3

Theoretical approaches

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3.1 Introduction

Becoming acquainted with second language acquisition theorizing can be rather confusing for the novice, given the plethora of different and seemingly conflicting claims. This state of affairs is due to a number of reasons. First, because second language acquisition is a complex and multifaceted phenomenon, the investigation of a given aspect requires specific theoretical and methodological tools; for example, the study of the linguistic system underlying a learner's production will require the support of a linguistic theory, whereas the investigation of the neurological basis underpinning the second language will rely on neurolinguistic theorizing, and there might not be much overlap between the sets of questions investigated and the claims made. Second, different theoretical approaches adopt widely differing views of the nature of language, of the language learning process and of the language learner and his/her role in the acquisition process. Is language primarily social? Individual? Cognitive? Linguistic? Is the learning process primarily social? Individual? Cognitive? Linguistic? What is the role of the learner in this process? For example, does s/he need to amass metalinguistic knowledge or is it unnecessary? Do all learners need the same type of input and interaction or do needs vary from learner to learner according to their individual learning styles and personal characteristics?

This chapter aims to present the main theoretical families that currently exist in SLA research, thus setting the scene for the chapters that follow. By *families* is meant groups of theories which focus on the investigation of broad subdomains of SLA research. For example, one theoretical family explores the development of the linguistic system in second language learners, resorting to a range of different theories in so doing. Another family focuses on the role of social factors in SLA, again drawing on different theories to aid this exploration. And yet another group of theories concentrates on the psycholinguistic dimensions of SLA, such as the development of processing skills or the role of individual differences.

It might seem artificial to separate formal (linguistic), cognitive and social aspects of language, as of course the learning and use of language routinely involve all three at the same time. Some current theoretical approaches do argue in principle against separating language and its learning into these different aspects, on the grounds that language is primarily social and cannot therefore be removed for analysis from the context in which is situated. However, no one approach to date has succeeded in capturing all these facets and giving answers to this wide range of questions, hence the current multiplicity of approaches addressing particular dimensions of language acquisition. These approaches not only focus on different subdomains, but also differ in their methodological tools (see Chapter 4, this volume). The first section of the chapter will outline what a theory should do and be clear about, e.g. in terms of its domain of application, its research agenda and its methodology, as well as the views of language, learning and the learner which underpin it. It will then outline the main research agendas which have motivated much of SLA research over the last forty years or so. It will also summarize what SLA theorizing needs to explain, that is, the findings which empirical research has brought to light. The second section will introduce the main theoretical approaches currently active, and outline their contribution to the overall SLA research agenda.

3.2 Why theories?

3.2.1 Purpose of SLA theories

The *Oxford Dictionary* defines a theory as "a supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained." For the purposes of SLA research, we might paraphrase this definition as "a more or less abstract set of claims about the units which are significant within the phenomenon under study, the relationships which exist between them, and the processes which bring about change" (Mitchell and Myles 2004: 7). In the context of a multifaceted phenomenon such as SLA, a theory might be restricted in scope and focus on a single aspect of the acquisition process, or it might be more elaborate and comprehensive. For example, a property theory will be primarily concerned with modeling the nature of the language system underlying learner productions, while a transition theory will aim to model the changes this system is undergoing during developmental processes (Gregg 2003b; Schwartz 1998b). A theory aims at explaining the phenomenon under investigation, not merely describing it, and will therefore evolve through a cyclic process of systematic inquiry, in which the claims of the theory are assessed against empirical evidence. This may take place through a process of hypothesis testing through formal experiment, or through more ecological procedures, where naturally occurring data are analyzed and interpreted. Theory building is a reflexive process: on the basis of empirical findings, the theory is

modified in order to better account for the facts that have been uncovered; new theoretical insights in turn give rise to the need for more empirical investigations to test them further.

In the context of second language acquisition research, different theoretical approaches will not only need to be explicit about which views of the nature of language, of the learner and of learning underpin them, but also about which aspect of SLA they are attempting to model or explain. As we have already suggested, a theory particularly suited to investigate the role that social relationships and networks play in the learning process might have very little to say about the role that, say, individual learner variables, or formal properties of human languages, play in this process. But whatever the particular focus of a given theory, we would expect it to be explicit about the following (Mitchell and Myles 2004: 9):

1. Clear and explicit statements of the theory's precise object of inquiry, as well as of the assumptions and claims which it is making about its view of the nature of language, of the learner, of the learning process and of how these interact with one another;
2. Systematic procedures for confirming/disconfirming the theory, through data gathering and interpretation: a good theory must be testable/falsifiable in some way;
3. Both descriptions of L2 phenomena, and attempts to explain why they are so (property theories), and proposals for mechanisms of development (transition theories);
4. Last but not least, engagement with other theories in the field, and serious attempts to account for at least some of the phenomena which are understood as common ground in ongoing public discussion.

Before outlining the main theoretical families currently in use in SLA research, and their position on each of the four points above, the principal research agendas which have motivated SLA research in the past forty years or so will be reviewed briefly.

3.2.2 SLA research agendas

The following core questions have motivated much of the SLA research carried out in recent decades (Myles 2010: 227):

Formal:

1. What is the linguistic system underlying learners' performance, and how do they construct this system, at various stages of development and in each of the following: phonology; morphology; lexis; syntax; semantics; discourse; pragmatics?
2. What is the role of (i) the native language or other previously acquired languages, (ii) the target language and (iii) universal formal properties of human languages?

Cognitive:

3. How do learners develop their ability to access and use their L2 system in real time, i.e. their processing capability?
4. What are the roles of individual differences and learning styles in shaping and/or facilitating L2 development?
5. What is the influence of the age of the learner, in shaping and/or facilitating L2 development?

Social and interactional context:

6. How does input/interaction/output facilitate, shape and/or accelerate the development of either 1 or 3 above (formal system and/or processing)?
7. How do the environment/social context facilitate, shape and/or accelerate the development of either 1 or 3 above (formal system and/or processing)?

Looking at those questions in more detail, we can say that the prime objective of the first two questions is to *document and understand formal linguistic development*. This has undoubtedly been the focus of a large part of SLA research to date, especially in the 1980s and 1990s, when much work aimed to establish developmental sequences in the domain of morphosyntax in particular (see Chapter 27, this volume). The investigation of these questions has relied on formal theories of language, not only to describe and analyze learner language (Hawkins 2001a; White 2003a), but also to explore the cohabitation and interaction of several language systems in the same mind (Cook 2003a; Cook and Bassetti 2011; Cook, Bassetti, Kasai, Sasaki and Takahashi 2006). The questions asked when attempting to explain developmental patterns in the different subsystems of language have become increasingly sophisticated, trying to account for the interplay between morphosyntactic, discursive, pragmatic and processing factors in shaping these patterns. In addressing these questions, the formal properties of both the L1 and the L2 (and increasingly any L3), as well as universal properties of language, have received much attention as possible explanatory factors, and the interplay between these different systems has been the object of much inquiry, as many of the formal properties in evidence in learner languages are not directly traceable to either the L1 nor the L2. A range of theoretical frameworks have been used to investigate these L2 formal patterns, and we will review some of these in the next section.

The third question, *how do learners develop their ability to access and use this system in real time (i.e. their processing capability)*, implies that the development of the formal linguistic system on the one hand, and the development of the ability to access and use this system in real time on the other, are two different kinds of development, relying on different types of internal mechanisms. And indeed, researchers interested in investigating the development of processing skills and of fluency have focused primarily on

processing mechanisms such as automatization, and have given relatively less attention to the formal properties of the developing system (see Chapter 19, this volume). This dissociation between formal linguistic knowledge and processing skills is not, however, accepted by all researchers, and we will review theoretical approaches which consider the two types of process as interdependent and impossible to separate (e.g. associationist/emergentist frameworks; sociocultural frameworks such as N. C. Ellis 2008a; O'Grady, Lee and Kwak 2009; Vygotsky 1978, 1986 [1934]). In the main, however, SLA researchers have treated linguistic knowledge and processing as separate and drawing on different learning mechanisms, though developing in parallel (Pienemann 2005a; Towell 2003, 2007; Towell and Dewaele 2005; Towell and Hawkins 1994).

The fourth question, on the *role of individual differences and learning styles in shaping and/or facilitating L2 development*, has been motivated by the well-documented observation that learners are highly variable in the speed at which they learn foreign languages, as well as in their ultimate success, and this is in marked contrast to first language learners, who are more homogeneous in rate and success of acquisition. Even with the same input and the same opportunities for interaction in, for example, a single classroom of beginners, some learners will progress much faster than others. Researchers investigating the reasons behind this observation have focused, on the one hand, on the role of intrinsic learner variables such as aptitude and learning style and, on the other hand, on potentially more extrinsic variables such as motivation and learning context (see e.g. Chapter 8, this volume; Dörnyei 2009a; Dörnyei and Skehan 2003 for reviews).

The fifth question deals with *the age of the learner*, and how far this can be expected to influence the learning process and eventual attainment; this complex issue has attracted the attention of the general public to the field, perhaps more than any other (Birdsong 2005a; Cable *et al.* 2010; Herschensohn 2007; Hyltenstam and Abrahamsson 2001; Johnstone 2002; Muñoz and Singleton 2011; Muñoz 2006a, 2008a, b).

The sixth question focuses on the *role of the input and of interaction* in L2 development. Here, researchers have investigated what type of input and interaction might facilitate, shape and/or speed up development (see Chapter 10, this volume; Gass 1997, 2003; Gor and Long 2009; Lyster 2004c; Mackey 2007; Mackey, Oliver and Leeman 2003). They have explored whether facilitative effects related to the type of input and/or interaction found in studies relate to all sub-domains of language, or whether it is primarily evident in the development of lexis, as in negotiation of meaning studies (Gass and Varonis 1994; and see Chapter 10, this volume), or also in the acquisition of syntax, as in the study of interrogative development by Mackey (1999). The role of input/interaction/output in the development of processing skills has also been investigated, and ways of manipulating input and interaction in order to promote learning has also been an important focus in this area (see e.g. VanPatten 1996, 2002; Chapter 29, this volume).

The final question is about the *role of the social and interactional context*. More recently researchers have become interested in exploring the role of the social context, not only in terms of the social status of the speakers or languages involved, but also in terms of the specific communicative needs entailed in different social contexts (Firth and Wagner 2007; Jenkins 2007), and in terms of the co-construction of identities in multilingual communities of practice (Chapters 11, 12, 13 and 30, this volume; Norton 2000; Pavlenko and Blackledge 2004).

This list of questions is not meant to be exhaustive, but rather aims to capture the main research agendas which have prevailed in the field over the last forty years or so, and are still to a large extent shaping it today, that is:

- Question 1 (formal properties of learner language) and question 2 (role of the L1, of the L2/L3 and of universals of languages in L2 development) are concerned with the formal properties of human languages; they focus on language, with different views of language underpinning them; they have a limited amount to say about the process of learning.
- Question 3 (processing capability) question 4 (individual differences) and question 5 (age of acquisition) have mainly been understood to relate to internal cognitive characteristics and mechanisms; their main focus is on learning.
- Question 6 (the role of input and interaction) and question 7 (the role of the social environment) concern sociocognitive and social factors; the focus is on the wider social context, on interactional patterns and/or on language use, with both language and learning often receiving limited or partial attention (Myles 2010).

Before introducing the main theoretical families, it is useful to briefly outline some of the main empirical findings of SLA research in recent decades which are relevant to these questions. These findings provide a foundation for reviewing the different theoretical approaches in terms of their contribution to explaining and interpreting them.

3.2.3 Research findings

Researchers have established a number of well-documented findings characteristic of the second language acquisition process. The following provides a brief summary of these (see Myles 2010). A comprehensive review is also found in e.g. R. Ellis (2008):

- L2 learners follow developmental stages in their acquisition of a specific second (or third) language. These are largely independent of the learner's first language, and of the mode of exposure (naturalistic vs. instructed); moreover, they are often similar to the stages followed by children acquiring this same language as an L1 (e.g. the acquisition of interrogation

and negation in English L2, of German word order etc.). Although the existence of developmental stages is well established (see Chapter 27, this volume), our knowledge of these stages remains rather patchy, especially in languages other than English and in areas other than morphosyntax.

- The linguistic system underlying learner production is rule-governed, but these rules do not always resemble the rules underlying the L1 or the L2 (e.g. L2 learners go through an early stage where verbs are typically uninflected, and this is found even for learners whose L1 and L2 both obligatorily inflect verbs (Housen 2002; Lakshmanan and Selinker 2001; Myles 2005)). Additionally, learners acquire subtle grammatical properties of the L2 which do not seem learnable from the input alone, and which they have not been taught explicitly (Dekydtspotter 2001; Dekydtspotter and Sprouse 2001; Hawkins 2004).
- Some properties from the L1 are likely to transfer, others not; moreover, within pairs of languages, properties often transfer one way but not the other. For example, object pronouns are placed after the verb in English (*Peter paints* ***it***) but before the verb in French (*Peter* ***la*** *peint*). French learners of English do not transfer French placement and never produce **Peter* ***it*** *paints*, whereas English learners of French go through a stage of wrongly producing postposed object pronouns in French L2 (**Peter peint* ***la***) (for a review, see Mitchell and Myles 2004). Thus, although transfer undoubtedly plays a part in L2 development, its role is complex and remains relatively poorly understood (see Chapter 5, this volume).
- The rate and outcome of the learning process is highly variable, with some learners arguably becoming indistinguishable from native speakers and others fossilizing at a much earlier developmental stage, sometimes in spite of plentiful input. There is some variability in the route of development, both across learners and within learners, but in comparison, it is relatively limited.

The following section presents the main theoretical families which have addressed the varied research agendas that we have briefly reviewed, specifying their domain of application, their view of language, of learning and of the learner, and evaluating their contribution to our understanding of some of the empirical findings just presented.

3.3 The main theoretical families

In keeping with our discussion so far, the main theoretical families introduced in this section are classified in terms of their focus on the formal properties of learner language (linguistic theories), on cognitive considerations such as processing or psychological makeup of individuals (cognitive theories), or on the social and interactional context of second language acquisition (interactionist, sociolinguistic and sociocultural theories). These

divisions are of course somewhat artificial, and sometimes difficult to maintain in the context of approaches to language and to learning which increasingly aspire to integrate formal, cognitive and social variables. Much of the research in each of these families has continued to pursue its own specific agendas, with its own methodological apparatus.

3.3.1 Linguistic approaches

For the purpose of this chapter, "linguistic approaches" refers to theoretical approaches that focus on the formal properties of language and how these shape the development of an L2, in the context both of universal properties of human language and of specific L1–L2 pairings. For illustrative purposes, we focus primarily although not exclusively on the Universal Grammar approach, as it has been highly influential and productive within this theoretical family (see Chapter 7, this volume). Other linguistic approaches, e.g. functionalist, structuralist or Hallidayan, have contributed to SLA research, e.g. especially in the context of the European tradition, but the scope of this chapter does not allow a contrastive analysis of these different linguistic theories' contribution to the SLA research enterprise.

Domain of inquiry

The focus of linguistic approaches is the description and explanation of the formal system underlying learner production and comprehension: what is this system like at various stages of development, and why is it that way? When evaluating the contribution of linguistic theories, it is important to remember that they are theories of human language, and have therefore much broader scope than the description and explanation of (second) language production. Their domain of inquiry is vast, as outlined for example in Chomsky (1986) who sees the goals of linguistic research as providing answers to three distinct questions: (1) what constitutes knowledge of language? (knowledge in the Chomskyan sense meaning abstract underlying representations rather than conscious metalinguistic knowledge); (2) how is knowledge of language acquired? and (3) how is knowledge of language put to use?[1]

Within a very broad agenda which seeks to understand the nature of human language, first language acquisition has always been an important driving force; and Chomskyan theory building has always seen accounting for the ease with which children acquire their native language in spite of the complexity and abstractness of human language as an important goal and motivator. This ease of acquisition has been argued to be due to an innate language faculty which guides and constrains children in the hypotheses they make about the language they are acquiring. The focus of linguistic inquiry within this framework has never been on the acquisition of second languages. But as a general theory of language, this line of inquiry has been of direct relevance to the study of second languages, which are assumed to

be natural languages and therefore to be governed by the constraints which operate on all human languages. Additionally, given the many similarities between first and second language acquisition, if Universal Grammar can explain the former, it will also play a part in the latter. Furthermore, UG might explain some of the differences between L1 and L2 acquisition by providing a theoretical frame for investigating constructs such as the Critical Period (whereby innate language faculties constraining first language acquisition might not be available to older L2 learners) and transfer when comparing pairs of languages in a principled way.

In spite of its potentially vast remit, most of the SLA research attention within this framework to date has been on morphosyntax, with some long-standing interest in L2 phonology (Archibald 1993; Broselow 1984; Ioup 1984; Ioup and Weinberger 1987; and see Chapter 25, this volume), and a few studies on L2 semantics (Dekydtspotter, Sprouse and Thyre 1999, 2000; Juffs 2000; and see Chapter 22, this volume). More recently there has been much interest among researchers in developing a better understanding of the interfaces between the different subsystems of language, for example between morphosyntax and semantics or pragmatics (Arche and Domínguez 2011; Domínguez 2007; Sorace and Serratrice 2009; Sorace, Serratrice, Filiaci and Baldo 2009) or phonology (Goad and White 2008). Formal linguistic approaches to SLA, whether structuralist, functionalist or UG, do not typically include any developed theory of processing, or of learning. Moreover, researchers in this tradition have very little to say about what triggers development in either L1 or L2 acquisition, apart from rather general claims such as the need to communicate/make meaning. In the context of first language acquisition, linguists claim that all that children need is language around them for it to develop, and the cognitive mechanisms driving this development are beyond their formal remit. Their domain of inquiry is seen as a property theory and not a transition theory, and it is within these parameters they must be understood and evaluated (Mitchell and Myles 2004).

Views on the nature of language

The view of language characterizing the UG approach is usually modular, with the formal properties of language being part of a distinct structure in the mind, and different aspects of language in turn being modular (syntax, phonology, etc.) (Coltheart 1999; Fodor 1983; Jackendoff 2002). Until recently, morphology and syntax have been the privileged object of study, with the focus firmly on the sentence and its internal structure, rather than any larger unit of language. Work at the level of smaller units (words, morphemes, phonemes) has also been primarily concerned with structure and how different elements relate to one another. This is one of the major criticisms by outsiders of work in this tradition; it is seen as studying language somewhat clinically, in a vacuum, as a mental object rather than a social or psychological one (Lantolf 1996; Zuengler and Miller 2006) and as rigidly separating language knowledge from language use. It is primarily interested

in the former, leaving the latter to other theorists. This dichotomy between competence (the mental representations underlying language in the mind) and performance (the realization of language in real time) is central to this approach, as performance is seen as a defective window onto this mental grammar, full of imperfections due to the real-time demands of online processing.

Not all formal linguistic theories adopt the modular approach characteristic of UG. For example, the Hallidayan systemic functional school (Halliday and Matthiessen 2000) views language as essentially a set of form–function mappings in which meaning is the driving force. The main difference between this approach and Chomskyan linguistics is that syntax is not clearly separate from semantics and pragmatics (Hendriks 2005; Klein and Perdue 1992; Perdue 2000). In the context of SLA, although these approaches have contrasting views of language itself, they both focus on understanding and explaining learner language in a formal sense, as the result of the individual mind shaping learner production.

The dichotomy between competence and performance in Chomskyan approaches which we mentioned earlier has been the object of much criticism, both theoretical and methodological. The theory is preoccupied with the modeling of linguistic competence, and the study of naturalistic performance is not seen as a suitable window into mental representations of language, as it is affected by various non-linguistic performance factors (Towell and Hawkins 2004). In the context of SLA, this is seen as even more problematic, as L2 representations are less stable than those of native speakers, and therefore even more difficult to tap. Grammaticality judgment (GJ) tests (in which subjects – learners or native speakers – have to decide on the grammaticality of sentences presented to them) were long thought to be the most appropriate methodology to access native speakers' intuitions about their native language, as they usually demonstrate agreement about what is grammatical or ungrammatical in their language. L2 learners' intuitions, however, are much more likely to be unstable, and therefore less reliable, and often, data on L2 competence deriving from GJ tests are disputed and reinterpreted. (For a discussion of this problem, see Chaudron 2003; Sorace 1996.) The reason why GJ tests rather than, for example, spontaneous production have frequently been used is because it can be very difficult to get evidence about subtle grammatical properties which might not be present in learners' spontaneous output. More recently, SLA researchers within this paradigm have taken criticisms about the unnaturalness of GJs seriously, and they are using a greater variety of elicitation techniques (see Chapter 4, this volume). Thus even if use of grammaticality judgment tests is still frequent, they are usually complemented by production and interpretation data, online experiments or neurolinguistic experiments using e.g. event-related potentials (e.g. Domínguez, Tracy-Ventura, Arche, Mitchell and Myles in press; Hopp 2009; Sabourin 2009). While using a range of elicitation techniques strengthens any consistent findings, the problem of drawing

inferences about L2 learners' mental representations from such data nonetheless remains.

View of the learning process

In terms of their view of the learning process, formal approaches to SLA have been criticized for leaving untouched a number of areas central to our understanding of the second language learning process. First, linguistically, the UG approach has in the past been almost exclusively concerned with syntax, though recent interest in phonology, morphology and the lexicon has started to redress the balance somewhat. Semantics, pragmatics and discourse have not been central to its endeavors, even if recent work has increasingly addressed interfaces between the different linguistic modules. To give an example, word order in Spanish appears syntactically very flexible, when in fact it is governed by subtle pragmatic rules, and researchers have been interested in finding out how syntax and pragmatics interact in SLA (Alexiadou, Anagnostopoulou and Everaert 2004; Arche and Domínguez 2011; Archibald 2004; Domínguez 2007; Hopp 2009; Rothman and Slabakova 2011; Sorace and Serratrice 2009; van Hout, Hulk, Kuiken and Towell 2003). Second, the UG approach has been exclusively concerned with documenting and explaining the nature of the L2 linguistic system, quite properly, given that it is a formal linguistic theory. And while functionalists have focused more clearly on semantics, discourse and pragmatics, their interest has also been primarily on the language system and its relationship to meaning (for example, how L2 learners present new vs. old information in discourse), rather than on the learning process (Andersen and Shirai 1994; Bardovi-Harlig 2000; Klein and Perdue 1992; Salaberry 1999; Salaberry and Shirai 2002). The social and psychological variables which affect the rate of the learning process or its ultimate outcome are beyond their remit and therefore largely ignored. This has often left educationalists frustrated, as language teaching practice is very much embedded in and shaped by social and psychological constraints.

Bearing in mind the domain of inquiry of formal linguistic approaches, however, it is unsurprising that linguists have had little to say about the learning process itself. These approaches view the learning process as the interaction between linguistic input and universal linguistic mechanisms operating within the mind of individuals. Linguistic input is thought to trigger these universal mechanisms, but little work has been carried out on this triggering process until recently (Hara 2007; Isabelli 2003; Schwartz and Gubala-Rysak 1992; White 1992). This is changing, however, with researchers such as Carroll (2001, 2009) or Truscott and Sharwood Smith (2004a) exploring the relationship between the processing of the input and formal linguistics (see Chapters 26 and 27, this volume).

View of the language learner

As we have already seen, formal linguistic approaches are only interested in the learner as the possessor of a mind which contains language; the

assumption is that all humans are endowed with such a mind, and variations between individuals are of little concern. Again, the emphasis is very much on language as the object of study, rather than on the speaker or learner as a social being, and the focus is on what is universal within this mind. Native speakers of a given language community are seen as sharing the same mental grammar (notwithstanding minor local variations), which is viewed as relatively static (only the lexicon is seen as growing throughout a lifetime). By contrast, second language learners are seen as "non-native," with their learning endeavors having as objective the native-speaker norm.

This idealized, static and normative view of language and of the language learner has been criticized for being based on a monolingual speaker in a predominantly multilingual world, and for assuming second language learners have as their target the native-speaker norm, which is very often not the case (Firth and Wagner 2007; Jenkins 2007; but see earlier recognition of this, in Bley-Vroman 1983).

Linguistic approaches and SLA research agendas/findings

We summarized earlier the main research agendas within SLA as having focused on three broad areas: the analysis of the linguistic system underlying learners' L2 development, including the role of the L1 in this development; the nature of processing in the L2 and the role of psychological variables in speeding up or hindering L2 processing; and the role of the social and interactional context in L2 learning.

Formal linguistic approaches, given their domain of inquiry, have focused on the first part of this agenda. Chomskyan approaches have tended to focus primarily on morphosyntax (and on phonology to a lesser extent), until recently when interfaces between subsystems have increasingly come to the fore, whereas functionalist approaches have concentrated on semantic/discourse/pragmatic concerns when investigating learner language and developmental stages. As regards the research findings summarized above, linguistic approaches have attempted to explain aspects of many of them (indeed they have been at the origin of some of these findings), as follows:

(a) Developmental stages

The UG approach argues that, like children acquiring their L1, second language learners' hypotheses about the L2 are constrained by the restricted possibilities afforded them by UG. For example, the lack of inflected verbs in early stages would arguably be due to learners not yet having acquired the functional projection hosting tense features (the Inflection Phrase) (Hawkins 2001a; Vainikka and Young-Scholten 1994, 1996a, to appear). Functionalist approaches have modeled early L2 development in terms of three distinct universal stages (see Chapter 27, this volume, for discussion).

As mentioned before, however, what triggers development from one stage to the next has been underresearched.

(b) Interlanguage rules are unlike both the L1 and the target language

The example mentioned above is a case in point; the uninflected verb stage witnessed in many L2 learners' production does not reflect either the native grammar or the target grammar when both languages inflect verbs. The reason put forward to explain this differs, however, depending on which formal linguistic framework is adopted.

(c) Selective transfer of L1 properties

The UG approach, by comparing the formal properties of languages crosslinguistically, enables predictions to be made about transfer. In the example outlined previously whereby French learners of English do not transfer pronoun placement whereas English learners of French do, this would be due to the fact that this property in French is linked to the strength of the inflection phrase which forces verbs (and their clitic pronouns) to raise to a higher position in the syntactic tree, whereas it remains in situ in English as the inflection phrase is weak and does not trigger movement (Herschensohn 2004; White 1996a). Therefore, before L2 learners of French acquire the inflection phrase and its feature strength, the clitic pronoun would not raise and would remain after the verb.

(d) Variable rate and outcome of SLA process

This approach neither enlightens us as regards variability in the rate of learning, nor in variable outcomes with learners with the same L1/L2 combination. It has, however, provided us with some testable hypotheses about why some grammatical properties might never become nativelike for L2 learners. For example, it has been suggested that grammatical gender is not available past the Critical Period as a formal feature to L2 learners whose L1 does not have this feature (Franceschina 2001; Hawkins and Franceschina 2004).

Conclusion: contribution of formal linguistic approaches to theory building

The domain of inquiry of formal linguistic approaches is the description and explanation of the formal nature of human languages, including second languages. There is no doubt that within this agenda, the UG descriptive framework has been hugely influential. It has helped researchers formulate sophisticated and well-defined hypotheses about the exact nature of the language system (learner systems as well as the L1 and L2 systems), the interplay between the first and second language in L2 learners and the linguistic knowledge learners bring to the task of L2 acquisition. These hypotheses have been tested in a wealth of empirical studies which have enhanced our understanding of L2 morphosyntactic development in particular, but also of how different linguistic subsystems might interact.

Other formal linguistic approaches have met with some success and enlightened us on specific aspects of the SLA process. By focusing on how learners convey meaning, for example, functional-pragmatic approaches have drawn our attention to discourse organization in learner language. The domain of inquiry of linguistic approaches does not enable them to account for processing mechanisms nor social factors which are outside their remit. Understanding of these is the domain of other theoretical approaches, with which formal linguists have become increasingly engaged, and to which we now turn.

3.3.2 Cognitive approaches

Cognitive approaches see the acquisition of a second language as the acquisition of a complex skill, and here researchers believe that we can better understand the second language acquisition process by investigating how the human brain processes and learns new information, as well as how a learner's individual makeup impacts on this process. The focus is very much on the learning dimension of second language acquisition, rather than on the formal properties of learners' second languages. These approaches are generally classified as *transition* theories, that is, theories which aim to understand how learners develop over time in the L2 (Gregg 2003b; Schwartz 1998b) rather than as *property* theories, which describe and explain learners' linguistic systems. As we will see below, however, the boundary is not always clear, and some cognitive approaches consider the language system and its acquisition as one and the same thing.

Domain of inquiry

The domain of inquiry of cognitive approaches is varied, but as is the case with formal linguistic approaches, they also focus on the individual and on what happens in the human mind. However, rather than drawing hypotheses from the study of linguistic systems, cognitivists' hypotheses originate from cognitive psychology and neurology, and from what we know about the acquisition of complex skills generally. They view second language acquisition as one instantiation of learning, relying on the same mechanisms as other types of learning, rather than as language specific, as the UG approach does. Consequently, processing approaches have been interested not so much in the formal properties of language, but on how learners gradually expand their linguistic knowledge and learn to access it increasingly efficiently in online production (Ellis 2002; Harrington 2001; Juffs 2004; McLaughlin and Heredia 1996; Myles 1995; Pienemann 2003, 2007). The primary focus on the individual mind of the learner, regardless of context, also applies to a large extent to work on individual differences between learners, for example their level of intelligence or working memory capacity; the way in which constructs such as anxiety or motivation might be socially and culturally shaped has also played some part in this subfield (Dörnyei 2009a;

Dörnyei and Skehan 2002, 2003; Dörnyei and Ushioda 2009, 2011; Robinson 2002a; Sawyer and Ranta 2001; Skehan 1989).

Given this focus, cognitive SLA theorists' main focus of investigation has been the development of processing skills in L2 learners and the way in which these contribute to learning, and the role of individual differences, both in terms of cognitive factors such as intelligence, working memory or aptitude, and in terms of (socio-)affective factors such as motivation, anxiety, extroversion, learner beliefs, learning styles or learner strategies.

Views on the nature of language

The view of language within cognitive approaches is relatively underdeveloped, as the focus is on the learning process. In fact, many SLA researchers working on these approaches do not see language as a separate module in the human mind, but as just another form of information which is processed through general cognitive mechanisms. This dichotomy, between language being seen as a separate module or as an integral part of cognition, is of course somewhat charicatural; there are researchers who believe that there is a language-specific module for first language acquisition, but that the learning of second languages is different and relies on general cognitive mechanisms (see for example Bley-Vroman 1989). Even within the context of L1 acquisition, some researchers believe that some aspects of language acquisition are innate and other aspects not, and others leave the question open (Butterworth and Harris 1994; Harley 1995). The question of the specificity and innateness of the language faculty is far from resolved, in both the L1 and L2 acquisition fields, and the opposition between cognitivists and innatists should be seen more in terms of two ends of a continuum rather than a dichotomy. Even within frameworks concentrating firmly on the processing component of language learning such as Processability theory (Pienemann 1998, 2003, 2005a, 2010), the possibility of an innate linguistic module is not rejected outright; Pienemann does not take a stand on this, but deals exclusively with the growth of the computational mechanisms required for the processing of second languages. Thus formal versus cognitive approaches are increasingly seen as complementary rather than conflictual.

Cognitive theorists of SLA fall into two main groups:

(a) Processing approaches: researchers such as Pienemann (2005a, 2010), Towell (2000, 2004) and Towell and Hawkins (1994, 2004), or VanPatten (2002, 2007) who believe that language knowledge might be special in some way, but who are concerned to develop transition/processing theories to complement property theories such as UG or, in the case of Pienemann, another linguistic theory (Lexical Functional Grammar).
(b) Emergentist/constructionist approaches: theorists such as N. C. Ellis, MacWhinney, Tomasello and others (N. C. Ellis 2003, 2007, 2008b; N. C. Ellis and Larsen-Freeman 2006; N. C. Ellis and Schmidt 1998;

Goldschneider and DeKeyser 2001; MacWhinney 1999, 2001; O'Grady, Lee and Kwak 2009; Tomasello 2003), who do not think that the separation between property and transition theories is legitimate, as they believe that one can explain both the nature of language knowledge and how it is processed through general cognitive principles. In fact, they do not make the distinction between competence and performance, as they see these as being one and the same thing. In this view, the learner is seen as operating a complex processing system which deals with linguistic information in similar ways to other kinds of information.

Cognitive approaches to the role played by individual differences in facilitating or speeding up learning focus exclusively on psychological variables, and the nature of language falls outside their domain of inquiry.

View of the learning process

The learning process is the main focus of cognitive approaches, and in particular its computational dimension. *Information processing* approaches investigate how different memory stores (Short-Term Memory (STM); Long-Term Memory (LTM) – declarative and procedural) deal with new L2 information, and how this information is automatized and restructured through repeated activation. Processability theory looks more specifically at the processing demands made by various formal aspects of the L2, and the implications for learnability and teachability of L2 structure (Pienemann 2003, 2005a, 2010).

Constructivist/emergentist views of language learning share a usage-based view of language development, which is driven by communicative needs, and they reject the need to posit an innate, language-specific, acquisition device. These include approaches known as emergentism, connectionism or associationism, constructivism, cognitivism and the Competition Model (an explanation of the differences between these terms is beyond the scope of this introductory chapter; for overviews, see Chapter 28, this volume, as well as e.g. N. C. Ellis 2003; MacWhinney 1999; Plunkett 1998; Tomasello 2003; Tomasello and Brooks 1999). These approaches "emphasize the linguistic sign as a set of mappings between phonological forms and conceptual meanings or communicative intentions" (N. C. Ellis 2003: 63). Learning in this view occurs on the basis of associative processes, rather than the construction of abstract rules. Learning is seen as the analysis of patterns in the language input, and language development is seen as resulting from the billions of associations which are created during language use, and which lead to regular patterns in learner performance which might look rule-like, but in fact are merely frequency-based asssociationist preferences. These links become stronger as these associations keep recurring, and they also become part of larger networks as connections between elements become more numerous. Language in this view is seen as a set of probabilistic patterns which become strengthened in the brain of the learner through repeated activation.

For theorists interested in individual differences, the learning process is not itself the object of study, but rather how learner characteristics impact on this process (see Chapter 8, this volume).

View of the language learner

Cognitive approaches, like linguistic approaches, are concerned primarily with the individual, and do not focus on the learner as a social being. But they are interested in the learner's mind as a processor of information, rather than in the specificity of the linguistic information it contains.

Cognitive approaches view the learner as responding to the multitude of information surrounding us, processing it, organizing it and storing it. They view the human mind as having evolved a sophisticated cognitive makeup enabling it to deal with a wealth of information. A working memory of limited capacity filters new information and selects which elements are processed at any given time. Information is then stored and organized in short- and long-term memory stores, both declarative and procedural, in order to be retrieved increasingly efficiently through repeated activation, as learning occurs. As with formal linguistic approaches, the focus is not only on the individual, but also on what is universal in the makeup of the human mind, in this case in terms of the human mind's characteristics as a processor, organizer and storer of information.

The *individual differences* approach, on the other hand, focuses on individuals' specific characteristics rather than on what is universal, and on how these individual characteristics interact with the learning process. These approaches therefore view the learner as a unique sum of a range of psychological variables which will all impact on the rate and outcome of the learning process.

Cognitive approaches and SLA research agendas/findings

Cognitive approaches have primarily investigated research questions 3 and 4:

Question 3. How do learners develop their ability to access and use their L2 system in real time, i.e. their processing capability?

Question 4. What are the roles of individual differences and learning styles in shaping and/or facilitating L2 development?

In addressing these questions, cognitive approaches have put forward explanations for some of the findings we have outlined above, as illustrated (selectively) below:

(a) Developmental stages

Processability theory (Pienemann 1998, 2005a, 2008, 2010) has argued that the acquisition of processing in the second language is incremental and hierarchical, thus explaining developmental stages in a principled way, with

word-level processing preceding phrase-level processing which in turn precedes sentence-level processing. In the example mentioned previously about the acquisition of object pronoun placement in French L2, the raising of the pronoun from its in situ position after the verb involves interphrasal processes which will be more costly than in the context of L2 English where the pronoun remains in situ. Connectionism also views learning as incremental as neural networks become strengthened, with developmental patterns being linked with frequency, saliency and regularity of patterns in the input.

(b) Interlanguage rules are often unlike both the L1 and the target language

As just mentioned, the processing limitations at each stage of development in Pienemann's model will give rise to learner productions which are unlike both native and target languages. In the case of the uninflected verb stage, this will be because learners have not yet gone beyond the phrase-level processing stage. Under an emergentist view, the overgeneralization of frequent patterns might lead to learner-specific productions unlike either L1 or L2 (O'Grady 2008b; O'Grady *et al.* 2009).

(c) Selective transfer of L1 properties

Similarly, transfer might occur one way (from a given L1 to a given L2) but not the other when the processing demands for a particular structure are greater in one language than another, and therefore beyond the current processing capabilities of the learner in the L2 in one direction but not the other (Pienemann 2003). Transfer might also be a strategy used when communicative needs go beyond the current grammar of the learner, who might then borrow an L1 structure in the absence of a suitable interlanguage form (Benson 2002).

(d) Variable rate and outcome of SLA process

This is the area in which research on individual differences has had most impact. Work on e.g. aptitude, intelligence, anxiety, motivation, etc. has found correlations between certain individual characteristics and both rate of learning and eventual success in a second language (see Chapter 8, this volume; Dörnyei and Skehan 2002, 2003; Dornyei and Ushioda 2009; Robinson 2002a).

Conclusion: contribution of cognitive approaches to SLA theory building

A wealth of studies has been carried out from the perspective of cognitive psychology, and there is no doubt that they have greatly enriched our understanding of SLA processes. As we have seen, although there are some similarities between cognitive approaches and formal linguistic approaches, in that both focus on language and/or learning within the mind of the individual learner, there are also major differences between these theoretical families, both conceptually and methodologically. Formal linguistic approaches

focus on the linguistic system and its domain-specific nature, whereas the territory of cognitive approaches is the learning mechanisms involved in the SLA process and what impacts upon them. Their underlying assumption is usually that learning a language relies on similar mechanisms to those used in other types of learning, i.e. it is not domain specific. Consequently, their methodologies are very different, with cognitive psychologists making use of laboratory techniques to measure accurately performance indicators during L2 processing such as length of pauses, priming effects and reaction times. Formal linguists, on the whole, tend to apply linguistic analysis techniques to the study of L2 learners' productions or intuitions, though they tend to consider language outside the mechanisms underlying its use. Both methodologies have their advantages and disadvantages; laboratory studies have the benefit of being able to control in a precise way the variables under study. But this very fact can also be seen as a disadvantage, as it assumes one can study discrete aspects of language in isolation, without taking account of the interaction between the different language modules, or of the social context in which language use is embedded. A distinctive feature of connectionist approaches resides in the links they attempt to build with neurology and even neurobiology, and the methods used to explore this. Connectionists believe that we have to study learning within the actual architecture of the brain, and make use of neurological information: "two distinctive aspects of the connectionist approach are its strong emphasis on general learning principles and its attempt to make contact with neurobiological as well as cognitive phenomena" (N. C. Ellis and Schmidt 1997: 154).

Cognitive theories, like formal linguistic theories, have met with some success in explaining some of the results in SLA research, each bringing particular insights into specific aspects of the process. Their focus on different parts of the human mind, language or learning mechanisms respectively, has meant that their respective research agendas and research questions have often been complementary rather than contradictory. Neither of these approaches, however, have embedded the study of SLA within its social and interactional context, nor taken full account of the social dimension of language and the impact it can have on the SLA process. We now turn to the next theoretical family, which focuses on this.

3.3.3 Interactionist, sociolinguistic and sociocultural approaches

Sociolinguists, social theorists, conversation analysts and interactionists, in contrast with the two previous families, focus on the social context in which language learning takes place, and the role that this context plays in the co-construction of both linguistic knowledge and identity (see Chapters 13 and 30, this volume). This work ranges from macro-analyses of the role of social factors and contexts in the (co-) construction of identity (Firth and Wagner 2007; Jenkins 2007; Morgan 2007; Norton 2000, 2010; Toohey 2000), to micro-analyses of interactions aiming to investigate the role of

scaffolding and microgenesis in L2 learning, for example (Gánem Gutiérrez 2008; Lantolf 2008; Lantolf and Poehner 2008; Lantolf and Thorne 2006; Mitchell 2004; Ohta 2010), or the way in which conversations are negotiated and co-constructed (Long 1996; Mackey 2007; Mackey, Oliver and Leeman 2003; Mackey and Polio 2009; Pekarek Doehler 2006; Pekarek Doehler and Ziegler 2007; Philp and Tognini 2009; Seedhouse 2004). Much of this work, especially in the sociocultural tradition, sees language as a cultural product, jointly constructed during social interaction, and thus often disagrees fundamentally with a cognitive view of language or of learning. Consequently, the focus has not been on understanding which formal properties are acquired and how, but rather on providing a glimpse of the actual process of acquisition taking place in real time, and of the forces at play. Much sociocultural research, however, has concentrated on *microgenesis*, i.e. illuminating small local changes in learners' L2 knowledge which arise through different types of L2 interaction and engagement, and has less to say about changes in the L2 system in the longer term. Interactionists and sociolinguists also focus on language in context, and on local variation and change in the L2 system, although the former researchers commonly situate themselves within a broadly cognitive paradigm, with the object of study the sociocognitive processes taking place in interaction. Some sociolinguistic research, however, is developmental and focuses on the acquisition of sociopragmatic norms and registers in second language learners (see Chapters 13 and 23, this volume; Bayley and Regan 2004; Dewaele 2004a; Dewaele and Mougeon 2004; DuFon and Churchill 2006; Kasper and Rose 2002; Rose 2005; Tarone 2007). So, the common thread here is the importance of the social and interactional context, with major differences in how the learning process is viewed, either as primarily social, or as cognitive/individual.

Domain of inquiry

The different approaches within this broad theoretical family have somewhat different domains of inquiry. What they have in common, however, is that they focus more on the situated context in which second language learning takes place than on the mind of the learner or on the language system. The sociocultural framework has been particularly influential in social and educational research and its domain of inquiry is the learning process as a social and inter-mental activity, in which language is seen as a mediation tool. Interactionists focus on the role played by the different types of interactions the learner may engage in. They examine not only the role that the input learners are exposed to might play, but also the role of any output produced by the learner, as well as the interactional patterns between learners and other conversational partners; their aim is to identify what kind of interactions might be maximally facilitative of L2 learning. Both sociocultural theorists and interactionists may engage in detailed analyses of interactional patterns, but using different conceptual frameworks. Researchers interested

in the development of sociolinguistic and sociopragmatic competence focus on language, albeit on its social and pragmatic functions rather than its formal nature as in the case of linguistic or cognitive approaches.

Views on the nature of language

As will be obvious from the above, the views of the nature of language vary widely within this broad theoretical family. Some sociocultural theorists increasingly ally themselves with views of language associated with cognitive linguistics (Langacker 1987, 2008b; Lantolf 2011; Lantolf and Thorne 2006) or adopt a view of language as a complex system (see discussion in Chapter 30, this volume). Some sociolinguists adopt a broadly functionalist approach. The prime focus all have in common is that they see language as embedded within its social and interactional context, and they are interested in the role this context plays, in order to answer widely different research questions depending on the framework adopted. Sociolinguists are interested in studying how the complex social and pragmatic rules and conventions typical of any mature language are acquired by second language learners. These rules are often acquired late and can be very difficult for L2 learners to grasp (e.g. the distinction between formal *vous* and informal *tu* when addressing someone in French, or the wide range of honorific forms of address in Japanese (Dewaele 2004a; Iwasaki 2008)); many sociolinguists argue that it is the concern to establish a desired L2 identity (or a hybrid identity) which drives the learning of such forms, and/or the rejection of them by some learners.

Sociolinguists thus adopt a broad view of language, including its relationship with paralinguistic aspects of communication appropriate to various contexts and communities of practice, which may be seen as drivers of acquisition. Interactionists view language primarily as a source of input which can be modified in various ways in order to facilitate the learning process; by and large, they do not challenge the view of language as a separate module in the learner's mind, with a vocabulary and a set of grammar rules which have to be acquired. Sociocultural theorists, on the other hand, have a very different view of language. They view language as a tool for thought, and are highly critical of theories which view communication as primarily about the transmission of predetermined meanings and messages. Instead, they view dialogic communication as central to the joint construction of knowledge (including knowledge of language forms), which is first developed intermentally, and then appropriated and internalized by the individual. They reject the Saussurean idea of language as an autonomous abstract system, and hence Chomsky's distinction between competence and performance, preferring to adopt e.g. emergentist accounts.

View of the learning process

Unlike innatists but similarly to cognitivists, sociocultural theorists believe that the same general learning mechanisms are involved in language

learning as in any other kind of learning. However, unlike cognitivists, they see learning as primarily social, rather than individual, with learners actively shaping their learning environment and co-constructing knowledge with their interactional partners. Learning in this view is not separate from language use, learning *is* language use. In fact, much of sociocultural theorists' work involves the very detailed analysis of micro-language events such as scaffolding in conversations (where learners help one another in the joint elaboration of a solution to a problem), or the use of private speech to internalize new knowledge (e.g. learners repeating silently an explanation by the teacher) (Gánem Gutiérrez 2008; Kenning 2010; Lantolf 2000; Lantolf and Thorne 2006; Ohta 2001c; Zuengler and Miller 2006).

Interactionists also focus on micro-episodes of language interactions, in order to find out what role the input learners receive plays in the learning process, and how modifications to this input might facilitate language learning. The various strategies used by learners to negotiate this input in order to make it meaningful are also a focus of attention (e.g. when a learner asks or guesses the meaning of a word; the role of recasts – when the teacher repeats what a learner has just said but without a mistake), as is the role played by *output*, that is the language produced by learners. Learning in this view is a process of enabling cognitive mechanisms to work on the language to be learnt, by actively engaging with it through meaningful interaction (Braidi 1995; Gass 2003; Mackey 2007; Mackey and Polio 2009).

Sociolinguists' focus is diverse, representing a multitude of theoretical perspectives ranging from sociolinguistic variation to identity construction, second language socialization to communities of practice, or the role of affect and emotion in second language learning. The focus is primarily on language use and the social and affective context in which learning is taking place, and how both this context and the personal aspirations of the learner for a particular type of identity can shape the kinds of encounters and any subsequent learning which may take place. In terms of their view of the learning process itself, apart from researchers who conduct quantitative studies of how L2 learners acquire the sociopragmatic rules underlying language use, sociolinguists concentrate on the social forces at play, through qualitative and interpretative analyses (Bayley and Regan 2004; Dewaele 2004a; Kasper and Rose 2002; Norton 2010; Tarone 2007; Toohey 2000).

Overall, theoretical approaches within this paradigm have tended to focus on the study of language use, which they view as the driver of language development, and their contribution to our understanding of learning has focused primarily on the detailed description of language episodes which might contribute to learning or inhibit it.

Views of the language learner

For sociocultural theorists, the view of the language learner is closely related to that of language and of learning. As described above, language is seen primarily as a tool for thought or as a means of mediation in mental activity,

both within the learner, e.g. through private or inner speech, and in collaboration with others, e.g. through scaffolding and microgenesis. Learning in this view is therefore primarily a mediated process. It is mediated both through learners' developing use and control of mental tools (with language playing a central role), and it is socially mediated through interaction and shared processes such as problem solving and discussion.

Some sociolinguists view the language learner in a similar way to cognitivists, as an individual mind whose task is to acquire the rules of the L2, albeit its sociopragmatic rules in this case, rather than its grammar or vocabulary (see Chapter 23, this volume). In order to study the acquisition of these rules, they make use of (socio)linguistic or psycholinguistic methodologies. Ethnographers, on the other hand, focus on the learner as a social being situated within a specific context, affording different opportunities for learning linked to specific communities of practice, involving unequal power relationships which shape the interactional practices taking place. Learners in this view are very much seen as active social partners within complex social settings and the focus of this approach is on how they negotiate their learning in situated contexts, as well as on how their identity is shaped by these encounters (for more details, see Chapter 12, this volume).

Interactionists, as outlined above, pay attention to the interactional patterns learners engage in, and how they affect language learning. Their view of the learner is primarily as an individual engaging with conversational partners in order to develop an interlanguage system, and making use of internal cognitive and linguistic mechanisms for so doing (see Chapter 10, this volume). Within this broad theoretical family, the view of the language learner varies substantially according to the approach adopted, from an individual making use of psycholinguistic tools to assist learning, to the learner as a primarily social being negotiating new identities and power relationships.

Interactional/sociolinguistic/sociocultural approaches and research agendas/findings

Given that the main findings reported above were primarily the result of the formal and cognitive agendas which dominated the field until relatively recently, it might seem unfair to evaluate this theoretical family in terms of its contribution to research agendas it does not share. In fact, one of the main contributions of sociolinguistic and sociocultural approaches has been to question the validity of these agendas. If second language acquisition is primarily a social process, the focus on purely linguistic and cognitive mechanisms might be misplaced.

Bearing this in mind, this theoretical family has tended to concentrate on giving answers to research questions 6 and 7:

Question 6. How does input/interaction/output facilitate, shape and/or accelerate the development of either question 1 or question 3 above (formal system and/or processing)?

Question 7. How does the environment/social context facilitate, shape and/or accelerate the development of either question 1 or question 3 above (formal system and/or processing)?

In addressing (aspects of) these questions, researchers within this broad theoretical family have contributed to a better understanding of some of the findings outlined previously. For example, sociolinguists interested in the L2 acquisition of sociolinguistic and pragmatic rules have contributed to our understanding of developmental sequences by documenting the development of sociopragmatic rules in L2 learners over time (Dewaele 2004a; Regan, Howard and Lemée 2009). And although sociocultural theorists, conversation analysts or interactionists, because of their focus on investigating language use in action, have had little to say about developmental routes over extended periods of time, or about the formal rules underlying L2 productions, they have provided detailed descriptions of situated learning taking place, thus giving us insights into the kinds of learner activities, contexts and interactions which might facilitate and speed up the learning process (Aljaafreh and Lantolf 1994; Mackey and Polio 2009; Ohta 2001c; Pekarek Doehler and Ziegler 2007). The general sociocultural focus on language as a cultural tool means that some researchers in this tradition are very interested in the role of the L1 as a potential support for L2 interaction (e.g. in classroom code switching). Some sociolinguistic researchers have also concerned themselves with the total linguistic repertoire of the learner, e.g. exploring the role of codeswitching in interactional patterns and in identity construction (see e.g. Moore 2002). This is a very different perspective on the L1 from the concerns of other traditions with the extent of L1 influence on L2 linguistic form.

By investigating in great detail the kind of language use learners engage in, however, these approaches have broadened the traditional SLA research agendas, bringing L2 use into the spotlight, and enabling us to understand better how the social context shapes the kinds of interactions learners engage in. This of course can shed some light on the types of interactions and social contexts which are most facilitative or inhibitive of L2 learning, thereby contributing to our understanding of why the rate and outcome of the SLA process are so variable, but this is not the primary goal of many of these approaches. In fact, researchers within this paradigm often claim that the field has been asking the wrong kind of questions, and that the focus should shift to understanding the social factors at play in the co-construction of language and identity rather than concentrating on the learning of the formal properties of languages over time, as has been the tendency to date (Block 2003; Firth and Wagner 2007; Lantolf 2011; Lantolf and Thorne 2006).

Conclusion: contribution of interactionist/sociolinguistic/sociocultural approaches to SLA theory building

This theoretical family has given rise to a wealth of very detailed investigations of learner interaction, paying attention to factors going beyond the characteristics of the conversation itself such as the wider social processes at play and learners' own social contribution to the learning context. These detailed descriptions of interactions have given insightful glimpses of learning in action, and these approaches have been of particular interest to educationalists, who have welcomed Vygotskyan concepts such as the "zone of proximal development," scaffolding or activity theory, which lend themselves well to detailed analyses of classroom practices.

In terms of theory building, the sociocultural shift of emphasis from seeing L2 learning primarily in terms of the individual having to master a discrete linguistic system to a much more holistic view of complex social processes which cannot easily be analyzed in terms of dissociated discrete elements has contributed to a considerable broadening of the SLA research agenda, including a rethinking of its core traditional values.

3.4 Conclusion

This chapter has provided a simple map of the main theoretical families currently dominant in second language theorizing, and of their contribution to an overall multifaceted SLA research agenda. The purpose has not been to draw a comprehensive picture of the multitude of theoretical approaches used in the field, but rather to outline why a single SLA theory is currently beyond our reach, and to illustrate where all the different and sometimes conflicting approaches originate from. In doing so, attention has also been paid to drawing out the different conceptual and methodological tools behind the main theoretical families in order to evaluate them. This agenda has meant oversimplification in places, and many omissions, some undoubtedly unfortunate. Specific theories have been used to illustrate the different approaches and how these have tackled the SLA research agenda, rather than to suggest that their contribution is somewhat superior to others. The various theoretical families have all enriched our understanding of specific aspects of this complex phenomenon, and they complement each other by focusing on different theoretical and empirical agendas. Following this overview, later chapters in this book provide in-depth treatment and rich exemplification showing the ongoing diversity of the field and active development within all of the theoretical families sketched here.