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Rod Ellis

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Understanding Second Language Acquisition

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Understanding Second Language Acquisition

Second Edition

ROD ELLIS

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To my children – Lwindi, Emma, Anne, and James – for their forbearance

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Introduction

The first edition of this book was published in 1985—thirty years ago—when second language acquisition as a disciplinary field (SLA) was still in its infancy. At that time, it was a relatively easy task to survey the quite limited research and provide an overview of the key areas of SLA. Since then research has proliferated, the boundaries of SLA have expanded, theories have been revised and new theories developed, old methodologies have been challenged and new ones proposed. This makes the task of providing a succinct but comprehensive account of the field much more challenging. I have approached it with trepidation.

This new edition has turned out, in fact, to be an entirely new book with an old title. Some of the areas that figured in the earlier edition are also addressed in this book reflecting their continuing importance: the significance of learners' starting age ([Chapter 2](#)); individual learner factors such as language aptitude and motivation ([Chapter 2](#) and [Chapter 3](#)); the order and sequence of second language development ([Chapter 4](#)); variability in learner language ([Chapter 5](#)); the role of the learner's first language ([Chapter 6](#)) and input and interaction ([Chapter 7](#)). But each of these areas has been the subject of intensive research in the last thirty years, leading to new theoretical insights. Some of the conclusions I reached in the first edition are now much less certain. For example, whether there are universal orders and sequences in the acquisition of grammatical features of a second language—for a long time an accepted 'fact'—has become a matter of dispute. The chapters that deal with these issues have been almost completely rewritten to reflect the new perspectives and findings of research completed since 1985.

Some areas I addressed in the first edition have since fallen out of favour. I have not included a separate chapter on learning strategies for example. Although work has continued in this area, there is growing recognition of the problematic nature of this construct and of the methodological weaknesses in much of the research that has investigated it. I also decided to omit dealing with linguistic universals and Universal Grammar. This is a more controversial decision and will be a disappointment to those who view SLA as a testing ground for theories of grammar. My decision was based partly on what I considered to be of relevance to the primary readers of this book—language teachers or students training to become teachers—and partly on my own conviction that purely linguistic theories, especially those that assume a separate language faculty, cannot provide an adequate account of how second languages are learned. SLA, of course, does have a role to play in linguistics, but that would need a very different kind of book to this one.

Two entirely new chapters ([Chapter 8](#) and [Chapter 9](#)) address respectively the cognitive and social aspects of second language acquisition, two of the more recent major developments in SLA. They outline the key theoretical constructs and discuss different theoretical positions, replacing the chapter in the 1985 edition called 'Theories of Second Language Acquisition'. Increasingly, researchers have turned to research in cognitive psychology to explain the mechanisms responsible for processing input and output and the role these play in learners' developing second-language systems. More recently, however,

some researchers have challenged the view that acquisition is just a cognitive phenomenon and argued that it is just as much, if not more so, social in nature. Social theories view second language learning as inextricably connected with learners' social identities and the social communities they belong to. They also see acquisition as taking place not in the learner's mind but within the social interactions in which they participate.

In the first edition, I included a single chapter on form-focused instruction. In this book, there are two separate chapters addressing instruction and second language acquisition. [Chapter 10](#) examines different types of explicit instruction (i.e. instruction directed at intentional learning of specific linguistic features). [Chapter 11](#) considers implicit instruction (i.e. instruction catering to the incidental acquisition of specific linguistic forms). In both cases, I consider these two types of instruction and the research that has investigated them in relation to theoretical positions introduced in earlier chapters.

Much of the earlier research focused on the acquisition of grammar. This led to the criticism that SLA was overly narrow in scope as it paid scant attention to phonology and vocabulary and ignored almost completely the acquisition of macro-aspects of language such as pragmatic features and interactional routines. I have tried to address this imbalance in the new book by including reference to research on all the micro-aspects of language and also on some of the macro-aspects. However, the book continues to reflect the continuing importance of grammar in SLA.

The intended readers of this book are the same as those of the first edition: undergraduate students taking an initial course in SLA who want more than a bare-bones account of the field; graduate students enrolled in applied linguistics or language teaching programmes; and teachers who want to improve their understanding of how second languages are learned both in naturalistic and instructed contexts.

An understanding of how learners learn a second language seems to me an essential requirement for language teachers. In order for teaching to be effective, it needs to accord with how learners learn. All teachers have a theory of language learning, but this is often implicit, based on their own experience of learning a language in a classroom. Hopefully, this book will help them to evaluate their beliefs about language learning, enable them to make their theory of learning explicit, and encourage them to think about how they can best ensure that their practice of teaching takes account of how learners learn. An understanding of second language acquisition serves as a basis for making pedagogic decisions in a principled manner.

I have endeavoured to make the material in the book accessible to readers with no prior knowledge of SLA. In [Chapter 1](#), I provide a brief history of SLA—from its origins in the 1960s up to today—so that readers can obtain a general picture of what SLA entails and how it has developed over time. SLA has spawned a large number of technical terms for labelling different concepts. In this respect, it is like any other academic discipline but this proliferation of metalanguage makes entry into the field somewhat forbidding. To help readers, I have provided definitions of key technical concepts when these are first introduced and also provided a glossary where readers can check their understanding when they come across them later.

This book could not have been written without support and guidance from a number of people. In particular, I would like to thank my editor, Cristina Whitecross (also the editor of the first edition), for constantly reminding me of the need to be clear and frugal with the research I elected to address. If readers find the book accessible then much of the credit

goes to her. I am also grateful to my fellow academics who gave their time to comment on the various chapters and point out my errors of omission and commission. These kind people were: Nick Ellis, Anne Burns, Peter Skehan, Elaine Tarone, Judit Kormos, Fred Eckman, Jean-Marc Dewaele, Alison Mackey, Robert DeKeyser, David Block, Patsy Lightbown, and Pauline Foster. Of course, any remaining faults in the book are of my own doing. Finally, I am grateful to Luiza Sauer who spent many hours checking the bibliographical entries.

1

Second language acquisition research: an overview

Introduction

In this book, I will make a distinction between ‘second language acquisition’ (henceforth ‘L2 acquisition’) and the field in which this is studied, which I will refer to as ‘SLA’. Readers should recognize, however, that this distinction is not uniformly adhered to by other researchers, who sometimes use ‘SLA’ to refer to ‘L2 acquisition’. It is useful, however, to make a clear distinction between the object of study and the discipline that has investigated it. The purpose of the book is to outline what SLA has discovered about L2 acquisition.

L2 acquisition is a complex process, in many ways much more complex than first language (L1) acquisition as the factors involved are more numerous. For a start, as L2 acquisition takes place after L1 acquisition, it is influenced by the first language. Also, whereas first language acquisition is almost invariably accomplished in the first few years of a child’s life, L2 acquisition can take place at any age following the onset of first language acquisition through into old age^{NOTE 1}. Many L2 learners are cognitively mature and thus can bring to bear [learning strategies](#) not available to the L1 learner. Also, the contexts of L2 acquisition are much more varied than those of first language acquisition. For many L2 learners, the only context available is the classroom.

SLA is a relatively new academic discipline. While there has been an interest in how learners acquire a second language for a long time, the systematic study of L2 acquisition did not really begin until the 1960s. Since then, the discipline has grown exponentially, spawning numerous studies and many theories. A useful way of introducing SLA, therefore, is through a brief history of its development. This is the main purpose of this chapter. First, though, I will define exactly what is meant by ‘L2 acquisition’.

Defining ‘second language acquisition’

What is ‘language’?

A distinction is often made between [competence](#) and [performance](#). For Chomsky (1965), ‘competence’ is the mental representation of the grammatical rules that comprise a speaker-hearer’s mental grammar while ‘performance’ involves the use of language for comprehension and production. For some SLA researchers, the goal is to describe and explain the L2 learner’s competence—especially grammatical competence. However, there is no direct window into competence. Competence can only be inferred by inspecting how learners use the second language. In effect, then, all that researchers can do is to investigate some kind of performance. Performance, however, involves much more than grammar. Recognition of this has increasingly led researchers to investigate both traditional areas of language (i.e. pronunciation, vocabulary, and grammar) and the use of language for social purposes in connected discourse.

What is a ‘second’ language?

Some learners learn more than one ‘second’ language. In fact, in many communities it is normal for a person to learn to speak several languages. It might make sense therefore to also talk about ‘third’, ‘fourth’, or ‘fifth’ language acquisition and there are studies of learners who have learned a ‘third’ language (for example, Cenoz and Jessner 2000). Despite these problems, SLA has stuck with ‘second language (L2) acquisition’ as an all-inclusive term for learning *any* language after the first, although recently there have been moves to reframe it as the study of bi/multilingualism in all its manifestations^{NOTE 2} (Ortega 2012).

It is common to make a distinction between ‘second’ and [‘foreign’ language acquisition](#). This involves what is essentially a contextual difference. ‘Second language acquisition’ refers to the learning of another language in a context in which the language is used as a means of wider communication—for example, the learning of English in the United States or the United Kingdom. The assumption is that learners will ‘pick up’ the language as a result of the everyday communicative situations they experience. ‘Foreign language acquisition’ refers to the learning that typically takes place in a classroom through instruction where there are no or only limited opportunities to use the second language in daily life. However, ‘L2 acquisition’ has come to be used to refer to the learning that takes place in both contexts. There is a good reason for this: while the contextual difference is very real, we cannot take it for granted that the process of acquiring a second language is different in these different contexts.

What is ‘acquisition’?

‘Acquisition’ is sometimes contrasted with ‘learning’ on the assumption that these involve different processes (Krashen 1981). Acquisition refers to the incidental process where learners ‘pick up’ a language without making any conscious effort to master it; whereas learning involves intentional effort to study and learn a language. On the face of it, this looks very similar to the ‘second’ versus ‘foreign’ language acquisition distinction:

acquisition takes place through communicating in the L2 in a second language context whilst learning takes place through instruction in foreign language contexts. However, this is a false correlation. Both acquisition and learning can take place in both contexts although there may be a bias towards the former in the second language contexts and towards the latter in foreign contexts. In accordance with general usage in SLA, I will use ‘L2 acquisition/learning’ interchangeably as cover terms for both naturalistic ‘acquisition’ and instructed ‘learning’. However, it is important to consider whether acquisition and learning are in fact different and—if they are—in what ways.

Investigating L2 acquisition

Irrespective of whether we are talking about acquisition or learning, we need to consider how we can tell whether a learner has ‘acquired’ or ‘learned’ some L2 feature. This is also quite a complex issue. For example, can we say that learners have acquired/learned a feature because they can comprehend its meaning, or do they also need to be able to produce it? Many researchers focus on learners’ ability to *produce* an L2 feature; however, it is also possible to consider acquisition/learning in terms of learners’ ability to *comprehend* a feature. Is it possible to distinguish whether a feature has been ‘acquired’ or ‘learned’? Do ‘acquisition’ and ‘learning’ result in different types of L2 knowledge? Again, we will find that it may be necessary to distinguish [implicit knowledge](#) (i.e. acquired) and explicit knowledge (i.e. learned) because these involve different capabilities for the use of a second language. However, irrespective of whether we are interested in receptive/productive abilities or implicit/explicit L2 knowledge, in order to demonstrate that acquisition (or learning) has taken place, it is necessary to show that some *development* in the learner’s knowledge system has occurred. SLA is the study of the change that takes place in the learners’ L2 knowledge over time and of what brings about this change. In this respect, it contrasts with other linguistic disciplines such as discourse analysis which are concerned only with the *use* of language. However, as we will see, there is a close connection between the ‘use’ and the ‘acquisition’ of second language.

Summing up

In this book I will use ‘SLA’ to refer to the field of study (i.e. body of research and theory that has investigated L2 acquisition). The term ‘L2 acquisition’ will be used as a general cover term for the acquisition or learning of any language other than a learner’s first language that can take place in both second and foreign language contexts^{NOTE 3}. I will also need to distinguish between the kind of knowledge—implicit and explicit—that learners acquire from time to time.

A brief history of SLA

In many respects, SLA is a parasitic discipline. It draws on different models of language taken from linguistics. It exploits concepts and methodologies for investigating L2 acquisition drawn from a variety of disciplinary fields—psychology and sociology in particular. The development of SLA, therefore, reflects these different influences and the impact they have had on SLA at different times. Early work was heavily influenced by research on first language acquisition. The attempt to explain how acquisition arose out of social interaction led researchers to draw on discourse analysis. The need to explain how learners processed the second language input they were exposed to led SLA researchers to borrow theoretical constructs from cognitive psychology. As researchers switched their attention to the social aspects of L2 acquisition, they began to draw on theories and methodologies from sociology. The inputs from these different disciplines have helped to make SLA a rich and exciting field of study, but they also create difficulties for a newcomer to this field. One of the purposes of this brief history is to help readers with such difficulties by providing them with a general picture.

Order and sequence in L2 acquisition

Early work in SLA was informed by the findings and methodology of research into first language acquisition. Brown (1973) reported a longitudinal study of three children's acquisition of a group of English morphemes (for example, plural *-s*, past tense *-ed*, and the articles 'a' and 'the'). He showed that the children achieved mastery of these features in more or less the same fixed order. Other studies (for example, Klima and Bellugi 1966) showed that children acquired syntactical structures such as English negation in a sequence of stages. These findings motivated SLA researchers to investigate whether a similar [order of acquisition](#) and [sequence of acquisition](#) occurred in L2 acquisition. A number of studies involving both child and adult second language learners (for example, Dulay and Burt 1973; Cancino, Rosansky, and Schumann 1978) provided evidence that similar—although not identical—orders and sequences occurred in naturalistic L2 acquisition. For example, L2 learners typically acquired plural *-s* (as in 'boys') before third-person *-s* (as in 'comes'). Also, all learners manifested an early stage in the acquisition of negatives by placing 'no' before the verb (for example, 'no coming today') as do children acquiring English as their first language.

These studies led to questioning of a widely held belief at that time, namely that learning involved overcoming the influence of the first language in order to form correct second language 'habits'. It was difficult to reconcile such a view of learning with evidence that showed that *all* learners, irrespective of their first language, followed a similar order and sequence when learning the grammar of a second language. This led Corder (1967) to propose that 'at least some of the strategies adopted by the learner of a second language are substantially the same as those by which a first language is acquired' (p. 164). Corder suggested that second language learners, like first language learners have a 'built-in syllabus' that directs when the grammar of a second language is acquired. Selinker (1972) subsequently gave the name that has become the standard term for referring to the mental grammar that a learner constructs and reconstructs—[interlanguage](#).

The analogy with first language acquisition, however, only worked so far. There was one obvious difference. All normal children are successful in acquiring their mother tongue. There may be differences in the rate of acquisition and also in children's ability to make use of their first language, but they all succeed in acquiring the grammar of their first language. In contrast, most L2 learners do not achieve full grammatical competence. Selinker (1972) coined the term [fossilization](#) to refer to the fact that learners stop learning even though their interlanguage does not fully conform to the target language system. However, as we will see later, the extent to which fossilization actually occurs is controversial.

The research investigating the order and sequence of L2 acquisition can be thought of as the starting point for SLA. Numerous studies appeared in the 1960s and 1970s and continue up to today although they are no longer as common as they once were. Whereas the early work was essentially descriptive in nature—i.e. it involved collecting and analysing samples of learner language—later work has been more theoretically driven, aimed at investigating specific hypotheses regarding why one grammatical feature is acquired earlier than another (see, for example, Pienemann 1998).

More recently, however, the existence of a fixed order and sequence of acquisition has been challenged by some researchers (for example, Tarone and Liu 1995), who claim that what learners acquire and the order they acquire it in depends not on their so-called built-in syllabus, but on the [social context](#) in which they are learning the second language. This is a point I will return to later in this chapter.

The early influence of L1 acquisition research in SLA is also evident in the attention that L2 researchers paid to formulaic sequences. A [formulaic sequence](#) is a ready-made chunk of language that is accessed as a whole rather than generated by combining its individual elements. We will see later that formulaic sequences are not just important for language use, but also play a role in language acquisition. Learners gradually identify the type of elements that comprise a sequence. For example, they discover that words like 'book', 'pencil', and 'ruler' can all be used to complete the 'Can I have a ____?' chunk and thus come to recognize that these words all belong to the same grammatical category.

The research that has investigated the order and sequence of acquisition and formulaic sequences is considered in [Chapter 4](#).

Variability in learner language

At any stage of development, learners will manifest variability in their use of the second language. Sometimes they will make errors and at other times they will use the target language form. In part, this can be explained by the fact that learners will sometimes draw on well-formed formulaic chunks (for example, 'I don't like') and at other times construct utterances on the basis of their current interlanguage rules (for example, 'I no like'). Variability also occurs because learners do not abandon old forms when they acquire new ones. For example, learners initially produce questions without inversion:

Where the book is?

and then later begin to use subject-verb inversion:

Where is the book?

However, learners do not instantly switch from the earlier to the later construction. Rather, they alternate between the two [constructions](#) and only gradually abandon the non-target form.

Researchers such as Tarone (1983) and R. Ellis (1985) sought explanations for this variability. Tarone claimed that, by and large, variability is systematic. She argued that learners are responsive to the situational context and make use of their linguistic resources accordingly. In situations where they do not need to attend carefully to their choice of L2 forms, they employ a [vernacular style](#) (i.e. the style of speech associated with every-day, informal use of language) while in those contexts that call for close attention to speech, they make use of their [careful style](#) (i.e. the style of speech associated with formal situations). In particular, learners are responsive to their addressee. For example, a learner might say ‘Where the book is?’ when addressing another learner of equal status but say ‘Where is the book?’ when directing the question at a teacher. Another source of systematic variability is the linguistic context. For example, learners might use the target language third-person -s form when the verb follows a pronoun (for example, ‘She lives in London’) but use the uninflected interlanguage form when the verb follows a noun (for example, ‘My mother live in London’).

R. Ellis (1985) argued that not all variability is systematic in the way Tarone (1983) described. He proposed that when a new linguistic form first enters the learner’s interlanguage, it is likely to be used interchangeably with an old form: in other words, for a while learners alternate freely between ‘Where ... is?’ and ‘Where is ...?’ Later on, however, they seek to use their linguistic resources systematically in accordance with the social context.

The importance of variability in understanding L2 acquisition is reflected in Widdowson’s (1979) comment: ‘... change is only the temporal consequence of current variation’ (p. 196). This is evident in a number of ways. [Free variation](#) gives way to [systematic variation](#). Forms that are initially only part of the learner’s careful style, over time, enter the vernacular style. Forms that figure initially only in easy linguistic contexts will gradually become available for use in more difficult linguistic contexts. The study of variability in learner language has continued over the years, drawing on increasingly sophisticated sociolinguistic models (for example, Preston 1996) and theories that emphasize the dynamic nature of second language systems (for example, de Bot, Lowie, and Verspoor 2007).

Variability in learner language is examined in [Chapter 5](#).

Rethinking the role of the first language

For a long time, there was a general assumption that the difficulties facing the L2 learner were largely due to ‘[interference](#)’ from the first language. It was thought that learning a second language involved overcoming the effects of negative [language transfer](#). Where the L1 and the L2 were similar, [positive transfer](#) assisted learning, but where the two languages differed there would be negative transfer and learning would be impeded. This was a view reinforced by proposals for language teaching at this time, which encouraged teachers to focus on the areas of difficulty created by negative transfer through intensive drilling to ensure correct L2 ‘habits’. This view of L2 learning and teaching was challenged by the research showing that learners follow a similar order and sequence of acquisition

irrespective of their first language.

The initial response was to downplay the effect of the first language. Some researchers (for example, Burt 1975) argued that negative transfer played a relatively minor role in L2 acquisition, accounting for only five per cent of the errors that learners made. However, other researchers continued to acknowledge that it played a significant role. Selinker (1972) saw it as one of the five ‘central processes’ in interlanguage development. Language transfer began to be seen as just one of several factors that contributed to L2 acquisition, rather than as the single, all-important factor.

The research that followed was directed at identifying the conditions that governed when transfer occurred and when it did not. As Kellerman (1983) put it ‘now you see it, now you don’t’. Kellerman proposed a number of factors that could explain when transfer was likely to manifest itself. One of these was [language distance](#): learners whose first language was very similar to the second language—for example, Dutch learners of English—were more likely to draw on their L1 than learners whose language was very different—for example, Chinese learners of English. But language distance was not the only factor. Learners also had an inbuilt capacity to assess which features were likely to be transferable. Researchers also recognized that first language transfer did not just manifest itself in learner errors but exerted its influence in other ways—for example, in [avoidance](#) of structures that differed from the first language. Other researchers (for example, Ringbom 1987) emphasized the role of positive transfer, especially in the acquisition of vocabulary.

Researchers have continued to show a strong interest in language transfer right up to today. The focus of this research has broadened, however. It is not focused so exclusively on pronunciation, vocabulary, and grammar but also addresses how the first language influences the expression of politeness, discourse conventions, and even gesture. There is now wide acceptance that the L1 plays a significant role in L2 acquisition, but that to understand this role it is necessary to examine how language transfer functions as a cognitive process alongside other cognitive processes. The study of language transfer has also broadened its scope to consider [conceptual transfer](#) (i.e. how the concepts associated with one language affect the linguistic choices made in another language). Language transfer is examined in detail in [Chapter 6](#) and again in [Chapter 8](#).

Input and interaction

The recognition that second language learners manifest a definite developmental route—as shown by the existence of order and sequences of L2 acquisition—together with the rejection of L1 interference as the sole factor influencing L2 acquisition led researchers to look for an alternative explanation of L2 acquisition. One possibility they examined was the role of input and interaction. The term ‘input’ refers to the samples of the oral or written language a learner is exposed to. This constitutes the ‘data’ that learners have to work with to construct their interlanguage. The term ‘interaction’ refers to the oral exchanges a learner participates in—with native speakers or with other learners—which provide both ‘input’ and opportunities for ‘output’ (i.e. use of the L2 in production).

Early research on input focused on [foreigner talk](#). This is the special register that native speakers adopt when talking to non-native speakers. It is characterized by a number of ‘modifications’ to the normal talk that native speakers use when communicating with each other—i.e. when native speakers address learners they typically speak more slowly; pause

more; use simpler high-frequency vocabulary; use full forms rather than contractions (for example, 'She is coming' rather than 'She's coming'); move topics to the front of a sentence (for example, 'John, I like him'); and avoid complex subordinate constructions. Researchers like Hatch (1983) suggested that such modifications might help to make grammatical features more salient and thus help learning. Krashen (1985) argued that input modifications make input 'comprehensible' for learners and, more controversially, that [comprehensible input](#) is all that was needed to activate the learner's built-in syllabus.

One possibility that researchers considered was whether the frequency of different forms in the input learners were exposed to matched the order of acquisition. However, the results were somewhat disappointing as the correlation was not a close one. Nevertheless, input frequency has continued to be viewed as one of the main factors that determine acquisition. N. Ellis (2002), for example, claimed that it was 'an all-pervasive causal factor' (p. 179) although he also acknowledged that 'there are many other determinants of acquisition' (p. 178). In fact, 'frequency' is not a straightforward concept. For a start, it is necessary to distinguish [token frequency](#) and [type frequency](#). The former refers to the number of times a specific linguistic form occurs in the input. The latter refers to the nature of the linguistic forms that can occur in a particular slot in a construction. For example, verbs like 'know', 'understand', and 'like' occur frequently in the construction 'I don't ____'. The early research investigated token frequency, but it is now thought that it is type frequency that is important as it helps learners to develop more abstract categories.

Humans have an innate desire to communicate with each other—what Lee, Mikesell, Joaquin, Mates, and Schumann (2009) called their 'interactional instinct'. Learners learn a language in order to interact and also they learn language through interacting. In the case of SLA, however, this fundamental truism took a while to take hold. Hatch (1978) advanced what, at that time, was a radical idea: she suggested that learners do not first learn syntactical features and then try to use them in interaction, but rather syntax emerges as a result of the kinds of interaction they typically engage in. Drawing on the methods employed in discourse analysis, she described the interactions involving both child and adult second language learners and illustrated how syntax grew out of their attempts to communicate. This idea was then developed by Long (1983b) who proposed that when there was a communication problem which speakers attempt to resolve, [negotiation of meaning](#) takes place which both helps learners to comprehend and directs their attention to specific linguistic features.

Long's proposal, which was eventually formalized as the [Interaction Hypothesis](#), has proven enormously influential, leading to numerous studies investigating whether the interactional modifications that occurred in the negotiation of meaning assisted comprehension and whether they helped learners to progress along a sequence of acquisition (for example, Mackey 1999). However, the initial formulation of this hypothesis was limited as it saw negotiation only as a source of comprehensible input and allowed no role for learner output.

The role of output in L2 acquisition proved a controversial issue. Krashen's (1985) [Input Hypothesis](#) claimed that L2 acquisition is entirely input-driven; that is, output (speaking or writing) plays no role in acquisition. However, drawing on research that showed that immersion language learners (i.e. learners who received all their school subjects through the medium of the second language) still failed to acquire a target-like grammar even though they had experienced ample comprehensible input, Swain (1985) advanced

the [Comprehensible Output Hypothesis](#). This proposed that, as well as comprehensible input, learners needed opportunities to produce ‘[pushed output](#)’ (i.e. output where they struggled to make themselves comprehensible). She pointed out that it is possible for learners to comprehend input without having to process it linguistically (for example, they could use context to guess its meaning), but that to produce concise and comprehensible output they had to engage in syntactical processing.

It is now generally acknowledged that both comprehensible input and comprehensible output are needed if learners are to achieve high levels of linguistic [accuracy](#) in a second language. Long (1996) revised the Interaction Hypothesis to take account of this. He now proposed that the negotiation of meaning facilitated acquisition in three major ways: (1) by providing the learner with comprehensible input; (2) through feedback that showed the learner when an error had been made; and (3) by prompting [monitoring](#)—i.e. encouraging the learner to make changes to the utterance that had triggered negotiation. Subsequent research has focused on (2) and (3). In particular, there are an increasing number of studies investigating [corrective feedback](#) (i.e. the effect that different ways of correcting learners’ errors has on acquisition).

The Input Hypothesis, the Comprehensible Output Hypothesis, and the Interaction Hypothesis have had an enormous influence on SLA. They have spawned countless studies investigating how input is made comprehensible, the role of production in L2 acquisition, and the role played by interaction in facilitating acquisition. While the Input Hypothesis has not changed since its initial formulation, both the Comprehensible Output Hypothesis and the Interaction Hypothesis have evolved over time, in particular as a result of the importance that researchers began to attach to the role of consciousness in language learning.

The roles of input, interaction, and output are examined in [Chapter 7](#).

Consciousness and L2 acquisition

It was at this point that SLA researchers turned to cognitive psychology to explain how input was processed by learners and thus how acquisition—viewed as an internal, mental phenomenon—took place. What motivated this development in SLA was a rather unique case study of an individual learner. Schmidt and Frota (1986) investigated the first author’s acquisition of Portuguese during a five-month stay in Brazil. Schmidt kept a diary of his observations and experiences and his interactions with native speakers were audio recorded. One of the main findings was that he only learned what he had first noticed in the input. Schmidt ‘subjectively felt ... that conscious awareness of what was present in the input was causal’ (p. 281). He also reported [noticing-the-gap](#) when he compared a non-target form he had produced with the target form that appeared in the input. This often occurred when Schmidt received corrective feedback on his own utterances.

Schmidt’s claims about the role of ‘noticing’ and ‘noticing-the-gap’ concern the role that attention plays in acquisition. In subsequent publications (for example, Schmidt 1994; 2001), he developed what has become known as the [Noticing Hypothesis](#). The crucial question for Schmidt was ‘Can there be learning without attention?’ The conclusion he reached was that while some learning might be possible without conscious attention (i.e. noticing), the more that learners noticed, the more they learned. However, Schmidt was careful to point out that noticing did not imply intentionality on the part of learners; it

could occur incidentally while they were primarily concerned with comprehending input. He also emphasized that learners did not notice 'higher-level categories' but rather exemplars of them. For example, they might notice the /s/ sound on 'boys' and also consciously register that it signalled 'more than one'. But this did not constitute conscious awareness of the rule for making nouns plural.

Schmidt's claims about the importance of conscious noticing are controversial, however. Krashen's Input Hypothesis is based on the assumption that L2 acquisition is a subconscious process; that is, he claimed that learners automatically acquire new L2 features simply as a result of comprehending the input they were exposed to. Some studies have shown learners are able to pick up some L2 features without any conscious awareness. We will consider this possibility more closely in the next section. In general, however, SLA has accepted that noticing is facilitative of acquisition. Both Long's (1996) revised Interaction Hypothesis and Swain's (1995) later account of the Comprehensible Output Hypothesis have incorporated the idea of [noticing](#). Conscious attention is seen as the key mechanism that connects input to acquisition.

Schmidt's Noticing Hypothesis has informed an increasing number of studies investigating whether (1) learners do notice linguistic forms in the input, and under what conditions, and (2) whether this results in learning. For example, researchers have experimented with various ways of highlighting problematic features in the input that learners are exposed to (for example, by putting them in bold type in a reading passage) to see if this results in their acquisition. These studies have shown that learners tend to notice some features (for example, lexis and word order) but are less likely to notice others (for example, morphological features such as third-person -s). This can explain one of the central puzzles of L2 acquisition—why learners often fail to fully acquire some grammatical features even though these occur with high frequency in the input. Features such as third-person -s (for example, 'comes') are not noticed because they are semantically redundant (i.e. they are not necessary for understanding the meaning of an utterance) and not very salient (i.e. they can easily be overlooked) and, as a result, they are not acquired. Left to their own devices, learners are much more likely to notice those features that are meaning-bearing—individual words or grammatical structures like plural -s.

Implicit and explicit learning

The influence of cognitive psychology on SLA is perhaps most evident in the research and theorizing related to the distinction between implicit and [explicit learning](#). N. Ellis (1994) defined [implicit learning](#) as 'acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operations' (p. 1). Explicit learning is a 'more conscious operation where the individual makes and tests hypotheses in search of structure' (p. 1). As defined, implicit learning is incidental (i.e. there is no intention to learn), whereas explicit learning is intentional (i.e. the learner makes deliberate attempts to learn an L2 feature). This distinction, then, echoes the earlier one that Krashen (1981) made between 'acquisition' and 'learning'.

Theories differ in how they conceptualize the implicit knowledge that results from implicit learning. Symbolic theories adhere to the idea that implicit knowledge consists of 'rules' (i.e. abstract representations of the features and patterns that underlie the actual use

of the second language). This is probably how most people conceptualize ‘knowing a second language’ and also constitutes Krashen’s view of implicit knowledge. N. Ellis (1996), however, drew on a radically different theory of implicit knowledge. [Connectionist theories](#) claim that although learners may appear to behave in a rule-like way, they do not acquire rules but rather construct a web of connections in the neural structure of the brain. Implicit learning is an associative process whereby combinations of sounds, words, and larger units of language are internalized in accordance with the frequency with which these combinations occur in the input. For example, through exposure, learners perceive that the sounds /s/, /t/, and /r/ constitute a chunk that occurs in words like ‘strong’ or that the chunk ‘I don’t’ can co-occur with words like ‘know’, ‘understand’, and ‘like’ or that a larger chunk such as ‘I don’t know’ can combine with another chunk such as ‘where is it?’ to construct what is traditionally called a complex sentence (‘I don’t know where it is’). Learning a language according to connectionist theories is not a matter of learning rules, but of learning the possible associations between chunks of varying sizes that occur in the input. Knowing a language, then, is a matter of gradually building an elaborate network of such associations through the implicit registration of their occurrence in the input. It is a slow, organic process that requires exposure to massive amounts of input.

On the face of it, a connectionist view of learning contradicts the Noticing Hypothesis as it assumes that an associative network is constructed without consciousness. However, N. Ellis (2005) acknowledged that the initial registration of a linguistic feature might occur consciously but ‘thereafter there is scope for its implicit learning on every subsequent occasion of use’ (p. 321). In other words, explicit learning serves as a foundation for implicit learning. Thus, although—like Krashen—N. Ellis saw implicit and explicit learning as distinct, involving separate neurological mechanisms, he did not see them as entirely unconnected. R. Ellis (1994) suggested ways in which the explicit knowledge resulting from explicit learning can assist the processes involved in implicit learning. He suggested that if learners have explicit knowledge of a grammatical rule, they are more likely to pay attention (i.e. ‘notice’) exemplars of this rule in the input they are exposed to and—through noticing—fine-tune their developing, implicit knowledge-system. Explicit knowledge of rules could also prime ‘noticing-the-gap’. Furthermore, learners could use their explicit knowledge to construct sentences in the L2, which then served as ‘auto-input’ that fed into the mechanisms responsible for implicit learning. Thus, whereas Krashen saw little value in explicit knowledge, both N. Ellis and R. Ellis argued that learners could utilize their conscious understanding of underlying rules in ways that facilitate implicit learning.

The distinction between implicit and explicit learning is important for understanding the role played by form-focused instruction in L2 acquisition. A key question is whether teaching learners ‘rules’ can assist the development of learners’ implicit knowledge, or whether it simply results in explicit knowledge. Another key question is what type of instruction is needed to facilitate implicit learning.

Dual-mode system

It should be clear from the foregoing explanation that the learner’s second language knowledge can be both explicit and rule based or implicit and exemplar based—i.e. consists of ready-made stored chunks. In other words, learners may possess a dual-mode system.

For example, the utterance 'I don't know' can be processed as a single chunk or can be computed on the basis of the learner's knowledge of the rules for negation in English. Skehan (1998) claimed 'two systems co-exist, the rule-based analytic, on the one hand, and the formulaic, exemplar-based on the other' (p. 54).

There is a good reason for a dual-mode system. As Skehan pointed out, memory is organized for convenience of use and to take account of the fact that learners' capacity for processing information is limited. When they need to communicate rapidly and fluently, learners will draw substantially on the [exemplar-based system](#) which is capacious and easily accessed. However, when they need to communicate complex ideas concisely and accurately, they will resort to the [rule-based system](#). Skehan argued that L2 learners need to build both systems and proposed that this could be achieved by manipulating the conditions under which they were required to use the L2. For example, if learners are given time to plan before they perform a task, they will be able to draw on their rule-based knowledge but if they have to perform the task straight off they will more likely draw on their exemplar-based knowledge.

L2 acquisition as skill-learning

[Skill-learning theory](#) also originated in cognitive psychology. It draws on a similar distinction to the implicit/explicit distinction but proposes a very different relationship between them. Anderson's (1993) ACT theory distinguishes [declarative knowledge](#) (i.e. the representation of facts) and [procedural knowledge](#) (i.e. the representation of actions in particular situations). The theory proposes that declarative knowledge can be transformed into proceduralized knowledge through practice (DeKeyser 1998). Applied to language learning, this process involves (1) developing an explicit representation of a linguistic feature; (2) practising the use of the feature using the explicit representation as an aid to performance; and (3) proceduralizing the feature and automatizing its use. Thus there is a progression from conscious, controlled processing to unconscious, automatic use. To give a simple example, learners might first learn a rule for plural -s (declarative knowledge) and construct an 'if-then procedure' i.e. 'if the noun refers to more than one, add -s' (procedural knowledge), and then automatize the use of this procedure (automatic knowledge). At this point, there is no longer any need for the declarative rule which consequently might be forgotten through disuse.

The transformation from declarative to proceduralized/automatic knowledge of a linguistic feature requires practice. DeKeyser (2007) defined 'practice' broadly as 'specific activities in the second language, engaged in systematically, deliberately, with the goal of developing knowledge of and skills in the second language' (p. 1). He argued that 'good practice needs to involve real operating conditions as soon as possible, which means comprehending and expressing real thoughts, and this necessarily involves a variety of structures, some of which will be much further along the declarative-procedural-automatic path than others' (p. 292). DeKeyser also claimed that the development of procedural knowledge was more likely to occur when the cognitive operations involved in the practice activity matched those in a natural communicative context.

Thus, an integral premise of skill-acquisition theory is the importance of [transfer appropriate processing](#). DeKeyser (2007) noted that practice leads to qualitative changes in the learner's knowledge system over time but only 'in the basic cognitive mechanisms

used to execute the same task' (p. 99): in other words, learning would be restricted to the situations and conditions of use that mirrored the operating conditions which figured in the practice provided. Two key points follow from this. First, for a feature to become automatic for use in natural communication learners need to experience practising it under communicative conditions; controlled, mechanical practice will not suffice. Second, acquisition is domain-specific and thus proceeds separately for comprehension and production; learning to process a feature receptively will not enable the learner to use it in production and vice versa.

Skill-learning theory differs from theories based on the distinction between implicit and explicit knowledge, in particular with regard to the nature of the [interface](#) between the two types of knowledge. Skill-learning theory assumes a more or less direct interface between the two types of knowledge (i.e. declarative knowledge can transform into procedural knowledge providing there is sufficient practice of the right kind). In contrast, implicit/explicit theories see the two types of knowledge as disassociated and only indirectly related (i.e. explicit knowledge does not transform into implicit knowledge, but can facilitate the processes involved in implicit learning).

Skill-learning theory may account for the main way in which adult learners learn an L2. However, it is difficult to accept that the acquisition of *all* L2 features—even by adults—begins with declarative knowledge. There would appear to be little room for any implicit learning in skill-learning theory. However, the theory has proved influential in language pedagogy as it supports the idea that language can be taught by systematically presenting and practising discrete linguistic features.

In [Chapter 8](#), we will examine the various constructs and theories borrowed from cognitive psychology.

The social turn in L2 acquisition

SLA, as I have described it so far, was primarily cognitive-interactionist in orientation: that is to say, the underlying view was that learning takes place inside the learner's head as a result of processing input and output through interaction. Block (2003) noted 'until the mid-1990s explicit calls for an interdisciplinary, socially informed SLA were notable by their absence' (p. 3). Although this was not entirely true, Block was correct in pointing to the relative neglect of the social context in SLA.

In fact, the earliest attempt to theorize the role of social factors (apart from the work on variability in learner language) was Schumann's (1978a) [Acculturation Model](#). Schumann proposed that factors governing the [social distance](#) between the L2 learner and the target-language community influenced the likelihood of the learner acculturating (i.e. becoming a member of the target-language community) and thus the speed at which learning takes place. For example, if the L2 learner was a member of a relatively large and self-contained community of learners speaking the same first language, the learner would be likely to experience limited contact with L2 speakers and so learning would be slow. Schumann's view of how social factors affect L2 acquisition was deterministic in nature. In the Acculturation Model, social factors were simply grafted on to the underlying cognitive-interactionist model of learning.

The case for including a fuller social perspective was convincingly made by Firth and Wagner (1997), who proposed what is known as [social-interactionist SLA](#). They argued

that cognitive accounts of L2 acquisition were ‘individualistic and mechanistic’ and that to achieve a better balance it was necessary to consider the contextual dimensions of language use. They were especially critical of the way in which SLA researchers characterized the subject of their enquiry as a ‘learner’ or a ‘non-native speaker’, ignoring the host of other social identities (for example, ‘parent’, ‘worker’, ‘husband’, ‘friend’) which might influence the use and acquisition of an L2. They argued, too, that mainstream SLA had largely focused on classroom settings and on interactions between learners and native speakers whereas many learning contexts were multilingual in nature in which learners were more likely to interact with other learners than with native speakers. They pointed out the importance of people’s local agendas and the social and institutional factors that were instantiated in the interactions they participated in. Thus, in Firth and Wagner’s social-interactionist SLA, learners were not just subject to social factors, as in Schumann’s Acculturation Theory, but could also influence the social world they inhabited.

The importance of [social identity](#) in shaping learners’ opportunities for learning is most fully argued in Norton’s (2000) Social Identity Theory. This is concerned with the relationship between power, identity, and language learning. Norton saw social identity as multiple, contradictory, and dynamic. To obtain the ‘right to speak’ learners need to be able to see themselves as legitimate speakers of the L2, not as defective communicators. They have to be prepared to challenge the subservient social identity that native speakers often thrust upon them and assert the right to communicate. Norton illustrated her theory in research on adult female immigrants to Canada. In some cases, these women were successful in establishing a social identity that afforded them opportunities to speak on equal terms; in other cases they were not successful and withdrew from contact with native speakers.

However, missing from both of these social accounts is any explanation of how social context and identity influences L2 acquisition. Firth and Wagner focused on L2 use as manifested in the social interactions that learners participate in. Norton focused on social identity. In both cases, the emphasis is on the opportunities for learning but not on learning itself. The theories explain how ‘affordances’ for learning are created, but they offer no explanation of how these affordances lead to actual learning. This led Long (1997) to insist that critics of cognitive SLA should offer some evidence to show that social identity and a broader view of social context make a difference to how an L2 is acquired. Revisiting their 1997 paper, Firth and Wagner (2007) acknowledged the need for this and there has been some headway made in achieving it, especially in research in [sociocultural SLA](#).

Sociocultural SLA

Sociocultural accounts of L2 acquisition had been around for some time but made little impact on SLA until the 1990s. A special issue of *The Modern Language Journal* published in 1994 was devoted to sociocultural studies of L2 learners. This served as the impetus for a steady growth of interest in sociocultural theory in SLA, which shows no signs of diminishing today.

Sociocultural SLA draws on the work of the Russian psychologist, Lev Vygotsky (1986), who argued that learning arises when an expert (for example, a teacher) interacts with a novice (i.e. a learner) to enable the novice to learn a new concept. When this happens, the expert and the novice jointly construct a [zone of proximal development \(ZPD\)](#). For

example, a learner may be incapable of independently producing a target-like negative construction (for example, ‘Marcelle did not come’) resorting instead to a developmentally simpler negative form (‘Marcelle no coming’). But the help provided by a skilled interlocutor can enable the learner to produce the target construction:

A Marcelle no coming.

B He didn’t come yesterday?

A Yeah, he didn’t come.

On the face of it, this looks like an example of the negotiation of meaning but sociocultural theory views what is going on in such interactions very differently from the Interaction Hypothesis. Whereas the Interaction Hypothesis sees such exchanges as providing learners with ‘data’—which they then process internally—sociocultural theory sees them as examples of ‘learning’ taking place ‘in flight’. That is, learning is initially accomplished socially *in* (not through) interaction. Later, ‘development’ takes place when the learner internalizes the new form. At this time, [self-regulation](#) has been achieved and the learner is now capable of producing the form without any external assistance.

Central to sociocultural SLA, is the idea of [mediation](#) (Lantolf 2000). In cognitive SLA, to show that learning has occurred it is necessary to show that the learner is able to produce a structure like ‘Marcelle did not come’ independently. In sociocultural theory, however, learning is also evident when it can be shown that the extent of the mediation needed to construct a ZPD reduces from one time to another. In this example:

A Marcelle no coming.

B Yesterday?

A Yeah, he didn’t come.

the learner is now able to self-correct without the other speaker providing the target form. As in the first example, a ZPD is created but in this case it requires less assistance. Sociocultural theory, then, is premised on a very different view of what language learning entails.

Sociocultural theory has informed the work of a number of researchers in recent years. Much of the research, however, is somewhat limited as it has tended to simply describe the various types of mediation that arise in social interactions with learners without demonstrating that either ‘learning’ (i.e. the initial production of a target feature) or ‘development’ (i.e. movement towards self-regulation) has taken place. An exception, however, is the work of Swain. Swain and her co-researchers (for example, Swain and Lapkin 1995) asked learners to participate collaboratively in performing various kinds of tasks. Their interactions were recorded, transcribed, and [language-related episodes](#) identified. These were sequences of interaction where the learners explicitly discussed some language point that they found problematic. Swain then examined whether the collaborative work undertaken when performing the initial task enabled the learners to use those forms that had figured in the language-related episodes independently in a later, new task. Later, Swain (2006) referred to the talk-about-language in these language-related episodes as [languaging](#). Her research suggests that this assists both learning (i.e. initial use) and development (i.e. [internalization](#))—at least in the case of adult learners who have already acquired some proficiency in the L2.

Social aspects of L2 acquisition, including sociocultural theory, are discussed in [Chapter 9](#).

Emergentism

[Emergentism](#) constitutes an appropriate way of rounding up this brief history of SLA because it is an all-embracing theory, incorporating both cognitive and social dimensions of learning. According to N. Ellis (1998), there is no need to posit a [language acquisition device](#) to explain how language acquisition (first or second) takes place as claimed by Chomsky. Like Skill-Learning Theory, emergentism assumes that learning a language is like learning any other skill and that all that is needed to explain it is a simple learning mechanism that can handle the information available from a massively complex environment.

Emergentism informs a number of theories of L2 acquisition. One of these is [Complexity Theory](#):

Complexity theory seeks to explain complex, dynamic, open, adaptive, self-organizing, non-linear systems ... It sees complex behavior as arising from interactions among many components – a bottom-up process based on the contributions of each, which are subject to change over time.

(Larsen-Freeman 2011: 52).

By ‘complex’, Larsen-Freeman refers to the fact that an L2 system is influenced by a range of different factors—both social and cognitive in nature—which affect learning in different ways and at different times. A complex system is ‘dynamic’ and ‘open’ in the sense that it is constantly changing. Complexity Theory rejects the notion of a ‘final state’ in any language system (including the native speaker’s) and, in accordance with connectionist views of language, claims that small changes are forever ongoing. A system is always in movement and never reaches complete equilibrium although there may be periods of relative stability. From the perspective of Complexity Theory, then, there is no such thing as fossilization. A complex system is ‘adaptive’ because it is responsive to the linguistic environment; grammar is ‘a by-product of communication’. By ‘self-organizing’, Larsen-Freeman was referring to the fact that change in one part of the system can trigger changes in other parts. Finally, a language system does not develop in linear ways; different parts of the system develop at different rates. However, while it is not possible to predict the precise pattern of development of a complex system, stable patterns do emerge from time to time. There are [attractor states](#)—regions of the system that achieve prominence at one time or another. The transitional stages evident in sequences of acquisition that we considered earlier can be viewed as attractor states emerging in the process of acquisition. The theory also emphasizes the active role played by the learner. As Larsen-Freeman put it ‘intentionality and agency are important’ (p. 58). Complexity Theory, then, incorporates many of the proposals of both cognitive SLA and social SLA. Learners have choices. Interaction is central, but learners can shape the interactions they participate in and what they consciously choose to learn. Complexity Theory is considered in [Chapter 8](#).

Summary

In this historical survey of SLA, we can see a number of ways in which the field has developed. Much of the early research was descriptive in nature, focusing on identifying the key features of learner language and how these change over time. This led to a re-evaluation of the role of the L1 in L2 acquisition and also to an interest in the linguistic environment (i.e. input and interaction) and how this influenced learning. Increasingly, descriptive research gave way to theoretically driven research based on a cognitive-interactionist view of L2 acquisition. This served as a basis for investigating specific hypotheses relating to such constructs as the negotiation of meaning, noticing, implicit/explicit learning, the dual-mode system, and skill-learning. At this point, acquisition was viewed as something that took place inside the learner's head and social factors were only of interest in terms of the 'data' they made available for 'input crunching'. In the 1990s, however, a reaction set in and the case for a constitutive role for social factors in L2 acquisition was advanced. Learners were not just to be seen as defective communicators and they had agency. According to sociocultural SLA, learning takes place externally in the social interactions that learners participate in. Finally theories began to appear that sought to integrate cognitive and social perspectives on L2 acquisition.

SLA had now reached a point where there was no clear consensus about how L2 acquisition took place. There are competing theories giving rise to a large body of empirical research that have often produced conflicting results. The complexity of SLA as a field of enquiry was mirrored in the aptly named Complexity Theory—an all-encompassing theory that insisted there were no simple answers to the key question 'How do learners acquire a second language?' Readers of this book, therefore, must be prepared to grapple with this complexity. They should look for 'insights' rather than definite 'answers' and then come to their own informed conclusions about how a second language is acquired.

This historical introduction to SLA has neglected two important areas of enquiry: the role of age in L2 acquisition and the role of individual learner factors such as language aptitude and motivation. We will remedy these lacunae in [Chapter 2](#) and [Chapter 3](#). This chapter has not considered the role of instruction either, an area which has received considerable attention in SLA—not only because investigating how instruction affects learning serves as a means of testing the claims of different theories—but also because SLA has, from the start, been concerned with how it can contribute to effective language pedagogy. The significance of the role of instruction is considered in [Chapter 10](#) and [Chapter 11](#).

Notes

- 1 This definition of L2 acquisition excludes children who are acquiring two languages as their mother tongues. This situation is referred to as ‘simultaneous bilingual acquisition’.
- 2 Some researchers prefer the term ‘additional language acquisition’ to ‘second language acquisition’ because it avoids the potentially negative connotation of ‘second’. For some learners—such as those who leave their own country and migrate to a country where the L2 is widely used—the language that they learned ‘second’ can become their ‘first’—i.e. primary—language.
- 3 Ortega (2012) argued that the ‘human language faculty is potentially by default bi/multilingual’ and that ‘the possibility of bi/multilingualism remains true all along the life span, from birth across all ages’ (p. 17).