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# Research Timeline

## The development of theories of second language acquisition

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Second language acquisition (SLA) is a relatively new field of enquiry. Before the late 1960s, educators did write about L2 learning, but very much as an adjunct of language teaching pedagogy, underpinned by behaviourism, the then-dominant learning theory in psychology. In this view, the task facing learners of foreign languages was to rote-learn and practise the grammatical patterns and vocabulary of the language to be learnt, in order to form new ‘habits’, that is to create new stimulus–response pairings which would become stronger with reinforcement. In order for the ‘old habits’ of the L1 not to interfere with this process by being ‘copied’, or transferred, into the L2, researchers embarked on thorough descriptions of pairs of languages to be learnt, in order to identify areas that are different and would thus be difficult.

The focus of enquiry at the time was therefore very much the description of L1–L2 pairings, and little attention was being paid to what foreign language learners actually did with the input they received, or to their actual productions in the L2. This changed in the second half of the 1960s, primarily as a result of the Chomskyan ‘revolution’ in the field of L1 acquisition. L1 children were shown to be highly creative in their acquisition of language, rather than mere imitators of the language around them. In the context of L2 acquisition, researchers started focusing on what learners actually produced for the first time, especially their errors, drawing the conclusion that much of their productions cannot be traced back to their L1, nor the L2 they are exposed to. Additionally, research found that what is different in two languages is not necessarily difficult for learners, and what is similar not necessarily easy.

If I lingered a while on these very early stages, it is because this very simple fact – namely that in order to understand SLA we need to investigate what learners actually do and produce, as well as the context in which they learn, rather than merely focus on the description of source and target languages – led to a major shift in SLA theorising. Redefined in this way, the field needed to turn to a wide range of neighbouring disciplines in order to do justice to its multifaceted nature. Descriptive linguistics and behaviourism were no longer the only disciplines relevant to this endeavour, and researchers started drawing on theoretical frameworks having their origins in psychology (e.g. processing, individual differences), theoretical linguistics (syntax, lexis, semantics, discourse, pragmatics, phonology), education, sociolinguistics, L1 acquisition, sociocultural theory, neurolinguistics and others. This led to a myriad of theoretical approaches, sometimes complementary, sometimes incompatible.

The following timeline traces this journey. Its emphasis is therefore historical, prioritising works which were influential at the start of a new line of enquiry, and focusing on theories which have had a lasting impact on SLA research and given rise to many studies. Very

recent theorising is therefore not given the same prominence as earlier research, as it is more difficult to say how influential it will eventually be in shaping the field. The focus is on the processes involved in acquisition, rather than on the teaching of foreign languages, as these two research fields have relatively little overlap. The treatment of the various theoretical approaches is inevitably oversimplified and highly selective, but it is hoped that the reader will get a good overview of the development of this highly complex and multifaceted field of research. The works cited are mostly influential theoretical pieces, but also sometimes empirical studies which started a major new line of SLA theorising. Readers interested in more detailed treatments of the subject may wish to consult, for example, Mitchell & Myles (2004) or R. Ellis (2008).

## References

The list includes works referred to in the 'Annotations' column but which are not included in the timeline proper.

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YEAR	REFERENCE	ANNOTATIONS
1945	Fries, C. (1945). <i>Teaching and learning English as a Foreign Language</i> . Ann Arbor, MI: University of Michigan Press.	<b>Fries</b> develops a pedagogy of language based on behaviourism, which claims that repetition and practice lead to accurate and fluent foreign language habits, and that teaching must be based on the careful comparison of the L1 and L2 of the learner, in order to teach what is different in the L2 – and therefore difficult for that learner.
1957	Skinner, B. F. (1957). <i>Verbal behavior</i> . New York: Appleton-Century-Croft.	In a detailed account of behaviourism applied specifically to language, <b>Skinner</b> argues that language learning, like any other learning, takes place through stimulus–response–reinforcement leading to the formation of habits. This work does not deal primarily with L2 acquisition, but is included here because of the major influence it had on shaping the field of SLA in its early days.
1957	Lado, R. (1957). <i>Linguistics across cultures: Applied Linguistics for language teachers</i> . Ann Arbor, MI: University of Michigan Press.	In keeping with behaviourist thinking, <b>Lado</b> compares pairs of languages in order to identify differences, as these will be the areas which will be difficult for the learner and which the teacher must concentrate on, in order to avoid transfer from the first language. This is termed ‘Contrastive Analysis’.
1959	Chomsky, N. (1959). Review of B. F. Skinner <i>Verbal behavior</i> . <i>Language</i> 35, 26–58.	<b>Chomsky</b> writes a fierce critique of SKINNER (1957), arguing that children have an innate faculty guiding them in their acquisition of language, as they do not merely imitate the language around them, but routinely generate novel sentences and rules. This innate language faculty will subsequently become known as Universal Grammar (UG). Chomsky does not deal with L2 acquisition, but his ideas have had a major impact on the field and its subsequent abandonment of behaviourism as an explanation of the SLA process.
1964	Lado, R. (1964). <i>Language teaching: A scientific approach</i> . New York: McGraw Hill.	Following from his previous work (LADO 1957), <b>Lado</b> draws on mainstream thinking in linguistics (structuralism) and in psychology (behaviourism), in order to develop an approach to teaching based on the then-current scientific understanding of learning. The focus is on audiolingual methods.
1966	Newmark, L. (1966). How not to interfere in language learning. <i>International Journal of American Linguistics</i> 32, 77–87.	<b>Newmark</b> (in contrast to LADO (1964) and the then-dominant behaviourist thinking) argues that teachers should let the learning process in the classroom take its course, rather than try to directly shape it as in behaviourist methods such as audiolingualism. This represents a major departure in conceptualising the learning process.

- 1967 Corder, S. P. (1967). The significance of learners' errors. *International Review of Applied Linguistics* 5, 161–169. **Corder** is the first to draw attention to the significance of studying learners' errors, as it becomes evident that a great number do not originate in the L1 of learners, and that learners seem to have an in-built syllabus of their own, as suggested by CHOMSKY (1959) in the context of L1 acquisition. This major shift from comparing L1 and L2 to studying learner language itself mirrors significant developments in L1 acquisition (e.g. Klima & Bellugi 1966, who found developmental stages in the acquisition of negation in a study of three children).
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- 1967 Lenneberg, E. (1967). *Biological foundations of language*. New York: Wiley. In the wake of the Chomskyan 'revolution' (CHOMSKY 1959), **Lenneberg** suggests that there must be an innate language faculty which is biologically triggered, in order to explain why L1 children seem to 'grow' language spontaneously, as long as language is around them, in the same way as they will learn to walk or grow teeth, without the need for any intervention or teaching.
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- 1972 Selinker, L. (1972). Interlanguage. *International Review of Applied Linguistics* 10, 209–231. Following on the work of CORDER (1967), **Selinker** coins the term INTERLANGUAGE to refer to the L2 learner's developing system (both the L2 system of a learner at a given point in time and the series of interlocking systems developing over time). This term puts the emphasis firmly on the learner system in its own right and captures the imagination of L2 researchers, keen to move away from contrastive analysis (see LADO 1957), for both theoretical and empirical reasons.
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- 1973 Dulay, H. & M. Burt (1973). Should we teach children syntax? *Language Learning* 23, 245–258. **Dulay & Burt** answer CORDER'S (1967) call for investigating learners' errors, carrying out the first major study. They argue that only 3% of errors L2 children make can be traced back to their L1, and that most errors are developmental rather than the result of 'habit formation' (see SKINNER 1957), and they tell teachers that if children are provided with rich input, syntax will take care of itself. They investigate – in the context of L2 acquisition – Roger Brown's (1973) findings that L1 children go through a well-defined order of acquisition of grammatical morphemes in English, and find similar patterns in L2 learners (the so-called 'morpheme studies'; see DULAY ET AL. 1982).
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- 1974 Bailey, N., C. Madden & S. Krashen (1974). Is there a 'natural sequence' in adult second language learning? *Language Learning* 24, 235–243. **Bailey et al.** replicate DULAY & BURT'S (1973) morpheme studies with adult L2 learners and find very similar results. They use the same method, the Bilingual Syntax Measure, which attracts some criticisms at the time, and subsequently. The morpheme studies are highly significant, as they show for the first time that L1 and L2 acquisition might not be as different from one another as commonly believed, and are both driven by learner internal creative mechanisms rather than behaviourist principles.
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YEAR	REFERENCE	ANNOTATIONS
1974	Richards, J. (ed.) (1974). <i>Error analysis: Perspectives on second language learning</i> . London: Longman.	<b>Richards</b> takes the findings on learners' errors (CORDER 1967; DULAY & BURT 1973; BAILEY ET AL. 1974) beyond the research laboratory into the classroom, in this first book length analysis of L2 learners' errors, which becomes a highly influential textbook for SLA researchers and teachers alike.
1978	Schumann, J. (1978). <i>The pidginisation process: A model for second language acquisition</i> . Rowley, MA: Newbury House.	With the focus now firmly on the study of L2 production, <b>Schumann</b> notices that early interlanguages resemble pidgins before becoming more complex in ways similar to the creolisation process. He also claims that L2 learners who feel closer to the target language community are likely to make the most progress beyond the pidgin stage. He terms this process 'acculturation'.
1978	Bialystok, E. (1978). A theoretical model of second language learning. <i>Language Learning</i> 28, 69–84.	<b>Bialystok</b> is the first to draw a distinction between implicit (subconscious) and explicit (conscious) knowledge in SLA, arguing that the two interact. The implicit/explicit dichotomy has led to much subsequent theorising, as, for example, in KRASHEN (1981), who claims that learning (conscious process) does not lead to acquisition (subconscious process).
1979	Givón, T. (1979). From discourse to syntax: Grammar as a processing strategy. In T. Givón (ed.), <i>Syntax and semantics</i> . New York: Academic Press, 81–112.	<b>Givón</b> argues that learner speech in early stages resembles the 'pragmatic mode' typical of informal speech, relying heavily on context. He contrasts this with the 'syntactic mode' of more formal styles which rely more on grammatical coding. Authors such as Huebner (1983), Dittmar (1984), or Sato (1990) apply and develop this model in a range of detailed small-scale L2 studies, in what will later be referred to as the functionalist tradition (see KLEIN & PERDUE 1992).
1980	Long, M. (1980). Input, interaction and second language acquisition. Ph.D. dissertation, University of California, Los Angeles.	<b>Long's</b> Ph.D. thesis provides the foundation for much later work (including his own, e.g. Long 1996) investigating the role of input and interaction in L2 acquisition. He shows that learners are active partners in L2 interactions rather than mere recipients of input, negotiating the input in order to maximise its comprehensibility, given their current developmental level. This work represents a new departure, from the initial focus on contrastive analysis (LADO 1957), then on learner productions and errors (CORDER 1967) to a focus on the input learners receive and how they engage with it.

- 1981 Krashen, S. (1981). *Second language acquisition and second language learning*. Oxford: Pergamon.
- At a theoretical level, **Krashen** develops and refines his influential Monitor Model, which claims that ‘learning’ and ‘acquisition’ are different processes. Acquisition is the subconscious process whereby the learner constructs the grammar of the L2 and conscious learning (of, for example, grammar rules) cannot impact on this process. It can only be used to ‘monitor’ (and, if necessary, modify) output once an utterance has been produced by the acquired system.
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- 1981 Meisel, J., H. Clahsen & M. Pienemann (1981). On determining developmental stages in natural second language acquisition. *Studies in Second Language Acquisition* 18, 109–135.
- On the basis of a large-scale study (the ZISA [Zweitspracherwerb Italienischer, Portugiesischer und Spanischer Arbeiter] project) of Italian, Spanish and Portuguese immigrant workers in Germany, **Meisel et al.** find a clear developmental route in the acquisition of German word order, unrelated to the L1 of learners. Given the criticisms the morpheme studies (DULAY & BURT 1973) had received, and the fact that all research to-date had been on English, this ambitious study on a much larger scale and involving hitherto unresearched languages confirmed that developmental orders were not just an artefact of the earlier studies.
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- 1982 Dulay, H., M. Burt & S. Krashen (1982). *Language Two*. New York: Oxford University Press.
- Dulay et al.** extend the morpheme studies work (DULAY & BURT 1973) to larger groups of children and a range of different L1s. Their conclusions are that children follow a similar order in their acquisition of 13 English grammatical morphemes, irrespective of L1 or host environment. They also conclude that the L1 plays a minor role in the L2 acquisition process, and that most errors produced are developmental. The accumulation of this now-large body of knowledge about developmental patterns and errors which cannot be traced to either L1 nor L2 (see also RICHARDS 1974 and MEISEL ET AL. 1981) is the first stepping stone for SLA theorising in the generative tradition, which is going to dominate in the following decade or so.
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- 1983 Flynn, S. (1983). A study of the effects of principal branching direction in second language acquisition: The generalization of a parameter of Universal Grammar from first to second language acquisition. Ph.D. dissertation, Cornell University.
- One of the very first to apply a generative model to SLA is **Flynn**. Her doctoral dissertation investigates the implications of UG theory for L2 acquisition, by testing whether L2 learners can reset their L1 parameters to the L2 values (UG claims that all human languages consist of universal principles which are common to all languages, and a limited set of parameters which vary from one language to another). She concludes that, in the case of the Head parameter (which dictates the ordering of constituents within a language) at least, resetting is possible and occurs very early on. The significance of this new line of research is two-fold: It provides a principled framework for investigating similarities and differences in L1 and L2 acquisition, and it leads to a wealth of empirical studies (very few empirical studies investigating learner productions took place before the early 1980s).

YEAR	REFERENCE	ANNOTATIONS
1984	Hyltenstam, K. (1984). The use of typological markedness conditions as predictors in second language acquisition: The case of pronominal copies in relative clauses. In R. Andersen (ed.), <i>Second language: A crosslinguistic perspective</i> . Rowley, MA: Newbury House, 39–58.	Other theoretical frameworks are also resorted to in the attempt to account for developmental patterns. For example, <b>Hyltenstam</b> relates developmental patterns in L2 acquisition to universal typological tendencies of the world's languages. He shows that L2 learners acquire subject relative clauses before object relative clauses, which in turn are acquired before indirect object, oblique object, genitive, and finally object of a comparison relative clause, mirroring how common each of these are in the world's languages. Resorting to typological universals for explaining L2 acquisition becomes a fairly productive line of enquiry, still active today (see Giacalone Ramat 2009).
1984	Pienemann, M. (1984). Psychological constraints on the teachability of languages. <i>Studies in Second Language Acquisition</i> 6, 186–214.	<b>Pienemann</b> is the first to link developmental stages to learnability and teachability issues, suggesting that it is only when a given stage has been acquired that learners will be able to learn the following one. There had been very little attempt until now to link research on L2 development to teaching concerns.
1985	Krashen, S. (1985). <i>The input hypothesis: Issues and implications</i> . Harlow: Longman.	<b>Krashen</b> develops his Input Hypothesis, arguing that all learners need in order to acquire an L2 is to be exposed to comprehensible input just beyond their current developmental level ( $i + 1$ ). Krashen is subsequently criticised because his hypothesis is untestable and circular (it is not clear how $i + 1$ can be defined scientifically, other than by saying that a structure must be $i + 1$ because it has been acquired, and that it has been acquired because it is $i + 1$ ). See LONG 1980; LONG 1996 and SWAIN 1985 for further work on the role of the input/output.
1985	Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (eds.), <i>Input in second language acquisition</i> . Rowley, MA: Newbury House, 235–253.	<b>Swain</b> argues that learners not only need comprehensible language input, but that they also need to produce output in order to develop their communicative abilities in the L2 to a high standard. This follows research on immersion students in Canada (who are taught their academic subjects through the medium of L2 French), who become close to native-like in comprehension, but whose productive abilities lag behind and remain short of native-like competence. She further develops this work in Swain 1995.

- 1987 McLaughlin, B. (1987). *Theories of second language learning*. London: Arnold. After the fall of behaviourism in the 1970s, researchers shied away from models of learning coming from psychology. **McLaughlin** bucks this trend and uses Anderson's information processing model (called ACT; Anderson 1983, 1985) to argue that L2 learning involves processes controlled by the short-term memory initially, which through repeated activation become automatised and move to the long-term memory, from which they can be retrieved quickly and effortlessly, and without conscious attention. As new linguistic structures are incorporated within the system, restructuring takes place.
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- 1989 Bley-Vroman, R. (1989). What is the logical problem of foreign language learning? In S. Gass & J. Schachter (eds.), *Linguistic perspectives on second language acquisition*. Cambridge: Cambridge University Press, 41–68. Giving further legitimacy to resorting to general models of learning from psychology to explain SLA, **Bley-Vroman** argues that there are too many important differences between L1 and L2 acquisition to claim that UG underpins both. His 'fundamental difference hypothesis' claims that L1 acquisition can be explained by UG, but that L2 acquisition is the result of general cognitive mechanisms. This line of enquiry will become very influential and lead to the application of constructionist or emergentist models of language learning to the L2 context (see for example N. C. ELLIS 2003; HAWKINS 2008).
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- 1989 White, L. (1989). *Universal Grammar and second language acquisition*. Amsterdam: John Benjamins **White's** detailed analysis of the various options for the role of UG in L2 acquisition provides the theoretical foundations for much of the later work within this highly prolific framework (SCHWARTZ & SPROUSE 1996; VAINIKKA & YOUNG-SCHOLTEN 1996; LARDIERE 1998; HERSCHENSOHN 2000; HAWKINS 2001, 2008)
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- 1989 Johnson, J. & E. Newport (1989). Critical period effects in second language learning: The influence of maturational state on the acquisition of ESL. *Cognitive Psychology* 21, 60–99. An important question underlying much of the work within the generative framework is whether UG underpins both L1 and L2 acquisition, or whether there is a 'critical period' during which it needs to be activated (BLEY VROMAN 1989; WHITE 1989). The critical period hypothesis (CPH) claims that there is a window of opportunity – usually thought to last up to puberty – for acquiring an L1 naturally and effortlessly, after which it becomes impossible (LENNEBERG 1967). **Johnson & Newport** compare L2 ultimate attainment on a number of English grammatical structures by learners who vary in terms of age of arrival in the United States. They conclude that there is a clear and strong advantage for earlier arrivals over the later arrivals and argue for the CPH to be extended to L2 learners.
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YEAR	REFERENCE	ANNOTATIONS
1989	Skehan, P. (1989). <i>Individual differences in foreign language learning</i> . London: Arnold.	Much emphasis to-date has been on common patterns across L2 learners, and not much attention has been paid to individual variation. <b>Skehan</b> investigates the role of individual differences in L2 learning. Constructs such as language aptitude, motivation, personality and anxiety among others become widely researched thereafter, e.g. by researchers such as Robinson (2002) and Dörnyei (2005).
1990	Schmidt, R. (1990). The role of consciousness in second language learning. <i>Applied Linguistics</i> 11, 129–158.	Also turning to psychological constructs to explain the L2 acquisition process, <b>Schmidt</b> argues that (comprehensible) input (KRASHEN 1985) is not sufficient; it needs to become intake, and this is done through ‘noticing’, i.e. registering a form in the input.
1991	Cook, V.J. (1991). The poverty-of-the-stimulus argument and multi-competence. <i>Second Language Research</i> 7.2, 103–117.	<b>Cook</b> argues that the bilingual mind is not merely two monolingual minds added together. Not only does the L1 have an impact on the L2, but the L2 also impacts on the first, and this has important implications for a view of the mental grammar as one (and only one) instantiation of UG, with parameters having been set one way (WHITE 1989; HAWKINS 2001).
1992	Klein, W. & C. Perdue (1992). <i>Utterance structure: Developing grammars again</i> . Amsterdam: John Benjamins.	The functionalist tradition (GIVÓN 1979) receives a major impetus through this ambitious large-scale L2 project funded by the European Science Foundation between 1982 and 1986 and involving research teams in five European countries and 10 language pairs. <b>Klein &amp; Perdue</b> find that all learners, irrespective of L1 and L2, go through three developmental stages: NOMINAL UTTERANCE ORGANISATION (mainly unconnected nouns, adverbs and particles); INFINITE UTTERANCE ORGANISATION (verbs appear and start structuring utterances, but they remain untensed); and FINITE UTTERANCE ORGANISATION (tensed verbs appear). The unprecedented size and scope of this project, involving many unrelated languages, enables lasting generalisations to be made, and provides a very rich dataset widely used by other researchers (e.g. Schwartz & Sprouse 1994).
1992	Sokolik, M. & M. Smith (1992). Assignment of gender to French nouns in primary and secondary language: A connectionist model. <i>Second Language Research</i> 8, 39–58.	For the first time, researchers resort to computer-modelling to account for L2 development. <b>Sokolik &amp; Smith</b> , following the work of Rumelhart & McClelland (1986), who first used computer simulation on the basis of associative learning to account for the acquisition of regular vs. irregular verbs in English L1 acquisition, developed a connectionist network model which was able to learn the gender of French nouns solely on the basis of associative patterns (N. C. ELLIS 2003; HAWKINS 2008).

- 1994 Lantolf, J. P. (ed.) (1994). *Sociocultural theory and second language learning*: Special Issue of *The Modern Language Journal* 78.4.
- In this special issue of the *MJL*, as well as in an edited volume the same year (Lantolf & Appel 1994) and in many publications since, **Lantolf** applied the Vygotskian sociocultural framework to L2 acquisition, arguing that language learning is quintessentially a mediated social process rather than individual, and that this should be the focus of our attention. Concepts such as REGULATION, SCAFFOLDING, ZONE OF PROXIMAL DEVELOPMENT, MICROGENESIS, PRIVATE AND INNER SPEECH, AND ACTIVITY THEORY are at the core of sociocultural analyses of L2 learning. This is the first real challenge to cognitivist and mentalist views of language learning.
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- 1994 Bayley, R. (1994). Interlanguage variation and the quantitative paradigm: Past tense marking in Chinese–English. In E. Tarone, S. Gass & A. Cohen (eds.), *Research methodology in second language acquisition*. Hillsdale, NJ: Lawrence Erlbaum, 157–181.
- Theorising from the field of sociolinguistics makes an entry into SLA. In the Labov sociolinguistic tradition, **Bayley** applies a quantitative model based on statistical probabilities (VARBRUL) to the analysis of L2 variation. This methodology is then used by a range of authors in a range of L2s, showing how L2 learners appropriate (or not, as the case may be) target sociolinguistic norms.
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- 1996 Schwartz, B. & R. Sprouse (1996). L2 cognitive states and the Full Transfer/Full Access model. *Second Language Research* 12.1, 40–72.
- Vainikka, A. & M. Young-Scholten (1996). Gradual development of L2 phrase structure. *Second Language Research* 12.1, 7–39.
- Within UG approaches to SLA, discussions appear about the ‘Initial State’, i.e. the mental grammar L2 learners have at the outset of the acquisition process. Questions centre around whether L2 learners start with their L1 parameters initially, and whether they are able to reset them to the L2 values (see FLYNN 1983; WHITE 1989). **Schwartz & Sprouse** argue for ‘Full Transfer’/‘Full Access’, i.e. L2 learners initially transfer all their L1 parameter settings, thereafter resetting them on the basis of positive evidence in the input. **Vainikka & Young-Scholten** argue that learners start with ‘minimal trees’, i.e. lexical projections only (content words), before being able to project functional categories such as complementizer phrases, tense, etc., with L2 parameters coming on-line gradually.
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- 1996 VanPatten, B. (1996). *Input processing and grammar instruction: Theory and research*. Norwood, NJ: Ablex.
- Apart from PIENEMANN’S (1984) teachability hypothesis, researchers had not been focused on any possible links between L2 acquisition and teaching. **VanPatten’s** input processing and processing instruction models start to fill this gap, arguing that learners only process grammatical information if they need to in order to retrieve meaning. For example, in a

YEAR	REFERENCE	ANNOTATIONS
		sentence such as <i>Yesterday he played in the garden</i> , learners do not need to process the <i>-ed</i> inflection as they have already retrieved from the word <i>yesterday</i> the fact that the action is in the past. Instruction materials therefore have to force learners to process grammatical information in order to extract meaning, by avoiding redundancy.
1997	Lyster, R. & E. Ranta (1997). Corrective feedback and learner uptake: Negotiation of form in communicative classrooms. <i>Studies in Second Language Acquisition</i> 19.1, 37–61.	Whereas errors were the focus of much attention in the early days of SLA theorising (CORDER 1967; RICHARDS 1974), their study became rather neglected thereafter. In a much-cited study, <b>Lyster &amp; Ranta</b> are among the first to investigate systematically the type of error feedback provided by teachers in L2 classrooms and conclude that recasts (where the teacher repeats what the learner has produced, but without the mistake and without any explanation) are the most common but also the least effective in so far as they seldom lead to self-correction by the students.
1998	Pienemann, M. (1998). <i>Language processing and second language acquisition: Processability theory</i> . Amsterdam: John Benjamins	<b>Pienemann</b> develops his model of L2 development based on processing (PIENEMANN 1984), stating that learners are initially only able to process linguistic information in local domains before more distant ones, e.g. at word level before lexical phrase level, before clause level, before sentence level, and finally discourse level. His model is applied to the acquisition of a range of L2s (Arabic, Chinese, English, Italian, Japanese and Swedish; see Pienemann 2005).
1998	Lardiere, D. (1998). Dissociating syntax from morphology in a divergent L2 end-state grammar. <i>Second Language Research</i> 14.4, 359–375.	Within the UG tradition and on the basis of the study of an end-state learner whose grammar has fossilised, <b>Lardiere</b> argues that the ability to acquire syntax is unimpaired in L2 learners and that they still have access to UG parameters for the L2. What is impaired is the ability to map morphological paradigms onto the relevant syntactic categories. She shows that after 18 years living and working in the US, this learner has no problem with syntax but persistently fails to provide inflections on verbs. This much-cited study is the only longitudinal investigation over a very long time-span, with the first recordings after 10 years of residence and the second after 18 years.

- 1998 Archibald, J. (1998). *Second language phonology*. Amsterdam: John Benjamins. **Archibald** brings the development of L2 phonology, neglected to-date, to the attention of SLA researchers. The late 1990s/early 2000s see a diversification of the object of enquiry in SLA, which had primarily been morphosyntax to this date, with studies of L2 vocabulary, phonology, discourse and pragmatics becoming commonplace.
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- 1999 Birdsong, D. (ed.) (1999). *Second language acquisition and the Critical Period Hypothesis*. Mahwah, NJ: Lawrence Erlbaum. **Birdsong** reviews the evidence relating to a Critical Period in the context of L2 acquisition (LENNEBERG 1967; JOHNSON & NEWPORT 1989). The results are somewhat inconclusive, with many studies supporting the CPH but others refuting it. It is clear, however, that there are maturational effects in SLA although they seem to be gradual rather than resulting from a discrete cut-off point. The theoretical debate between generativists and emergentists remains very much open and the source of many studies (see e.g. HAWKINS (2008)).
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- 2000 Carroll, S. (2000). *Input and evidence: The raw materials of second language acquisition*. Amsterdam: John Benjamins. **Carroll** proposes an ambitious model outlining the role of processing mechanisms and interaction in SLA. Her 'Autonomous Induction' theory is the first complex model linking language representation, processing and learning.
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- 2000 Herschensohn, J. (2000). *The second time around: Minimalism and second language acquisition*. Amsterdam: John Benjamins. Developments in generative linguistics, in the shape of Chomsky's (1995) 'minimalist program', have important implications for SLA theorising. In a far-reaching new model, **Herschensohn** outlines these implications and argues that L2 learners use a coalition of resources (UG, L1 transfer, primary linguistic data, input and intake, instructional bootstrapping) in order to construct the L2 vocabulary and grammar.
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- 2001 Ohta, A. (2001). *Second language acquisition processes in the classroom: Learning Japanese*. Mahwah, NJ: Lawrence Erlbaum. The sociocultural framework sees its first very detailed longitudinal study. **Ohta's** investigation of adult Japanese learners of English enables her to gain insights into the role of private speech in L2 learning processes, which, she argues, plays a crucial role in L2 development. She also documents the many strategies learners use to scaffold one another in their learning (cf. LANTOLF 1994).
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- 2001 Hawkins, R. (2001). *Second language syntax: A generative introduction*. Oxford: Blackwell. Within the generative tradition, **Hawkins'** Modulated Structure Building model argues that learners start with lexical projections only, gradually building functional categories, and that they cannot acquire through UG functional features (e.g. grammatical gender) not instantiated in their L1. See WHITE 1989; SCHWARTZ & SPROUSE 1996; VAINIKKA & YOUNG-SCHOLTEN 1996; LARDIERE 1998 for alternative generative models.
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YEAR	REFERENCE	ANNOTATIONS
2002	Kasper, G. & K. Rose (2002). <i>Pragmatic development in a second language</i> . Oxford: Blackwell.	<b>Kasper &amp; Rose</b> carry out a survey of studies of L2 pragmatic development since the early 1980s, putting this hitherto-neglected aspect of development firmly on the SLA map; the focus of the overwhelming majority of SLA studies to-date had been morphosyntax.
2003	Ellis, N. C. (2003). Constructions, chunking, and connectionism: The emergence of second language structure. In C. Doughty & M. Long (eds.), <i>The handbook of second language acquisition</i> . Malden, MA: Blackwell, 63–103.	<b>N. C. Ellis</b> has long been one of the strongest advocates of connectionism, arguing that the acquisition of the L2 is as a result of the analysis of patterns in the language input, through associative learning processes. In this view, there are no ‘rules’ underpinning the grammars of languages, only probabilistic patterns (see also SOKOLIK & SMITH 1992; HAWKINS 2008).
2004	Paradis, M. (2004). <i>A neurolinguistic theory of bilingualism</i> . Amsterdam: John Benjamins.	New and increasingly sophisticated technologies (e.g. ERPs [Event Related Potential], fMRI [functional Magnetic Resonance Imaging]) are enabling researchers to investigate the neurobiological foundations of language in the brain, in a very fast-growing field. <b>Paradis</b> reviews neuroimaging studies of the multilingual brain, proposing a linguistic theory of bilingualism integrating a neurofunctional model and a set of hypotheses about language processing.
2004	Truscott, J. & M. Sharwood Smith (2004). Acquisition by Processing: A modular perspective on language development. <i>Bilingualism: Language and Cognition</i> 7.1, 1–20.	<b>Truscott &amp; Sharwood Smith</b> outline their model of language development, MOGUL [Modular On-line Growth and Use of Language]. It is a processing model based on a modular view of language, in which competence is embodied in the processing mechanisms. They argue that the development of language (first or second) occurs as a natural product of processing activity, without any acquisition mechanisms as such.
2008	Hawkins, R. (ed.) (2008). <i>Current emergentist and nativist perspectives on second language acquisition</i> : Special Issue of <i>Lingua</i> 118.	In this special issue of <i>Lingua</i> , <b>Hawkins</b> brings together leading researchers to debate the strengths and weaknesses of nativist accounts of SLA (believing UG constrains SLA; see WHITE 1989; HAWKINS 2001; LARDIERE 1998) versus emergentist explanations (where SLA is an associative process; see N. C. ELLIS 2003).