21 Individual Differences in Second Language Learning

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21.1 Introduction

Learners vary enormously in how successful they are in learning a language. This is true for both first language (L1) and second language (L2) acquisition, although there is an important difference. In the case of L1 acquisition, children vary in their rate of acquisition but all, except in cases of severe environmental deprivation, achieve full competence in their mother tongue; in the case of L2 acquisition (SLA), learners vary not only in the speed of acquisition but also in their ultimate level of achievement, with a few achieving native-like competence and others stopping far short. How can we explain these differences in achievement? Broadly speaking, three different sets of explanatory factors have been identified; social, cognitive, and affective. This chapter, however, will consider only those factors that lie inside the learner – the cognitive and affective factors – and will focus on L2 learning.

Individual difference research has a considerable history in applied linguistics. Horwitz (2000a), reviewing publications in *The Modern Language Journal* from the 1920s up to the end of the 1970s, documents how interest in L2 learners' differences evolved over the decades. She notes a marked change in the labels used to refer to individual differences: "The terms *good and bad, intelligent and dull, motivated and unmotivated* have given way to a myriad of new terms such as *integratively and instrumentally motivated, anxious and comfortable, field independent and field sensitive, auditory and visual*" (p. 532, original emphasis). Horwitz characterizes these changes as evolutionary rather than revolutionary, but they seem to reflect a radical shift in the way learners are viewed; whereas earlier they were seen in absolute terms, as either innately endowed with or lacking in language learning skills, in more recent research they are characterized in more relative terms, as possessing different kinds of abilities and predispositions that influence learning in complex ways.

This change of perspective over the years reflects a development in the role of individual difference research in applied linguistics. In earlier periods, the primary concern was to provide a basis for selecting which learners should be

chosen to receive foreign language instruction. To this end, the main purpose of individual difference research was to *predict* which learners would succeed. This led ultimately to the development of tests of language aptitude such as the Modern Language Aptitude Battery (Carroll & Sapon, 1959). More recent research on motivation or on learning strategies, however, has sought to *explain* why some learners succeed more than others and has been seen as complementary to mainstream research in SLA. This later research continues to have an "applied" side, however. It has been used to identify the characteristics of "good language learners" as a basis for learner training (i.e., providing guidance in how best to learn). It has also served as a basis for aptitude–treatment interactions (i.e., matching learners to different types of instruction so as to maximize learning).

Interest in individual differences has grown since the 1970s to the point where it has become a major area of enquiry in SLA. This interest is reflected in numerous articles published in all the major SLA journals (in particular *Language Learning* and *The Modern Language Journal*), in several major surveys of individual differences (e.g., Skehan, 1991), and, increasingly, in full-length books devoted to specific factors responsible for individual differences (e.g., Dörnyei's 2001 book on motivation). Research into individual differences has taken place alongside and separate from mainstream SLA research, where the primary concern has been the processes responsible for L2 acquisition (e.g., noticing, chunking, restructuring). One reason for this is that universalist and differential approaches have distinct agendas, the former seeking to explain the mechanisms responsible for the commonalities observed in the process of language learning (e.g., the "natural" order and sequence of L2 acquisition), the latter directed at examining how and why learners differ. This separation, however, is unfortunate, as it results in a piecemeal approach to understanding L2 acquisition that inhibits the development of an integrated theory to account for how and to what extent learners allocate resources to different learning mechanisms. As Breen (2001) emphasizes, an essential feature of psycholinguistic processes is that they are *selective*. The task facing researchers, therefore, must be to identify not just what the psycholinguistic processes involved in L2 acquisition are or what motivates individual learner selectivity, but how selectivity and processes interact in the performance of different tasks.

This review will be in two main parts. The first part will discuss the methods that have been used to investigate individual differences, in particular the instruments for measuring the various factors. The second part will consider a number of factors that have been found to contribute to individual differences in learning and will provide a review of the main research findings relating to each factor.

21.2 Methodology and Instrumentation

Research into individual difference has relied predominantly on quantitative methods. The favored method is a survey questionnaire consisting of Likert

scale items that require learners to self-report on some aspect of their language learning. In some cases, such as the Group Embedded Figures Test (GEFT), established tests from the field of psychology have been used. The data obtained from questionnaires and tests are submitted to correlational analysis (e.g., Pearson Product Moment correlation, exploratory and confirmatory factor analysis, or multiple regression), the purpose of which is to identify relationships among individual difference variables and/or the relationship between a specific factor (such as motivation) and a measure of L2 achievement or proficiency.

In such research, much depends on the validity and reliability of the questionnaires and tests used. Do they measure what they purport to measure? Do they do so consistently? As a result, considerable effort has gone into the development of questionnaires and there now exist a number of well-established instruments, which are shown in Table 21.1. It should be noted, however, that doubts about these instruments, especially about their validity, continue to be voiced. Researchers who view learning from a social-constructionist perspective have argued that how learners approach and respond to learning an L2 can only be considered in relation to the specific learning activities they engage in and that methods that require them to report general tendencies are inherently flawed. This problem is evident when learners are asked to agree/disagree with statements like "I ask questions in English," which they will find difficult to respond to because the behavior in question varies dynamically according to context. The construct validity of some of the most popular instruments has also been challenged. For example, there is controversy over what the GEFT measures. Does it measure the extent to which learners are field independent (i.e., the perceptual ability to distinguish the details that comprise a whole), or is it simply a measure of general intelligence, as Griffiths and Sheen (1992) claim? Further, the statistical analysis of learners' responses to questionnaires does not always support the theoretical constructs that underlie their design. For example, the Strategy Inventory for Language Learning (SILL) (Oxford, 1990), from which the statement above comes, was designed to measure six categories of learning strategies comprising two major groups (direct and indirect), but factor analytic studies have consistently failed to demonstrate either the two groups or the specific categories (Robson & Midorikawa, 2001). Another problem is that different instruments for measuring the same factor exist (reflecting attempts to solve the validity problems referred to above), making it difficult to compare results across studies. A final problem lies in the limitation of correlational analysis; this can only demonstrate the relationship between variables, not causality. Thus, if a relationship is found between a specific factor, such as motivation, and language achievement there is no easy way of telling what the independent and dependent variables are, although some statistical treatments (such as path analysis) purport to overcome this difficulty. Despite these problems, researchers have continued to use the instruments in question.

Table 21.1 Frequently used instruments in researching individual difference factors in SLA

Individual difference factor	Research instrument	Brief description
Language aptitude	Modern Language Aptitude Test (MLAT) (Carroll and Sapon, 1959)	A battery of tests measuring phonemic coding ability, grammatical sensitivity and rote learning ability.
Learning style	Group Embedded Figures Test (Witkin et al., 1971)	A test requiring learners to identify geometrical shapes embedded in larger figures.
	Perceptual Learning Style Preference Questionnaire (Reid, 1987)	Questionnaire measuring four perceptual learning styles (visual, auditory, kinesthetic, tactile) and two social styles (group and individual).
Motivation	Attitude Motivation Index (Gardner, 1985)	A questionnaire designed to measure learner attitudes, orientations, desire to learn the L2 and motivational intensity.
Anxiety	Foreign Language Classroom Anxiety Scale (Horwitz, Horwitz & Cope, 1986)	A questionnaire measuring the degree and sources of learners' classroom language anxiety.
	Input Anxiety Scale, Processing Anxiety Scale and Output Anxiety Scale (MacIntyre & Gardner, 1994)	Three short questionnaires designed to investigate learners' anxiety at three levels of processing.
Personality	Eysenck Personality Inventory (Eysenck & Eysenck, 1964)	A psychological questionnaire measuring different personality traits, including extraversion/introversion.
Learner beliefs	Beliefs about Language Learning Inventory (Horwitz, 1987a)	Questionnaire investigating five areas of learner beliefs; language aptitude, difficulty of language learning, the nature of language learning, effective learning and communication strategies, and motivation.
Learning strategies	The Strategy Inventory for Language Learning (Oxford, 1990)	Questionnaire that exists in several forms (e.g., for learners of English as a second language (ESL) and for English speaking learners of foreign languages) measuring direct and indirect learning strategies.

The over-reliance on quantitative methods in individual difference research is unfortunate. In an interesting discussion of research methods, Spolsky (2000) reports that Wallace Lambert, who originated the use of motivation questionnaires in the 1950s, once suggested that "the best way to learn about someone's integrative motivation was probably to sit quietly and chat with him over a bottle of wine for an evening" (p. 160). The limitations of quantitative approaches have led some researchers to dismiss them and to argue in favor of the exclusive use of qualitative methods (see, for example, Spielman and Radnofsky's (2001) peremptory dismissal of the use of questionnaires for examining the role of anxiety in L2 learning). A better approach, however, as Spolsky suggests, is to use quantitative methods alongside such qualitative approaches as interviews, learner diaries, and learner autobiographical narratives. A hybrid approach is likely to provide a much richer and more personalized account of the factors responsible for learner difference. A good example of such research can be found in Schumann's (1997) account of how the neurobiological structure of the brain influences the learner's affective response to learning an L2. However, there are few such examples in the published literature on individual differences, doubtlessly because this kind of research is very time consuming.

21.3 Individual Difference Factors: A Review of the Research

What are the factors responsible for individual differences in L2 learning? A brief study of the literature affords a daunting array of factors. However, it is possible to see the wood for the trees. There are a number of key factors that figure repeatedly. In Table 21.2 these are grouped according to whether they constitute "abilities" (i.e., cognitive capabilities for language learning), "propensities" (i.e., cognitive and affective qualities involving preparedness or orientation to language learning), "learner cognitions about L2 learning" (i.e., conceptions and beliefs about L2 learning), or "learner actions" (i.e., learning strategies).

Readers will note that "age" is not included in Table 21.2. This might seem surprising given that the age when a learner starts learning an L2 has been found to impact strongly on a learner's ultimate level of achievement. However, "age" itself does not belong to any of the four categories; rather, it potentially affects learners' abilities, propensities, cognitions, and actions (as do other factors such as previous learning experiences and the learning situation). Possibly, too, age affects the actual psycholinguistic processes involved in learning, with younger learners able to access a "language acquisition device" and older learners reliant on general cognitive learning strategies – the Fundamental Difference Hypothesis (Bley-Vroman, 1989). This, however, remains an area of controversy in SLA, and in any case does not account for how

Table 21.2 Factors responsible for individual differences in L2 learning

Category	Factors
1 Abilities	(a) Intelligence (b) Language aptitude (c) Memory
2 Propensities	(a) Learning style (b) Motivation (c) Anxiety (d) Personality (e) Willingness to communicate
3 Learner cognitions about L2 learning	(a) Learner beliefs
4 Learner actions	(a) Learning strategies

individual differences arise in language learning before or after any supposed "critical period." The question of the role played by age in L2 acquisition warrants an entirely separate treatment and will not be considered here.

21.3.1 Abilities for language learning

Table 21.2 identifies three cognitive abilities hypothesized to be involved in L2 learning – intelligence, language aptitude, and memory. These are clearly related. For example, all tests of language aptitude have included a measure of memory for words, normally in the form of a paired-associates test. Links between the analytic ability involved in identifying grammatical patterns and intelligence have also been identified. Skehan (1990) administered language aptitude tests to the children in the Bristol Language Project after they had reached secondary school. He found that a range of aptitude measures, especially that measuring analytic language learning ability, were significantly correlated with L1 measures (in particular, measures of the auxiliary system and pronominalization). Language aptitude was also strongly related to measures of foreign language ability. Interestingly, however, there was no relationship between L1 measures based on the children's speech and any of the L2 measures. Skehan explained these results by proposing that the aptitude tests measured both an underlying language learning capacity, which was similar in L1 and L2 learning, and also an ability to handle decontextualized material, such as that found in the formal language tests he used to measure L2 learning. The latter is the same ability tapped by intelligence tests. Sasaki (1996), in a study that factor-analyzed the scores of Japanese learners of English on a language aptitude test and a test of verbal intelligence, reported

three first-order factors, reflecting different aspects of language aptitude, but a single second-order factor, on which measures of both language aptitude and verbal intelligence loaded. These studies suggest that language aptitude, notably the ability to analyze linguistic structure (but less so ability to discriminate sounds and memory), and intelligence are related, but also that there are other aspects of language aptitude that are distinct.

Language aptitude is one of the "big two" individual difference factors (the other being motivation). Research based on tests such as the MLAT has revealed consistent correlations with language achievement in the order of 0.40 or higher. For example, Sparks, Ganschow, and Patton (1995) found that language aptitude measured by the MLAT was one of the two best predictors of the grades achieved by school foreign language learners, the other being native language (English) grades.

Carroll's early research into language aptitude identified four aspects of language aptitude, although the test he and Sapon designed (MLAT) measured only three of these (i.e., there was no measure of inductive learning ability). The four aspects are:

1 phonemic coding ability (i.e., the ability to code foreign sounds in a way that they can be remembered later),
2 grammatical sensitivity (i.e., the ability to recognize the grammatical functions of words in sentences),
3 inductive learning ability (i.e., the ability to identify patterns of correspondence and relationships involving form and meaning),
4 rote learning ability (i.e., the ability to form and remember associations between stimuli).

Although this model of language aptitude was designed at a time when the prevailing instructional approach was audiolingual in nature, it has withstood the test of time remarkably well, the MLAT (or tests based on a very similar model of language aptitude) continuing to be the preferred instrument in current research. Carroll (1991) announced that he was "somewhat skeptical about the possibilities for greatly improving foreign language aptitude predictions beyond their present levels" (p. 27). More recently, however, Skehan (2002) has suggested how a model of L2 acquisition might be used to identify additional aptitudinal aspects, in particular the ability to attend to form in the input and to access language material from memory.

Evidence for the construct validity of the MLAT comes from a number of studies that have shown aptitude scores are related to both formal, test-like measures of L2 proficiency and to more informal measures based on communicative performance. Horwitz (1987b), for example, found that MLAT scores correlated significantly with scores on a discrete-point grammar test and with scores derived from relatively spontaneous oral production. Thus, Krashen's (1981) claim that language aptitude would only be related to "learning" and not to "acquisition" has been shown to be unfounded. Further counter

evidence can be found in a number of recent experimental studies that have examined the relationship between language aptitude and implicit/explicit learning. In these studies, implicit learning was operationalized as exposure to sentences exemplifying a specific structure with the instruction to memorize the sentences, while explicit learning involved asking learners to actively look for the rule or, in some cases, to process the sentences after they have received an explanation of the rule. Studies (e.g., Robinson, 1997) indicate that language aptitude is implicated in both types of learning. It could be argued, however, that the implicit learning condition in these studies does not correspond to the natural environment in which Krashen argued "acquisition" takes place. The "incidental" condition in Robinson's (1997) study, where the learners were instructed to just try to understand the sentences they were exposed to, is closer perhaps to a natural learning situation. Interestingly, correlations between MLAT and the learning that occurred in this condition were much lower and statistically non-significant. A reasonable interpretation is that language aptitude is implicated in L2 learning when learners are paying attention to form but not when they are focused exclusively on meaning. It is also possible that different aspects of language aptitude are involved in informal and formal learning. For example, if, as Grigorenko, Sternberg, and Ehrman (2000) suggest, intelligence is a factor in explicit learning, we might expect measures of linguistic-analytic ability to be important here, while the phonemic-coding and memory abilities may play a bigger role in informal learning.

These more recent studies demonstrate how the study of language aptitude is being incorporated into some of the current concerns of SLA. Robinson (2001) argues for a research program that systematically examines the interactions between task demands, language aptitude and language learning. He suggests that "the information processing demands of tasks draw differentially on cognitive abilities" (p. 386) and that we need to discover how this affects learning outcomes. There have, in fact, been surprisingly few studies that have examined language aptitude in relation to specific pedagogical tasks as opposed to general achievement. An exception is Nagata, Aline, and Ellis (1999) who examined learners' performance on a one-way information gap task involving listening to and carrying out instructions that contained new L2 words – a task directed at incidental acquisition. They reported moderate but statistically significant correlations between measures of sound-symbol association, grammatical-semantic sensitivity and memory for words on the one hand, and comprehension of the instructions on the other. In contrast, only memory for words was systematically related to post-test measures of the acquisition of the new words. This study suggests that different aspects of language aptitude may be implicated in different kinds of language processing. It also reinforces the point made above, namely, that language aptitude is involved in incidental acquisition but only when the task requires attention to the target forms in question.

There have been proposals for new models of language aptitude. Skehan (1998) suggests that Carrol's original four-part model can be collapsed into a

three-part one by incorporating grammatical sensitivity and inductive language learning ability into a single "language analytic ability." He argues that these three aptitudes operate differently during the course of adult language learning. Language analytic ability, which is closely related to general intelligence, is involved throughout, while phonemic-coding ability plays a major role only in the early stages. Memory ability is involved in all stages, but in the case of exceptional learners it is enhanced allowing them to achieve a more or less native-like level of proficiency. In a later publication Skehan (2002) suggests the need to relate different components of aptitude to four macrostages in language acquisition; noticing (e.g., phonemic coding and working memory), patterning (e.g., language analytic ability), controlling (memory retrieval processes), and lexicalizing (e.g., memory abilities).

Grigorenko, Sternberg, and Ehrman (2000) go further in offering an entirely new model of language aptitude based on an analysis of "acquisition processes." However, their test appears to perform very similarly to earlier tests. When factor-analyzed, scores loaded on two factors – an intelligence related factor and a language-specific factor, with considerable overlap between the two, while correlations with measures of language learning were of the same order as those reported for the MLAT. However, this test does afford the possibility of achieving a closer match between specific aptitudes and specific psycholinguistic processes and, as such, may provide a useful tool for implementing the research program Robinson (2001) advocates.

Finally, Sternberg (2002) suggests that the theory of "successful intelligence" he has developed through general research on native-speaking students may also be applicable to L2 learning. This theory distinguishes three types of aptitude: analytical intelligence (i.e., the ability to analyze, compare, and evaluate), creative intelligence (i.e., the ability to produce novel solutions to problems), and practical intelligence (i.e., the capacity to adapt to, to shape, and to select environments suited to one's abilities). Sternberg argues that tests have generally targeted analytic and, to a lesser extent, creative intelligence, largely because teaching methods have typically emphasized these. He argues that instruction needs to be matched to the particular type of ability a learner is strong in and emphasizes that practical ability, typically neglected by both testers and teachers, is trainable.

Thus, there has been a notable reawakening of interest in language aptitude in recent years. Some researchers, such as Skehan and Grigorenko, have been concerned to develop new models based on theories of L2 acquisition or of psycholinguistic processing. Other researchers, such as Sternberg, have argued for a more differentiated view of aptitude that recognizes the importance of tacit as well as analytic knowledge.

In contrast to the extensive study of language aptitude there has been a paucity of research that has been directed specifically at memory abilities, although it is not difficult to see how memory might influence acquisition. Individual differences in memory are likely to affect learners' ability to notice and also their ability to rehearse what they have noticed. The results of Nagata

et al.'s study reported above lend support to this claim. Miyake and Friedman (1998) found that a measure of working memory (the English Listening Span Test) predicted syntactic comprehension that required the Japanese subjects to draw pictures to show the thematic roles of nouns in sentences. They argue that their study demonstrates that learners with a larger working memory are better placed to take advantage of word order information because they can hold more information in their minds. Mackey et al. (2002) utilized tests of both Phonological Short Term Memory (STM) and Verbal Working Memory (using a test of listening span). They found that listeners who reported less noticing of question forms as they performed tasks tended to have low working memory capacities while those that reported more noticing tended to have high capacities. However, the learners' developmental stage was also a factor; less-advanced learners with high Phonological STM noticed more than more advanced learners with similar levels of Phonological STM. Both Miyake and Friedman and Mackey et al. also note, not surprisingly, that working memory scores correlate with measures of language aptitude. A key issue, therefore, is to what extent it is to be considered a separate individual difference factor.

To sum up, there is now ample evidence that cognitive abilities, as measured in particular by language aptitude tests, can account for a substantial proportion of the variance in achievement scores in L2 learners. More interestingly, there is growing evidence that they are implicated differentially in the pscyholinguistic processes involved in learning under incidental, implicit, and explicit learning conditions. Future research is likely to be directed at identifying which abilities are related to which processes. A question of considerable interest is whether learners with distinct language aptitude profiles (e.g., strong in language-analytic abilities or strong in memory and practical ability) can achieve success in different ways, as Skehan (1998) and Sternberg (2002) propose.

21.3.2 Propensities for language learning

There are major differences between "abilities" and "propensities." Whereas the former are, to a considerable extent, a matter of innate endowment and relatively fixed, the latter involve personal preference and consequently are more fluid. Also, propensities such as learning style allow for the possibility of a continuum, with success in learning achievable in more than one way.

21.3.2.1 Learning style

Learning style has both a cognitive and an affective dimension and thus reflects "the totality of psychological functioning" (Willing, 1987); it refers to an individual's preferred way of processing information and of dealing with other people. There are a large number of psychological models of learning style but the distinction that has attracted the greatest attention in SLA is that between field dependence and field independence.

Field-dependent people see things "holistically" and thus have difficulty in identifying the parts that make up a whole. However, they are people-

oriented and find social interaction easy and pleasurable. Field-independent people, in contrast, see things more "analytically," by distinguishing the parts that make up a whole, but are more individualistic and less inclined to social interaction. Two hypotheses have been advanced regarding L2 learning. The first is that field-dependent learners will do better in informal language learning because of their greater interpersonal skills. The second is that field-independent learners will be advantaged in more formal learning because of their enhanced analytic skills. Early studies, based on the GEFT (see Table 21.1), produced no clear support for the first hypothesis and only weak support for the second. They showed that measures of field independence (there being no separate measure of field dependence) correlated weakly, often non-significantly, with measures of communicative language use and performance on discrete-item tests. Also, as we have already noted, the theoretical construct itself came under attack.

The dismissal of field dependence/independence may be premature, however. The failure of the earlier research to find any relationship between GEFT scores and measures of L2 proficiency/performance may have arisen because of methodological problems in the design of the studies, in particular with how communicative language use was measured. Johnson, Prior, and Artuso (2000) argue that in many of the earlier studies the measurement of communicative ability was confounded with formal aspects of language use. They report a study in which significant negative correlations (in the order of –0.50) were found between GEFT scores and measures derived from conversations with an interviewer and some lower but still significant negative correlations (–0.30) between GEFT scores and teachers' ratings of the learners' pragmatic competence. The negative correlations indicate that learners who were field dependent, and thus scored poorly on the GEFT, achieved higher scores in communicative language use, as predicted by the theory. Interestingly, they found near zero correlations between GEFT scores and measures of academic language proficiency.

Other researchers have made use of other models of learning style. These typically involve more than a single dimension of style. Willing (1987), in a factor-analytic study of ESL learners' responses to a questionnaire, distinguished two intersecting dimensions of style: holistic versus analytic (similar to the field dependence/independence distinction) and active versus passive. This realized four basic learning styles, which Willing characterized as "concrete," "analytical," "communicative," and "authority-oriented." Reid (1987) examined the learning styles of ESL and native speakers of English in the US, again by means of a specially designed questionnaire. She distinguished four perceptual learning modalities (visual, auditory, kinesthetic, and tactile) and two social styles (group and individual).

Attempts have also been made to relate learning style to a model of information processing. Skehan (1998) shows that the various styles identified by different researchers can be slotted into a framework based on three stages of acquisition (input, central processing, and output/retrieval) and on whether

the focus is information processing or knowledge representation. This indicates how different models of learning style give emphasis to different aspects of language acquisition. Johnson, Prior, and Artuso (2000) draw on a theory of selective attention to explain why field-dependent learners achieve higher levels of communicative proficiency. They suggest that field-dependent learners are not so well equipped with "control executives" responsible for the allocation of mental capacities such as attention as are field-independent people. In tasks that have no distracting aspects, such as the conversational tasks in their study, field-dependent learners do better. In other words, field-dependent learners are adept at the kind of holistic learning of chunks that aids communicative fluency.

There are some fairly obvious ways in which language pedagogy can benefit from an understanding of learning style. One is through attempts to match the kind of instructional activities to learners' preferred learning styles. Another is through encouraging learners to identify their own natural way of learning to ensure that they can learn efficiently. A third application is to help learners to see the advantages of learning styles other than the one they incline to and thereby to become more flexible in the way they learn.

21.3.2.2 Motivation

Motivation is more of an affective than a cognitive factor and, even more so than learning style, is adaptable. It is the second of the "big two" individual factors, accounting for only slightly less of the variance in learners' achievement scores than language aptitude. Not surprisingly teachers recognize the importance of motivation, both with regard to the motivation that students bring to the language classroom (extrinsic motivation) and the motivation that is generated inside the classroom through the choice of instructional activities (intrinsic motivation). Similarly, motivation has attracted increasing attention from researchers, reflected in a growing number of theoretical models of L2 motivation and in consequent research studies. In the last decade, motivation has attracted more attention from teachers and researchers alike than any other individual difference factor, a reflection not just of its importance for understanding language learning but also of the potential for maximizing its success.

The serious study of motivation in language learning began with Lambert and Gardner's work on the social psychology of language learning in the bilingual context of Canada. The theory they developed and the research it spawned is described fully in Gardner (1985). Crucial to understanding the sociopsychological perspective is the distinction between "orientation" and "motivation." "Orientation" refers to the long-range goals that learners have for learning a language. Two broad types of orientation were distinguished: an "integrative orientation," involving a wish to develop an understanding of and possibly become part of the target language culture, and an "instrumental orientation," consisting of a felt need to learn the target language for some functional purpose (e.g., to obtain a job). "Motivation" was defined primarily

in terms of "motivational intensity" (i.e., the effort learners were prepared to make to learn a language and their persistence in learning). Thus learners might demonstrate particular orientations but be weakly and strongly motivated to achieve their goals. Lambert and Gardner's early work in Canada suggested that integrative motivation correlated most strongly with measures of L2 achievement but subsequent research has shown that in some teaching contexts (e.g., the Philippines or India) an instrumental motivation was more important. In his later publications, Gardner acknowledges that both motivations are important and that they can co-exist in the same learner population.

Lambert and Gardner's work continues to be influential. However, there is now general acceptance that orientations cannot be narrowly defined as either "integrative" or "instrumental." Further research in Canada has shown that francophone learners display a number of different orientations. Kruidenier and Clement (1986), for example, found a number of different orientations – travel, friendship, prestige, and knowledge. Moreover, it is quite likely that learners' orientations change over time, reflecting both shifting societal patterns and technological developments. Thus, in a replication of the Kruidenier and Clement study, using a sample drawn from the same population, Belmechri and Hummel (1998) found some of the same orientations (e.g., travel and friendship) but also some new ones (e.g., self-understanding and instrumental). Other studies have demonstrated that some learners appear to be characterized by a lack of any orientation at the beginning of a prescribed course of study but may develop orientations during it. In short, learners' orientations are varied, depending on the situational and temporal context, and also dynamic. What may be important is not what orientation this or that learner has but rather the extent to which they are prepared to pursue their learning goal (i.e., motivational intensity and perseverance).

During the 1990s the sociopsychological perspective on motivation was challenged for a number of reasons. First, it was seen as failing to acknowledge the resultative dimension of motivation. Gardner viewed motivation as causative (i.e., it led to L2 achievement), but a number of studies indicated that, in some learners, motivation resulted from success in learning. Second, related to this point, it was seen as presenting motivation in too static a way, failing to acknowledge that motivation was dynamic, shifting all the time as a result of learners' learning experiences and, no doubt, countless other purely personal factors. Third, and from a pedagogic perspective most important, the sociopsychological perspective was seen as too deterministic – motivation was treated as something that learners brought to the task of learning an L2 that determined their success. It did not allow for the possibility that learners could develop intrinsic interest in the process of their attempts to learn. For this reason, in particular, the theory was seen as lacking in pedagogic relevance (Crookes & Schmidt, 1991).

Subsequent developments in the study of motivation have attempted to address these criticisms. Reflecting what is a general trend in applied linguistics,

researchers have increasingly gone beyond the confines of SLA itself to consider theories of motivation from general psychology. This has undoubtedly enriched our understanding of the role that motivation plays in language learning but has also led to a bewildering array of theoretical positions. Dörnyei (2001) identifies ten "contemporary motivation theories" of potential relevance to L2 learning, noting that "the list is far from complete" (p. 9). Dörnyei's point in presenting this plethora of theories is that classrooms are such complex places that no single motivational principle can account for what goes on in them. Thus "in order to understand why students behave as they do, we need a detailed and most likely eclectic construct that represents multiple perspectives" (p. 13). There is a grave danger, however, that the construct so arrived at will lack both clarity and coherence. Little is to be gained by simply listing motivational principles.

With regard to recent developments in theories of L2 motivation, two proposals are of particular interest. The first concerns an attempt to build a theory that acknowledges the dynamic, multidimensional nature of motivation. Dörnyei's (2001) process model of learning motivation for the L2 classroom distinguishes a "preactional stage" involving "choice motivation," which relates closely to the idea of orientation; an "actional stage" involving "executive motivation," which concerns the effort the learner is prepared to invest to achieve the overall goal and is heavily influenced by the quality of the learning experience; and a "postactional stage" involving "motivational retrospection," where the learner forms attributions out of the learning experience which influence the preparedness to continue. Such a model is able to account for how motivation changes over time and, as such, is far superior to the static models of motivation that have dominated research to date.

The second development concerns the important distinction between extrinsic and intrinsic motivation. Noels et al. (2000) provide a detailed model for these two types of motivation. They define extrinsically motivated behaviors as "those actions carried out to achieve some instrumental end" (p. 61) and distinguish three types: (1) external regulation, which involves behavior motivated by sources external to the learner such as tangible benefits and costs; (2) introjected regulation, which involves behavior that results from some kind of pressure that individuals have incorporated into the self; and (3) identified regulation, consisting of behavior that stems from personally relevant reasons. Intrinsic motivation is defined as "motivation to engage in an activity because it is enjoyable and satisfying to do so" (p. 61). Again, three types are distinguished; (1) knowledge (i.e., the motivation derived from exploring new ideas and knowledge), (2) accomplishment (i.e., the pleasant sensations aroused by trying to achieve a task or goal), and (3) stimulation (i.e., the fun and excitement generated by actually performing a task). Noels et al. also consider amotivation – the absence of any motivation to learn. A factor-analytic study based on responses to a questionnaire by anglophone learners of L2 French in Canada largely confirmed this model of motivation, clearly distinguishing the extrinsic and intrinsic motivations. As expected, amotivation was negatively correlated

with measures of perceived competence and intention to continue study. Interestingly, the measures of intrinsic motivation were more strongly correlated with the criterion measures than the measures of extrinsic motivation. Noel et al. interpret the results in terms of self-determination theory, arguing that the more self-determined a learner's motivation is, the greater the achievement. This study, then, bears out the general claim that intrinsic motivation contributes strongly to L2 learning.

Both of these developments in motivational theory hold out promise for language pedagogy. Whereas it was difficult to see how teachers could have much effect on their students' motivational orientations, it is much easier to envisage them influencing their "executive motivation" by providing the conditions that promote intrinsic motivation. But how exactly are they to achieve this? One of the most promising recent advances in the study of motivation from an applied perspective is the attention being paid to how teachers can motivate their students. Drawing on this research (and perhaps even more so on his common sense), Dörnyei (2001) proposes 35 strategies for the language classroom. These are divided into strategies for developing the basic motivational conditions (e.g., "create a pleasant and supportive atmosphere in the classroom"), for generating initial motivation (e.g., "increase the students' expectancy of success in particular tasks and in learning in general"), for maintaining and protecting motivation (e.g., "make learning stimulating and enjoyable for the learners by enlisting them as active task participants"), and for encouraging positive self-evaluation (e.g., "offer rewards of a motivational nature"). Dörnyei emphasizes that although the efficacy of many of these strategies remains to be confirmed, "there is no doubt that student motivation can be consciously increased by using creative techniques" (p. 144).

21.3.2.3 Anxiety

Learners may have an inbuilt tendency to feel anxious (trait anxiety) but they may also, irrespective of their personalities, experience anxiety in particular contexts (situational anxiety). Foreign language classroom anxiety constitutes a particular kind of situational anxiety, one that is distinct from classroom anxiety in general because being required to use an L2 when proficiency is limited constitutes a threat to learners' "language-ego." Early work on foreign language classroom anxiety was carried out by means of analyzing learners' diary studies. It showed that classroom learners often did experience anxiety, especially when they felt themselves to be in competition with other learners (see Bailey, 1983). Later research has adopted a quantitative approach based on questionnaires. The Foreign Language Classroom Anxiety Scale (Horwitz, Horwitz, & Cope, 1986) focused on general foreign language classroom anxiety (emphasizing oral communication). It has been followed by additional questionnaires to measure L2 reading anxiety and L2 writing anxiety.

A number of studies have shown that anxiety, whether of the speaking, reading, or writing kind, is negatively related to L2 achievement. However, as

with motivation, a key issue is whether anxiety is the *cause* of poor achievement or the *result*. This issue has aroused considerable debate. Based on a series of studies of foreign language classroom learning, Sparks, Ganschow, and Javorsky (2000) promulgated the Linguistic Coding Difference Hypothesis, which claims that success in foreign language learning is primarily dependent on language aptitude and that students' anxiety about learning an L2 is a consequence of their learning difficulties. They dismiss the research carried out by Horwitz and her associates as "misguided." Not surprisingly, Horwitz (2000b) has reacted strongly to this dismissal of her work, arguing that while processing difficulties may cause anxiety in some learners, they are not the cause in all learners, as even advanced, successful learners have reported experiencing anxiety. The two positions, however, are not as contradictory as they appear to be. As the research on language aptitude shows, learners' abilities do affect achievement, which in turn can induce anxiety (in the case of failure or perceived difficulty), as Sparks et al. argue. However, the anxiety that learners experience can in turn impact on their future learning, often in a debilitating manner (as claimed by Horwitz). In short, what is needed is a dynamic model that shows how cognitive abilities and the propensity for anxiety interact in contributing to L2 achievement.

The dynamic aspect of L2 learning, not easily captured through questionnaires, is evident from the early diary studies and also from Spielman and Radnofsky's (2001) ethnographic study of the "tension" generated in a highly intensive residential French course for adults. This study shows that anxiety cannot be examined in purely quantitative terms (as more or less intense), but that it has a qualitative dimension as well. They propose that anxiety can be "euphoric/non-euphoric" (i.e., an event can be viewed as stressful but still viewed as positive or at least as not possessing negative characteristics) or dysphoric/non-dysphoric (i.e., a stressful event can be viewed negatively or as lacking in positive attributes). They document how the students they studied experienced euphoric tension as the product of their attempts to re-invent themselves in the target language. Dysphoric tension arose largely as a result of the mismatch between the instructional program and the students' own ideas about how best to learn and their need to be treated as adult, thinking people. The authors conclude that the causes of anxiety defy systematization, but suggest that a pedagogic program needs not just to avoid dysphoric tension but also maximize the benefits to learning from euphoric tension.

The study of anxiety can also be linked to a model of psycholinguistic processing. MacIntyre and Gardner (1994) propose that language anxiety occurs at each of the three principal stages of the language acquisition process. In the input stage, anxiety is a function of the learner's ability to handle unfamiliar external stimuli, in the central processing stage it is aroused when the learner attempts to store and organize input, and in the output stage, anxiety occurs as a result of the learner's attempts to retrieve previously learned material. In each stage, anxiety can inhibit the functioning of the key processes. MacIntyre

and Gardner developed a questionnaire, consisting of three separate scales, to investigate anxiety in relation to the three acquisitional stages. Onwuegbuzie, Bailey, and Daley (2000) conducted a study to investigate the psychometric properties of this questionnaire, reporting that it manifested high construct validity (i.e., a factor analysis found one specific factor for each of the three scales).

Anxiety, like motivation, is a learner factor that is amenable to pedagogic influence. However, it is probably far too simplistic to work on the assumption that less is better. As Spielman and Radnofsky's study shows, there is a positive side to anxiety. Pedagogic intervention needs to be directed at achieving the right level and type of anxiety. Relating anxiety to a processing model, as proposed by MacIntyre and Gardner, may ultimately help teachers to fine-tune their interventions by focusing on specific sources of anxiety.

21.3.2.4 Personality

Intuitively, personality is a key factor for explaining individual differences in L2 learning. Not surprisingly, therefore, a number of personality variables have been investigated, including anxiety (as a trait), risk-taking, tolerance of ambiguity, empathy, self-esteem, and inhibition (see Ellis, 1994, for a review of the earlier research). The aspect of personality that has received the greatest attention, however, is extraversion.

Generally speaking, extraversion is viewed as a factor having a positive effect on the development of L2 basic interpersonal skills, as extraverted learners are likely to interact more and more easily with other speakers of the L2. However, introspective learners may also experience an advantage: they may find it easier to study the L2 and thereby develop higher levels of cognitive academic language proficiency. In general, however, there has only been weak support for these hypotheses. Studies (e.g., Carrell, Prince, & Astika, 1996) have found only weak and generally non-significant correlations between personality and measures of L2 proficiency.

Two surveys of the research, however, suggest that extraverted learners may indeed have an advantage when the criterion measure is "natural communicative language." Strong (1983) reviewed the results of 12 studies that had investigated extraversion or similar traits and showed that, in 6 of the 8 studies that included a measure of spontaneous oral language, extraverted learners did better. Dewaele and Furnham (1999) reviewed some 30 studies of personality and concluded: "Extraverts were found to be generally more fluent than introverts in both the L1 and L2. They were not, however, necessarily more accurate in their L2, which reinforced the view that fluency and accuracy are separate dimensions in second language proficiency" (p. 532). They point out that an effect for extraversion only becomes evident on measures of oral communicative speech and that the strength of the relationship depends on the task – the more complex the task, the stronger the relationship. Drawing on Eysenck's theory of personality, they claim that extraverts are less easily distracted when operating from short-term memory, are better equipped

physiologically to resist stress, and thus have lower levels of anxiety, which allows for greater attentional selectivity. They suggest that extraverts and introverts may make different choices in the accuracy/speed tradeoff, especially when they are required to perform in the L2 under pressure. Again, then, we see an attempt to relate a factor responsible for individual differences to an information processing view of L2 acquisition.

21.3.2.5 Willingness to communicate

A propensity factor that has attracted recent attention is "willingness to communicate" (WTC), defined as "the intention to initiate communication, given a choice" (MacIntyre et al., 2001, p. 369). This factor is of obvious interest to communicative language teaching (CLT), which places a premium on learning through communicating; learners with a strong WTC are likely to benefit more from CLT while those who are not so willing may learn better from more traditional instructional approaches. Interestingly, McIntyre et al. report that WTC inside the classroom correlated strongly with WTC outside in anglophone learners of L2 French in Canada, demonstrating that WTC is a stable, trait-like factor. However, Dörnyei and Kormos (2000) found that Hungarian students' WTC in the classroom was influenced by their attitudes to the task. Strong, positive correlations were found between a measure of WTC and the amount of English produced while performing a communicative task in the case of learners who expressed positive attitudes to the task but near zero correlations in the case of learners with low task attitudes. It would seem then that learners' WTC depends in part on their personality and in part on their intrinsic motivation to perform specific classroom activities. Again, then, this suggests that teachers can enhance their students' WTC by ensuring they hold positive attitudes to the tasks they are asked to perform.

21.3.3 Learner cognitions

Since Horwitz's (1987a) original study of language learner beliefs, there has been a steadily growing body of research investigating the constructs that L2 learners hold about such matters as the difficulty of the language they are learning, their own aptitude for learning a L2, and the best way to learn (see, for example, the special issue of *System*, 23(2), Dickinson & Wenden, 1995). These constructs can be usefully divided into higher-order "conceptions" (epistemology) and lower-order "beliefs." Benson and Lor (1999) define "conceptions" as "concerned with what the learner thinks the objects and processes of learning are," whereas "beliefs" are "what the learner holds to be true about these objects and processes" (p. 464). A number of studies, including that of Benson and Lor who investigated Chinese undergraduate students at the University of Hong Kong, suggest that learners hold conceptions about what language is and how to learn and that these conceptions fall into two broad categories, which can be glossed as "quantitative/analytic" and "qualitative/experiential." These categories bear a close resemblance to the learning styles discussed above (e.g., the distinction

Table 21.3 Learners' cognitions about language and language learning

Conception	Nature of language	Nature of language learning
Quantitative/analytic	Learning an L2 is mostly a matter of learning grammar rules.	To understand the L2 it must be translated into my L1.
	In order to speak an L2 well, it is important to learn vocabulary.	Memorization is a good way for me to learn an L2.
Qualitative/experiential	Learning an L2 involves learning to listen and speak in the language.	It is okay to guess if you do not know a word.
	To learn a language you have to pay attention to the way it is used.	If I heard a foreigner of my age speaking the L2 I would go up to that person to practice speaking.

between field independent and field dependent). Table 21.3 indicates the kinds of beliefs related to each. It should be noted that these two general conceptions are not mutually exclusive; learners can and often do hold a mixed set of beliefs. A number of studies also suggest a third general conception – "self-efficacy/confidence" in language learning. This conception has more to do with how learners perceive their ability as language learners and their progress in relation to the particular context in which they are learning.

There is much to play for in the study of learner cognitions. Key issues (1) are the relationship between learners' beliefs about language learning and their beliefs about learning in general, (2) the extent to which beliefs are culturally determined, (3) the relationship between learner cognitions and success in learning an L2, and (4) the extent to which learners' beliefs change over time. Mori (1999) found that Japanese university students' general beliefs about learning and language learning beliefs were relatively unrelated. He explains the apparent autonomy of belief dimensions in terms of the differential influence of background and achievement factors. There is mixed evidence regarding the effect of cultural background on beliefs. In some areas, at least, there seems to be a surprising unanimity of beliefs. For example, Schulz (2001) found that Columbian learners of English in Columbia and American learners of foreign languages in the US both placed great store on explicit grammar study and error correction (evidence of a primarily quantitative/analytic conception). Interestingly, Schulz did find a difference between the learners' and teachers' beliefs, the teachers demonstrating much less confidence in the

efficacy of error correction than their students. In general, the relationship between stated beliefs and L2 achievement/proficiency appears to be a weak one. Mori reports that beliefs were generally not strongly related to measures of learning. Tanaka and Ellis (2003) report almost no relationship between Japanese learners' beliefs and their TOEFL scores, although they did find a statistically significant relationship between experiential beliefs and performance on an oral interview test. In this study, there was also no relationship between changes in beliefs after a three-month period of study abroad and gains in proficiency. However, it is perhaps not surprising that the relationship between beliefs and proficiency is so weak as the fact that learners hold a particular belief is no guarantee they will act on it; situational constraints or personal reasons may prevent them. Finally, as Tanaka and Ellis demonstrate, learners' beliefs are dynamic. The study abroad experience had a marked effect on the learners' beliefs, especially those relating to qualitative/experiential and self-efficacy/confidence conceptions.

The study of learner cognitions can serve as a basis for learner training/education. Teachers need to be aware of what their learners' beliefs are as this will enable to assess their readiness for autonomy. They also need to determine whether their beliefs are functional (i.e., being acted on) or dysfunctional. As Benson and Lor (1999) suggest, any attempt to modify learners' beliefs must tackle their underlying conceptions and take into account the specific learning context. In some situations, at least, teachers appear to play a significant role in the development of their students' conceptions about language learning (see Williams & Burden, 1999).

21.3.4 Learner actions

Learner actions define the approach learners adopt in learning an L2. This is influenced directly by learners' cognitions and their explicit beliefs about how best to learn. In particular, learners' actions are governed by self-efficacy beliefs as, quite naturally, they opt for an approach they feel comfortable with and able to implement, and avoid actions that they consider exceed their ability to perform. A number of studies have shown a fairly strong relationship between self-efficacy beliefs and learners' actions. Yang (1999), for example, found that Taiwanese university students' self-efficacy beliefs were strongly related to their reported use of learning strategies, especially functional practice strategies (i.e., the stronger their belief in their ability to learn English and the more positive their attributions of learning English, the greater their reported use of strategies).

Learner actions have been variously labeled – behaviors, tactics, techniques, and strategies. The term most commonly used is "learning strategies," defined as "behaviors or actions which learners use to make language learning more successful, self-directed and enjoyable" (Oxford, 1989). Learning strategies are generally viewed as problem-oriented (i.e., learners deploy them to overcome some learning problem) and conscious. Considerable effort has gone into

classifying the strategies that learners use. Oxford (1990), for example, distinguishes direct and indirect strategies and sub-categories of each. Chamot (1987) distinguishes three broad categories: (1) metacognitive, which involve an attempt to regulate learning through planning, monitoring and evaluating; (2) cognitive, which involve analysis, transformation, or synthesis of learning materials; and (3) social/affective, which concern ways in which learners interact with other users of the L2. These classifications are not without problems. As we have already noted, the taxonomies may not be supported by the results of factor analyses of learners' responses to questionnaires. In particular, the distinction between metacognitive and cognitive strategies seems problematic, as is widely acknowledged in the general educational literature on learning strategies.

The study of learning strategies has been motivated by both the wish to contribute to SLA theory by specifying the contribution that learners can make to L2 learning and by the applied purpose of helping learners to learn more efficiently by identifying strategies that "work" and training them to make use of these. Early research on learning strategies took the form of "good language learner" studies. Naiman et al. (1978), for example, carried out a double-barreled study of highly successful adult L2 learners and adolescent classroom learners of L2 French, using intensive face-to-face interviews with the former and classroom observation with the latter. Like other studies they found that interviewing learners was more effective than observation as many of the strategies learners use are mental and so not directly observable. Also like other studies, Naiman et al. found that successful language learners use a mixture of analytic strategies for attending to form and experiential strategies for realizing language as a means of communication. A comprehensive review of the "good language learner" studies can be found in Ellis (1994, pp. 546–50). Looking back at these studies, two points seem to stand out. The first is that they were considerably more illuminating and of practical value to the teaching profession than the survey-based, quantitative studies that dominate the scene today. The second is that what seems to characterize successful learners above all is the flexible use of learning strategies. Good language learners have a range of strategies at their disposal and select which strategies to use in accordance with both their long-term goals for learning the L2 and the particular task to hand. This suggests that generally little is to be gained by trying to identify and train learners in specific strategies.

There is, however, one advantage of the currently dominant survey approach to the study of learning strategies. It allows for a systematic investigation of the various factors that influence strategy use. These factors include learner age, stage of learning, gender, the target language, learner cognitions, learning style, cultural background, personality, previous experience of language learning, and the setting in which learning is taking place. Studies have shown that all these factors impact on learners' choice of learning strategies. For example, Wharton (2000) examined bi- and multi-lingual university students studying French and Japanese as foreign languages in Singapore.

Using the SILL, she found that students studying French had a higher overall mean for strategy use than students studying Japanese, that overall reported strategy use was lower than that in second language learning situations, that affective strategies in particular were less preferred, that motivation was most strongly related to reported strategy use, and that students who considered their proficiency to be "good" or "fair" reported significantly greater use of strategies than those who considered it "poor." However, contrary to other studies, which have shown greater strategy use by females, Wharton found no effect for gender. Studies such as this demonstrate that different populations of learners employ strategies in different ways and thus help to guard against ethnocentric bias in definitions of good language learning strategies. They provide further evidence against directing learner training at specific strategies and they lend support to a sociocultural perspective on learning strategies, which emphasizes that choice of strategy is the result of how learners construct the activity they are engaged in and is under continual revision (see Donato & McCormack, 1994).

How successful are pedagogic interventions directed at training learners to use specific strategies? Chamot (2001) reviews the research to date. The results are mixed and tend to bear out the comments made above, namely, that strategy use depends on contextual factors and is necessarily relative. Thus, whereas there is support for teaching the use of some strategies, such as the key-word method for learning vocabulary, there is also evidence to suggest that learners will resist using the strategies they are taught if they feel their existing strategies are effective. Further, there may be developmental constraints on learners' ability to learn new strategies. In general, more proficient learners make greater use of strategies than less proficient learners. This is often interpreted as indicative of the role that learning strategies play in advancing proficiency. But an alternative view is that it is learners' proficiency that dictates the strategies they are able to use. Halbach (2000), in a qualitative study based on learner diaries, found that it was the better students that benefited from strategy training, leading her to question the value of such training for weaker students.

Learning strategies have proved a gold mine to which many researchers have rushed. However, the results to date are somewhat disappointing. One reason for this is the lack any theoretical account of how learning strategies relate to the psycholinguistic processes involved in L2 acquisition.

21.4 Conclusion

A recurrent theme of the preceding review of research into individual differences in L2 learning is the need for an overarching theory to explain how these factors influence both the rate/success of learning and the processes involved.

The theory will need to acknowledge the *situated* nature of L2 learning. That is, it must reflect the fact that the role of individual learner factors is

influenced by the specific setting in which learning takes place and the kinds of tasks learners are asked to perform in the L2. It will also need to account for how individual learner factors influence: (1) *opportunities for learning*, and thereby the quantity and quality of the L2 data that learners have to work with; and (2) the *acquisitional processes* responsible for interlanguage development. Further, the theory will have to specify the relationships and interactions among the various individual difference factors. In particular, it will need to indicate how a learners' *abilities* and *propensities* help to shape their *cognitions* about language and language learning and how these, in turn, affect their choice of *learning strategies*. The theory will need to grapple with what is perhaps the overriding issue in SLA today – the *role of consciousness*. It will need to specify, for example, whether the influence of individual difference factors such as motivation and language aptitude is mediated by learner cognitions and learning strategies, which by definition are conscious actions performed by the learner, or whether they have a more direct effect on opportunities to learn and acquisitional processes that arise without awareness on the part of the learner. Finally, the theory will need to explain how different aspects of a learner's L2 proficiency (e.g., fluency as opposed to accuracy) are influenced by the various factors.

Not surprisingly, perhaps, there is no such theory at the moment. Researchers have preferred to focus their efforts on discrete factors resulting in disparate literatures dealing with this and that, as reflected in the preceding review of the research. The result is a lot of illumination but somewhat limited explanation. It is clear that learners contribute hugely not just to how fast they learn or how successful they are but also, selectively, to the acquisitional processes through which learning takes place. The goal of future research should be the development of a comprehensive theory to account for the nature of this contribution.

See also 3 Second Language Acquisition and Ultimate Attainment, 20 Second Language Learning, 22 Social Influences on Language Learning.

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