reciting a message into another language on the basis of memory and a few notes, whereas in SI constraints in online information processing are likely to constitute the main challenge to acceptable performance. We discuss some processing aspects of SI, such as the control of languages and language recoding. We ask whether experience in interpreting is related to some special capabilities and discuss possible cognitive subskills of SI, such as exceptional memory skills. The Experimental Study of Simultaneous Interpreting In trying to understand SI, researchers have generally taken three different approaches. The main difference between these two forms of interpreting is the timing between input and output. As a consequence, the cognitive demands of SI and consecutive interpreting are likely to be different. These are the visual and written mode case of translating and the auditory and verbal mode in the case of interpreting. SI contrasts with consecutive interpreting in that the interpreter is required to listen and
speak at the same time instead of alternating between listening and speaking. During SI, one has to listen to and comprehend the input utterance in one language, keep it in working memory until it has been recorded and can be produced in the other language, and produce the translation of an earlier part of the input, all of this at the same time. In addition to monitoring what they say or write, as normal speakers or writers would do, interpreters and translators have to match the content of what they say or write to the content of a source text. For example, interpreting is often compared with shadowing, which involves the immediate verbatim repetition of what is heard. The first approach concerns the detailed study of the output of the interpreting process under varying circumstances. Thus, language comprehension and production take place simultaneously in different languages. If we are to understand fully how this task is performed, the separate research areas of language comprehension and language production, bilingualism, discourse processing, memory, attention, expertise, and complex skill performance may all provide relevant insights and should therefore ideally all be taken into account (De Groot, 2000). Research on interpreting has its own methodological problems (e.g., Massaro & Shlesinger, 1997). We then examine a set of factors that are known to influence interpreting performance. The term translation is often used in a broad sense to refer to any way in which a fragment of source language can be turned into the analogous target language fragment, irrespective of input and output modality. In SI, the input rate is determined by the speaker of the source text. In translating, the source text is static and permanently available. To distinguish explicitly between different types of translation, in this chapter the term is generally used in its narrow sense. The hypothesis underlying this approach is that interpreters may possess specific task-relevant subskills. Regarding language production, there is a noticeable difference in the amount of output produced by interpreters and translators within a given time span. Interpreters usually work in pairs, taking turns approximately every 30 min. The second approach is to regard SI as a complex task and as such to compare it with other tasks to gain more insight about the relevant processing components. In the remainder of this chapter, we first discuss a number of essential characteristics and processing aspects of SI that together illustrate its cognitive complexity. Translators usually produce that amount of translated text in an entire day. The unique characteristics of this task and comparisons with other, similar, tasks illustrate the demanding nature of SI. Several factors influence SI performance, including the listening conditions and the language combination involved. The third approach regards SI as a complex skill and compares experienced professional interpreters with students learning SI or with untrained but proficient bilinguals. These forms of language use are unique in the sense that interpreters and translators are not supposed to contribute to the content of the message that they have to transfer. At the same time, an earlier segment has to be reformulated mentally into the target language, and an even earlier segment has to be articulated (e.g., Gerver, 1976; Lambert, 1992; Padilla, Bajo, Canas, & Padilla, 1995). On the other hand, the process of SI itself may inform theories and models within all these separate research fields (De Groot, 2000; Frauenfelder & Schriefers, 1997; Lonsdale, 1997; MacWhinney, 1997; see also MacWhinney, chapter 3, this volume). There are other obvious differences between the two (see Gile, Dilla & Martin, 1992–1995; Padilla) some of which are likely to influence the language comprehension process. A critical issue is that professional interpreters do not abound, so an adequate sample for any
given study cannot always be obtained, especially if a specific language combination is required. Translation involves rephrasing a message expressed in one language (the source language) into another language (the target language). Other methodological problems concern a lack of ecological validity of the experimental setting and the stimulus materials (e.g., Gile, 2000; but see Frauenfelder & Schriefers, 1997). This amounts to up to approximately 4,000 words on average in a 30-min turn. Next, we review research that compares SI with similar tasks. The consecutive interpreter usually takes notes while the source speech is delivered. Both are modes of bilingually mediated communication for a third party (see also Neubert, 1997). In this chapter, we discuss SI from a cognitive perspective. SI from or into sign language is especially interesting because the two languages involved are in a different modality. When people are faced with a foreign language barrier, the usual way around it is to find someone who speaks both languages to translate for them.Finally, we consider SI as a manifestation of expertise and address some issues that need to be resolved before SI can be modelled. This complexity makes the study of SI a challenging enterprise. Finally, we discuss the implications of SI for theories of language production. The rate will usually be comparable to that in normal speech, that is, about 100 to 200 words per min. It can be consulted and reread at a rate that suits the translator. Many studies are therefore prone to a lack of statistical power, making it hard to draw general conclusions from the data. Speech is transient; any information missed is irretrievable. The speed of delivery is speaking rate.