Chapter 4

Learning strategies, language learning and CELL

4.1 Introduction

Just as research in the areas of individual differences and learning styles has produced an extremely diverse body of findings, so too does the literature on learning strategies differ. This chapter takes up the issue of learning strategies as a construct, introduced in the previous chapter, and provides illustrations from theoretical analyses and critiques of this construct. This overview will then be used to produce a working framework for general learning strategies and, subsequently, language learning strategies in particular. As initially proposed in the previous chapter, an understanding of the nature of learning styles and of language learning strategies is critical to the construction of a CELL instructional design framework developed to meet the needs of learners in a self-access context.

More importantly, an essential feature of such a design is the allocation of control of both the software package, and the learning engendered in such a package. In order to make the most of this control, learners need to understand their own learning processes, to be able to make informed choices about the paths their learning takes, and to be pro-active in managing and directing their own learning. All of these facets of allocation of control to the learner revolve around learners being able to use, and develop within themselves, effective language learning strategies. In the design of a learner- and learning-centred CELL package, the software interface and instructional design also need to provide support for, and information to, learners to assist them in the development of, the necessary strategies. In the words of Ely and Pease-Alvarez:

> At the heart of the study of learning styles is the desire to help our students find out more about their uniqueness as language learners. The central goal in thinking about learning strategies is to discover how to help individuals realize their full language

> learning potential. [...] it becomes clear that these goals are not only complementary but also essential to one another.
>
> (Ely & Pease-Alvarez, 1996: 5)

In addition, as stressed in the previous chapter, the integration of new media, such as multimedia, into our existing teaching and learning programs, needs to remain modelled on existing principles of good practice in the use of other media. As Bickel and Truscello have recently emphasised:

> The use of technology does indeed require gathering new and different kinds of resources, but our roles do not change qualitatively. We remain facilitators, guides, counselors, and information providers. The materials and pathways onto which we guide our students simply become electronic.
>
> (Bickel & Truscello, 1996: 16)

After an introduction to the background issues relating to research into learning strategies and the position we are taking on these in the instructional design framework, this discussion will move on to a more detailed examination of the role of learning strategies in self-directed and autonomous learning. Evidence for the existence of learning strategies, and some explanatory models of the nature of the interaction between learning strategies and effective or successful learning, will then be presented from the area of general learning. This will be followed by extension into the identification and description of specific language learning strategies, leading to the conceptualisation of a sociocultural model for their role. Finally, the role and effectiveness of instruction in learning strategies will be argued in the context of the new sociocultural model for CELL instructional design.

This argument will be grounded on the principle that such strategies can be learnt through exposure, instruction, and practice. Evidence will be provided to support the teachability of language learning strategies and the usefulness for language learning of CELL software that incorporates awareness-raising and practice in the use of learning strategies. This approach will be framed from a Vygotskian sociocultural perspective as outlined by Lantolf (1994), using the strategies identified by Oxford (1990). One of the major features of the modified classification of language learning strategies in this new model is the expansion of the role of the strategic paralinguistic and interactional features of language learning. As mentioned in Chapter 2, and in more detail in the next chapter, it is these features which can be highlighted in CELL software based on principles of interactivity in the use of multimedia.

4.1.1 Background to the issues

In the last chapter, a taxonomy was presented as a means of grading listening comprehension tasks, which can then be presented in a CELL context. As we argued then, this taxonomy provides a practical and transparent framework for identifying which task types provide greater or lesser cognitive challenges for learners. In order to incorporate into this framework information on learning strategies in a manner that is similarly accessible for learners, it is necessary to have available a similarly practical taxonomy of these strategies. Later in this chapter, we will introduce the means by which learning strategies can be incorporated into CELL listening and viewing comprehension tasks, and into an effective model of an integrated, interactive, learner-centred, learner-managed CELL program for listening comprehension.

Extensive review of the literature on the progressive emergence of the construct of learning strategies in general, and specific language learning strategies in particular, reveals considerable variation in definition of what constitutes learning strategies; which strategies, if any, are trainable or can be learnt; and the identification of discrete language learning strategies. It will be argued that Oxford's (1990) taxonomy and accompanying

explanation of language learning strategies is the most practical and intuitive taxonomy available to date for the purposes of learner-centred CELL software design. However, for reasons discussed in detail later in this and the following chapter, this taxonomy also requires some modification if it is to account appropriately for the visual and kinesic aspects of language intrinsic to listening and viewing comprehension through CELL with the use, for example, of various multimedia tools.

4.1.2 Some specific problems with research into learning strategies

Ellis (1994) provides a useful and comprehensive overview of various research studies and discussions of language learning strategies. He concludes that, while the information from learning strategy studies seems to offer opportunities for teachers to help language learners become more effective learners and more proficient language users, there remain many problems which still need to be dealt with, both empirically and theoretically. According to Ellis, these problems include:

- disagreement over identification and description of strategies at a theoretical level
- diversity among claims for the nature of strategies
- the essentially descriptive nature of strategy studies so far
- the unreliability of strategy studies which of necessity are predominantly carried out using retrospective and introspective data collection methods
- the assumption that there are 'good' learning strategies (i.e. more effective, generic/task independent)
- possible differences in strategies that are useful for children compared to those of adults
- possible differences between strategies that are useful, on the one hand, for classroom language learning, and on the other, for language learning in a naturalistic setting
- the lack of evidence for causal connections between strategy use and language learning

- the absence of longitudinal case studies on the connections between language learning strategies and language learning.

The issues listed above can be seen as deriving from three main sources. Firstly, a considerable number of concerns have been raised as to the validity of research methods which can be employed to investigate language learning strategies. As discussed in detail in section 4.2.4, principal among these is the potentially subjective bias and inaccuracies of data collected through the main instruments, including learner diaries, self-reports, and retrospective reporting. The second source of confusion evident in the problems listed above derives from the different perspectives taken as starting points by researchers, whether these are interlanguage development (Bialystok, Faerch & Kasper, Tarone), pedagogic (Oxford, Dickinson, Holec), sociocultural (Lantolf, Donato & McCormick) or cognitive-theoretical (O'Malley & Chamot, Wenden & Rubin). The third source of concern can best be defined as a problem of causality and its relation to teachability. Questions have been raised, for example, about the direction of a causal relationship between being a good language learner and using learning strategies. Do the strategies a learner uses make her or him a good language learner, or do good language learners naturally employ effective strategies? Are other factors such as learning style operating? Most importantly, for our purposes: can the strategies shown to be effective for good language learners be taught to poorer language learners to assist them to become more proficient in the language being studied? Research findings addressing these questions will be presented in subsequent sections. Ellis does, however, conclude with the comment that:

> It is likely that it is not so much how often learners use strategies as when and with what purpose they use them. It is also likely that strategies will prove most helpful

> when they are deployed in clusters, but precisely what groupings work best is not known.
>
> (Ellis, 1994: 559)

As has been shown in the previous chapter, and will be further reinforced later in this one, the effectiveness of strategy use on language learning is contingent on a number of contextual factors, including learning style, aptitude, personality, and, indeed, as Ellis surmises, combinations of strategies appropriate to the demands of different tasks.

4.2 The role of learning strategies in self-directed learning and autonomy

As mentioned in the Introduction, awareness of effective and appropriate learning strategies and the ability to use them are essential for learners functioning in a self-access CELL environment. Much of the recent study of learning strategies has been in the area of self-directed learning: the use of metacognitive and affective strategies by adult and post-secondary learners, particularly in academic, professional or re-skilling learning contexts (Griffin, 1987; Candy, 1987; Bickel & Truscello, 1996; Green & Oxford, 1995; Oxford & Green, 1996). Emerging from these studies, as will be seen below, is evidence that the development of effective learning strategies is essential for learners to be able to take control of their own learning, and that which strategies are effective varies considerably across tasks.

4.2.1 Learning strategies in self-directed learning

In a longitudinal analysis of the development of metacognitive and affective processes among adult learners, Griffin (1987) compiled a detailed list of these processes as identified by both herself and her learners. She found herself in agreement with earlier researchers (Boyd and Fales, 1983) that highly effective learners are those who have developed a group of metacognitive strategies to give themselves more control over their learning and increase their own motivation. These strategies revolve around increasing their awareness of their mental processes, and by naming these, making the

reflectivity an automatic part of their learning. Based on her examination of the processes identified in her own study, and those of Keane (1987), and Denis & Richter (1987), Griffin distilled these processes into five categories relating to: rational thinking, intuition ('metaphoric mind'), relationships, emotions, and bodily energies (physical and spiritual). It is interesting to note that all of these five categories are also identified (along with some other more language-specific strategies) by Oxford (1990) as being strategies essential to effective language learning (see Figure 4.1 below).

Figure 4.1 **Comparison of Griffin's process categories and Oxford's Strategies**

General Learning Process (Griffin)	Language Learning Strategy (Oxford)	Oxford's Examples
Rational mind	Cognitive	analysing and reasoning
Metaphoric mind	Memory	creating mental linkages
	Compensation	guessing intelligently
Relational	Social	cooperating with others
		empathising with others
Emotional	Affective	lowering your anxiety
		encouraging yourself
Physical & Spiritual	Memory	creating mental images
		employing action
	Compensation	overcoming limitations
	Metacognitive	centering your learning
	Affective	lowering your anxiety

	taking your emotional temperature
Social	cooperating with others
	empathising with others

In a radical departure from general trends, Candy (1987), while advocating the incorporation of learner autonomy into the instructional setting, questions the assumptions upon which this move is based, and the techniques or structures employed to implement it. In his review of the literature, he uncovers 30 different terms purporting to refer to self-directed learning. Scrutiny of these terms reveals that the proliferation arises partially from a failure to distinguish *teaching* from *learning*, and that therefore:

> [...] one must have profound reservations about any phenomenon which can simultaneously be called self-instruction and self-planned learning – for it implies that teaching and learning are interchangeable concepts, which clearly they are not.
>
> (Candy, 1987: 160)

This distinction is crucial to the design of learner-centred self-access computer-based language learning materials, in order to make clear the demarcation of such a design from the more traditional computer-based instructional programs.

Candy grounds his argument in the essential differences (also raised by Robinson, 1991: 159) between giving learners control over their learning, and putting them in charge, where, given a choice, learners might choose to be teacher-directed. In relation to giving learners control, Candy comments: 'Simply handing over the reins to us as learners is only likely to lead to frustration and disappointment' (1987: 164). His central thesis is built around 6 assumptions he has identified as the basis for choosing or advocating self-directed learning programs. This assumption states that while some, or even many, adults might prefer a self-directed mode of learning, all learners should have the *choice* whether to learn in this mode or to have more teacher-directed instruction. A corollary to this

statement is that even those who choose a self-directed program will probably still need additional instruction in how to take best advantage of such a program, including awareness-raising in the strategies necessary or useful to succeed in self-directed mode. Only then will learners acquire some measure of control over their own learning, as against being in charge without possessing the skills or strategies to take advantage of this position.

It is worthwhile looking at Candy's 6 assumptions in some detail at this point, since he uses these as the basis for his discussion of the main advantages and disadvantages of the implementation of self-directed learning programs for adult learners. Candy's assumptions are as follows:

1. adults are independent learners
2. learner-control allows for different learning styles
3. increasing learner-control increases motivation to learn
4. learner-control contributes to the development of the 'whole person'
5. learner-control recognises the equality of adult learners and adult educators
6. learner-control models a changed power relationship.

In his discussion, Candy rejects the first three of these assumptions on the grounds that they are premised on facets of the fallacy that all adults want to, or have the capacity to be, self-directed learners. As Rogers (1969) and Moore (1972) have shown, less than a third to a quarter of learners are inclined to be self-directed, the majority preferring to be told what to do and how to go about it. In arguing against Assumption 3 above, Candy claims that evidence is rare for learning outcomes being enhanced by learner-control (Gruber, 1965; Cafarella, 1983). He cites numerous researchers in this area who have, in fact, provided clear evidence for the position that many adults, because of the lack of self-confidence, various learning style traits, or learning experiences, in fact *want more* direction and assistance in their learning (Rogers, 1969; Parlett, 1970; Dearden, 1972; Cross, 1976; Entwistle *et al.*, 1979; Hamm, 1982; Candy 1985).

As regards Assumption 4, Candy (1987: 167) concludes that 'although the use of autonomous methods of learning may encourage the development of autonomy, the relation is by no means automatic'. He also finds the assumption that learner control leads to the development of the whole person questionable, on the basis of a means-end confusion: whether self-direction can be taught using only self-directed methods and activities, and whether these skills and attitudes can be carried over to engender other desirable social or professional outcomes. The last two assumptions are disconfirmed by cumulative evidence that the teacher needs to have more control than the learner over the subject matter (Phillips, 1973; Lawson, 1979) in order for a logical progression in learning to be achieved, and that traditional power relationships are entrenched in institutions of learning (Heron, 1981; Hamm, 1982).

While Candy's arguments above are sound and well-founded for self-directed learning without the involvement of computers, when computers are added to the learning environment the impact of some of these arguments is lessened. Specifically, two of the three qualities proposed by Weible (1987) as being unique to the role of computers in language learning assist proponents of self-directed learning in CELL in resolving the dilemmas raised by at least the first four of Candy's assumptions above. These qualities are (Weible, 1987: 74):

1. the capacity for computers to precisely structure students' interactions, both in presentation of subject matter and in teaching learning strategies; and
2. the capacity of computers to modify the presentation of material to suit students' individual needs/abilities.

A pedagogically sound, learner-centred CELL program should, therefore, incorporate exposure to and instruction in learning strategies, and be structured in such a way as to maintain the flexibility of allowing students to modify the presentation of materials, and their interaction with these to suit their own needs. Weible, however, echoes Candy in

warning of the dangers of assuming that learners can, or want to, control their own learning. He cites Steinberg (1984: 98), questioning whether students who know little or nothing about the subject matter are in a position to be able to choose their own best learning path. In spite of this, Weible does claim that '[...] it is possible to give the student indirect control of the program, i.e., control of variables such as sequencing, level of difficulty, length of study, etc. which the student controls through interaction with the lesson' (1987: 79). The instructional design framework detailed in the next chapter provides at least this level of interaction. In addition, we argue that learners can also gain direct control of the program through the informed implementation of learner- and learning-centred principles in navigation, and the provision of the content, help, and exploration features of the package itself. The actual mechanisms whereby this can be achieved will be discussed in the next chapters.

4.2.2 Self-instruction, self-direction and autonomy in language learning

In his discussion of self-instruction in language learning, Dickinson draws a distinction between self-instruction, self-direction, and autonomy. His distinction is made on the basis of the relative involvement of a teacher, and on the power relationship between teacher and learner regarding decision-making in the area of learning (Dickinson, 1987: 5, 11). Dickinson's stance is less appealing than that of Holec (1978, 1987), discussed below, in that it is prescriptive in nature. Dickinson defines autonomy as being characterised by no involvement of teachers or institutions at all, and so in this sense is learner-centred, while self-instruction (of which autonomy is a sub-set) can be either learner-centred or materials-centred, the main determining principle being who makes the decisions.

Dickinson assigns the term 'self-directed' to that particular attitude of learners whereby they accept responsibility for all learning-related decisions, while possibly allowing others to implement those decisions. Within this paradigm, 'materials-centred' is in opposition to 'learner-centred', as materials necessarily incorporate built-in decisions on

the management of learning. While this can be accepted in general, Dickinson's paradigm makes no provision for materials that are learner-centred by design, or for the learner's mediating role in an interpretative interaction with learning materials. In this way he appears more prescriptive than Holec, who recognises the ability of individuals to make choices or to mediate their learning path, even with teacher-created materials.

Dickinson (1987: 19) presents five justifications for self-instruction:

- practical reasons, such as available time and location;
- individual differences among learners, including language learning aptitude, learning strategies, and cognitive style and strategies;
- educational aims such as improving learning efficiency, and the wider educational goals of autonomy and the requirement for continuing education;
- motivation including such factors as extrinsic motivation & intrinsic motivation;
- learning how to learn foreign languages.

However, in his discussion of what constitutes learning strategies and cognitive styles, he does not adequately discriminate between the two, even though he claims to be drawing on the work of Pask (1976) and Nisbet & Shucksmith (1984), discussed later in section 4.3.1. For example, unlike these other researchers who have focussed on the intentional application of strategies, and on the question of strategies being task-specific, Dickinson does not specify whether he considers strategies to be consciously or unconsciously employed, nor does he provide information on whether he regards strategies as task-specific or more generally employed.

In his overview of how to devise learning-to-learn objectives, Dickinson incorporates the knowledge and techniques he regards as being necessary for an autonomous learner into the three-level framework of Nisbet & Shucksmith (1984: 8), which includes approach to learning, learning plans, and learning skills. All three levels of this model can be

identified among the metacognitive strategies of Oxford (1990) and O'Malley & Chamot (1990), discussed in section 4.3.2 below. In keeping with this focus on strategies in the metacognitive domain, Dickinson justifies the need for self-assessment in the self-instructional context on the grounds that self-monitoring, which is inherent in self-assessment, is a necessary step towards autonomy. He also recognises self-monitoring as a higher level cognitive objective according to Bloom *et al.* (1956), as discussed in Chapter 2.

Nakhoul (1993), on the other hand, regards learner independence as a continuum ranging from teacher-directed to learner-directed, with learners able to choose at any point on this continuum whether to work in a class, in a group, or alone. She uses learners' awareness of their own learning processes and their ability to exploit available resources – both human and other – as her measure of their level of independence. In her words: 'Fully autonomous or independent learners are able to diagnose their learning needs, select the means of fulfilling them and assess for themselves when they have been satisfactorily achieved' (1993: 147). In the context of her adult ESL learners in Hong Kong, Nakhoul also raises the question to what extent the very notion of self-directed learning is ethno- (i.e. 'Anglo')centric, as many non-English-speaking cultures have strong teacher-directed traditions (1993: 151). However, as a result of her successful action research project in the introduction of self-direction into the program, and in spite of her cautiousness, Nakhoul concludes that in a 'non-competitive environment of mutual trust, respect and support', learners and teachers can be empowered on both professional and personal levels. When teachers allocate to learners control over their own learning to the extent that teachers are not even present, and learners themselves decide what help they require and the timing of it, most of Nakhoul's conditions are met. Such an environment is possible in the CELL environment advocated here.

The main principles for the successful introduction of self-directed learning which seem to emerge from her study are that:

1. preparation in terms of both cognitive and metacognitive awareness should be build into the program;
2. the process of introduction should start from the initial states and beliefs of teachers and learners and build from these; and
3. the adjustments for both learners and teachers in roles, awareness and acceptance of change be made slowly and gradually, and with agreement of all parties (highlighting the importance of collaboration, negotiation and consultation in this process).

Nakhoul's project therefore represents a tangible model for the successful implementation of a self-directed learning program which has taken into consideration the concerns raised by Candy (1987) earlier in the context of general learning strategies about the power imbalances between teachers and learners, and the unwillingness of some learners to take the self-directed path. Her solutions seem to rely on learners and teachers collaborating, and on sharing the learning experience.

As part of his report for the Council of Europe entitled *Autonomy and Foreign Language Learning*, Holec defined autonomy in language learning as '*the ability to take charge of one's own learning*' (1979: 3), where an ability was 'a power or capacity to do something' (in contrast to a 'behaviour') and taking charge of this entailed 'to have, and to hold, the responsibility for all the decisions concerning all aspects of this learning' (1979). For Holec, in order to formulate their own objectives and become strategy-using learners, self-directed learners on the road to autonomy need to be informed of language needs in society as a whole, the results of research into second language acquisition processes, and dimensions of verbal communication. In other words, learners need to know how to make these decisions strategically, but at the same time the infrastructure of the learning institution must allow for these decisions to be made by the individual learners concerned. This process of acquiring autonomy requires a *gradual deconditioning* of learners from the previously held judgments and prejudices about both the target language and the language learning and teaching process, and the *gradual*

acquisition of knowledge and skills in using the range of tools and resources available, including such internal mental resources as self-evaluation and monitoring, and external resources like teachers or native speakers.

In this context, Holec cites 'programmed instruction' as an example of a situation where, by choosing a certain learning tool, learners may experience a conflict between acquiring knowledge of the target language and being forced to learn it in a programmatic way, which conceivably does not correspond to their preferred way of learning or their own strategic decisions. While this question does represent a dilemma for self-managed learning and programmed instruction, the dilemma does not necessarily persist for other manifestations of CALL. Under the conditions outlined by Holec, for example, this dilemma can be overcome by incorporating awareness-raising activities and material into a self-managed CELL program, and by allowing learners to take control over their paths through the materials. In his description of how the contents of a learning program are defined by learners, Holec stresses that the thematic content will be mediated by the learners' need to communicate, and that even resources and materials 'external' to learners will be 'created' or mediated by their own internal schemata. Through this principle of mediation, Holec foreshadows the impact of a sociocultural perspective on strategic language learning as exemplified by Lantolf (1994) and others later. It is such a program that is developed in the following chapters.

In the context of contrasting autonomy with self-directed learning, Holec criticises proponents of the latter, who conceive of it as learning in the physical absence of a teacher, without allowing learners to take charge of anything more than the practical organisation of learning such as time, place, or pace. In this sense, Holec establishes the precedent for concern about self-direction in language learning subsequently echoed by Candy (1987) in the context of general learning, as discussed earlier. This issue of being in charge *versus* being in control is again raised by Robinson (1991) with regard to the use of CALL materials in self-access mode.

In a later discussion of the management of learning, Holec makes the distinction between 'managing learning or managing to learn' (1987: 145). Here he stresses the importance of allowing learners to 'have the choice between taking full responsibility for the process or simply submitting to it' (1987: 147). With the advantage of retrospection on the Centre de Recherches et d'Applications Pédagogiques en Langues (CRAPEL) studies, Holec proposes the role of 'the good studier' as being the focus of learning as a management process. In this sense he diverges from other language learning studies discussed here, by separating language proficiency level and language achievement from the strategic decisions that need to be made by learners on objectives, content, techniques and methods, and assessment. Several important points that emerge from the CRAPEL studies are that learners can improve their ability to manage their own learning; learners' increase in competence is variable; and there is no necessary causal relationship between knowing how to self-direct and implementing this knowledge in practical ways. The analogy that Holec draws is that of 'someone who knows how to drive a car [who] may sometimes prefer to be driven' (1987: 156).

As mentioned above, Dickinson seems to overstate the definition of 'full autonomy' for our purposes, by maintaining that the autonomous learner does not require other assistance from a helper/counsellor, learning exchanges, native speakers, or peers. In language learning involving the use of language for communication, people necessarily interact with each other, and the constant negotiation of meaning, and mediation using language, must surely constitute 'other assistance'. Autonomy could alternatively be defined as the ability to function as an (autonomous) individual, seeking help and negotiating meaning with others (whether they be teachers, counsellors, native speakers of the target language, other non-native-speaking learners, computer software programs, or other sources of language text), when the situation/environment presents the opportunity or when self-evaluation or monitoring dictates the need. This definition seems to encapsulate the qualities exemplified in the studies of both Holec and Nakhoul,

while at the same time building up the framework for a learner-centred CELL program in which learners can make informed decisions on their learning paths.

As proposed throughout this work, a sociocultural approach focuses on language in use: how meaning is extracted, negotiated, and maintained in interactions between learners, contexts, and texts, whether these texts are spoken, written, monologues, conversations, visual or graphic representations, or conveyed by means of a computer. In fact, in a sociocultural perspective on strategic language learning, computers are recognised as a mediation tool for transforming 'natural, spontaneous impulses into higher mental processes, including strategic orientations to problem solving' (Donato & McCormick, 1974: 456). It is this perspective on interaction which will be taken up again and further developed later in this chapter, and in Chapters 5 and 6. When CELL is used in a self-access or private practice context, it is the learners' interaction with, and therefore management of, the learning environment that determines the learner-centred or humanistic nature of language learning. The incorporation of the development of learning strategies, including those implicated in the exploitation of paralinguistic features of language as well as metacognitive and cognitive strategies, into the CELL program is therefore critical in the provision of a learner-centred CELL environment which helps learners gain more control over their own learning.

4.3 Problems of identification and description of general and language learning strategies

As mentioned in Chapter 3, learning strategies have been implicated in the facility to work with disembedded language (Skehan, 1989: 91), which is often the main mode of presentation in formal language classroom settings (Chamot & O'Malley, 1987), and in the development of self-direction in language learning leading to autonomy (Wenden, 1991). Continuing language learning both within and outside of the classroom, or in naturalistic settings/contexts, requires that learners have and can apply certain skills and processes (Holec, 1979). This is what the term learning strategies refers to. However, as

illustrated by the number of research studies outlined in this and later sections, there is still considerable debate about their nature and definition in the areas of both general learning, and more specifically, language learning. Another question at issue is whether or to what extent the strategies instrumental to effective language learning are distinct from more general learning strategies – or, indeed, whether there may be certain strategies which are unique to language learning. The following discussion will provide an overview of some of the theories and research relating to general learning strategies, highlight the areas of correspondence and similarity, and propose some aspects of certain strategies as being distinct to language learning.

Studies in the field of cognitive and educational psychology provide evidence for general learning strategies, and the various classifications of these. With the emergence in the late 70s to mid 80s of a more cognitive (as opposed to behaviouristic) approach to both psychology and language learning, discussed in Chapter 1, more attention began to be directed towards the cognitive, strategic, and metacognitive processes that might be involved in learning (Dansereau, 1978; Rigney, 1978). As part of an early attempt to develop a general learning strategies curriculum, Dansereau (1978) identified two classes of strategies: *primary* strategies and *support* strategies. He defined primary strategies as being directly related to operations on materials, such as identification of important points, comprehension, retention, and recall. Support strategies, on the other hand, were defined as operating on individuals to 'maintain a suitable internal psychological climate' (1978: 4), and comprise attitude, concentration, and monitoring and correcting the progress of primary strategies.

4.3.1 The strategy classification of Dansereau *et al.*

Dansereau and colleague's conceptualisation of classes of strategies is supported by subsequent research and theorising in language learning strategies. Strategies identified and classified by O'Malley and Chamot (1990: 137-9), for example, as being *metacognitive*, correspond to Dansereau and colleague's support strategies, while their

primary strategies, such as using imagery and networking, can be identified among those mentioned by O'Malley and Chamot in their *cognitive* category. Indeed, in a succinct overview of the bases of learning strategy research, Dansereau *et al.* make the point that research in this area grew out of the shift in the field of psychology from behaviourism to a more cognitive focus. As behaviourist studies on improving teaching yielded little evidence for improvements in learning (Dubin & Taveggia, 1968), a concomitant shift in focus from teaching to learning emerged. As discussed in Chapter 1, this shift in mainstream psychology was also reflected in the field of language pedagogy.

On the basis of the lack of success in studies he found (Dansereau *et al.*, 1975) involving the manipulation of teaching techniques, Dansereau *et al.* inferred that:

> [...] individual differences or strategies or both may be the primary causes of performance differences. [...]

and that therefore:

> [...] exclusive emphasis on teaching methods may lead to ineffective instructional manipulations, force students to develop nontransferable and inefficient strategies, limit a student's cognitive awareness, and, consequently, extract a large emotional toll.
>
> (Dansereau *et al.*, 1978: 2)

Dansereau and colleagues therefore decided to design a curriculum based on learning rather than teaching, and specifically on strategies that assist in the acquisition, retention and processing of information. It was also at around this time that researchers in the area of language learning (Rubin, 1975; Naiman *et al.*, 1978) began to examine the strategies and skills that typify successful language learners, with a view to introducing training in those strategies to less successful learners. This will be discussed in more detail later.

In their experimental learning strategy enhancement program, Dansereau *et al.* attempted to address problems of previous studies, namely, the highly artificial nature of

the materials and tasks used, and the lack of integration of the components being studied with training in the whole learning process. For the purposes of this discussion, the interesting features are not so much the specific strategies (paraphrase, question-answer, imagery, and concentration) that Dansereau and colleagues chose for their training, but rather their conclusions and suggestions for improvement. Apart from general suggestions that the pace be decreased, written descriptions of strategies be provided, the dependent measures be made more diagnostic, and the feedback given to students be improved, Dansereau and colleagues found that the training could also have been improved by giving the students more information about the range of strategies available, and by allowing them their own choice of strategies, thereby providing closer compatibility with their individual learning styles.

For subsequent programs of this nature, Dansereau *et al*. recommended the use of a variety of measures of aptitude and cognitive style in order to select those students who would benefit most from the training. They also suggested that improvements in the provision of feedback to participating students would help them make more informed choices on their own – a suggestion which has obviously been taken up in self-directed learning approaches, and in the literature on provision of learner-specific feedback in CELL. Indeed, at the end of her study on elaboration skills as a learning strategy, Weinstein (1978) concluded that her study showed only positive *trends* for strategy training, without reaching significant levels. Nevertheless, she also maintained that models of the learner as 'an active, self-determining individual' on which strategy training programs are grounded, open:

> [...] the possibility of developing means to teach learners active cognitive strategies which, if adopted, may enable them to learn well and perform adequately in most learning or training situations.

and further, that:

> Such means would move the learning of cognitive skills out of the realm of chance and place them under the systematic control of the individual learner.
>
> (Weinstein, 1978: 53)

As we will examine from section 4.5.1 onwards, this issue of learner control is particularly important for adult or secondary-aged learners of language because they generally have clearer goals and purposes in mind when learning a language. It is especially true of adult ESL learners enrolled, or planning on enrolling, in tertiary study. Such learners experience strong extrinsic motivation in the form of pressure to achieve in their area of study through the medium of the English language. It would be expected, therefore, that it would be necessary for this group to be able to achieve autonomy in their language learning through the development of learning strategies which they can use with ease and confidence.

As part of this process of development, effective strategies need to be identified and tasks/activities which foster their development need to be designed. The next step is to facilitate the process of generalisation on the part of learners from specific tasks to broader applications, then to application in novel contexts, and finally to self-initiated, conscious choice of efficient strategies in appropriate contexts. As mentioned earlier in Chapter 1, one of the main advantages of technology, and specifically computers in language learning, is the capacity for computers to facilitate individualised learning. In the context of developing language learning strategies, it should be possible to design CELL programs which integrate learner education and awareness-raising in the areas of both learning strategies and language learning skills. Appendix H illustrates some tasks designed for this purpose. The process of developing these tasks and creating the design of the CELL program of which they form a part is discussed in detail in Chapter 5.

4.3.2 Rigney's strategy framework and language learning strategies

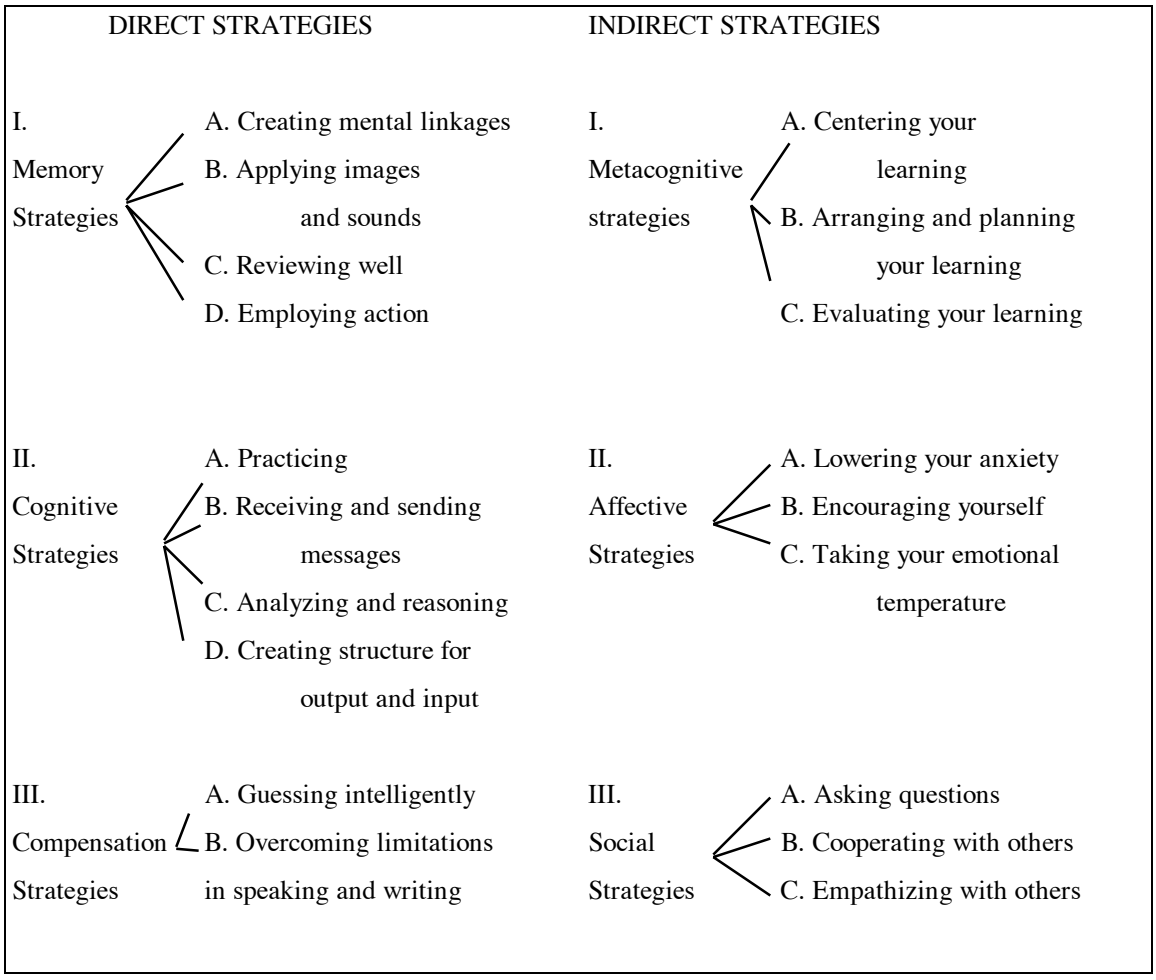
From a theoretical perspective, Rigney, in an attempt to formulate the framework for an automatic (i.e. computer-based) instructional system, defined cognitive strategies as signifying 'operations and procedures that the student may use to acquire, retain, and retrieve different kinds of knowledge and performance' (1978: 165) involving representational, selectional, and self-directional capabilities of students. Rigney also recognised that the use of cognitive strategies may not necessarily be a result of conscious action or choice on the part of students, and that through appropriate instructional design (see cell D in Figure 4.2 below) they can be taught 'to use some cognitive strategies without making them aware that the operations they are performing are, in fact, cognitive strategies' (1978: 167). In his own instructional design framework, however, Rigney takes as a premise that cognitive strategies should be explicit (Detached in the figure below) in order for students to apply cognitive strategies properly, thus facilitating acquisition, retention, and retrieval.

Figure 4.2 **Alternative approaches to teaching and using cognitive strategies**
(Rigney, 1978: 167)

Explicitness of Cognitive Strategy	**Control of Orienting Task**	
	SA (Student Assigned)	ISA (Instructional System Assigned)
Detached (independent of subject matter)	A	B
Embedded (dependent on subject matter)	C	D

This approach to instructional design will be discussed in more detail in the next chapter. However, some other interesting aspects of Rigney's work in relation to learning strategies are his identification of retrieval, selectional, and self-directional processes, and his descriptions of their roles in learning. For Rigney, retrieval processes, implicated in both recognition and recall, drive restructuring learning, and are therefore classified as being part of acquisition. In terms of subsequent formulations of classifications of *language* learning strategies, Rigney's Retrieval strategies appear in the Cognitive Strategies of Chamot, Küpper and Impink-Hernandez (1988: 17-19 – see Figure 4.4 below), and in Oxford's Direct Strategies (see Figure 4.3 below) divided into Memory, Cognitive, and Compensation (1990: 17).

Figure 4.3 **Diagram of the Strategy System Showing Two Classes, Six Groups, and 19 Sets** (Oxford, 1990: 17)



The Selectional strategies, on the other hand, have been included in Oxford's Metacognitive and Affective Indirect Strategies (1990: 17), and appear across the two categories: Metacognitive, and Social and Affective, of Chamot, Küpper and Impink-Hernandez (1988: 17-19). For Rigney, Selectional Strategies include attention and intention, where attention is a conscious capability focussing on both internal and external events and processes, including, for example, self-discipline. Alternatively, intention requires understanding one's own learning and knowledge about effective learning processes in order to generate one's own goal structures. The Self-Directional processes identified by Rigney comprise such strategies as self-organisation, planning, and self-monitoring. In the taxonomies of other researchers such as Chamot *et al*. (1988) and Oxford (1990), these are classified as Metacognitive Strategies.

Figure 4.4 **Summary of the Learning Strategies identified by Chamot *et al*. (1988)**

Metacognitive Strategies: thinking about the learning process, planning, monitoring, evaluating

- planning (advance organization/organizational planning
- directed attention
- selective attention
- self-management
- self-monitoring in the following ways:
  - comprehension
  - production
  - auditory
  - visual
  - style
  - strategy
  - plan
  - double-check
- problem identification
- self-evaluation coded as:
  - production
  - performance
  - ability
  - strategy
  - language repertoire

Cognitive Strategies: interacting with, or manipulating material, applying specific techniques

- repetition
- resourcing
- grouping
- note-taking
- deduction/induction
- substitution
- elaboration (relating new to old knowledge, information, associations etc.) coded as:
    - personal
    - world
    - questioning
    - self-evaluative
    - creative
    - imagery
- summarization
- translation
- transfer
- inferencing

Social and Affective Strategies: interaction or affective control:

- questioning for clarification
- cooperation
- self-talk
- self-reinforcement

This reclassification of what appear to be similar strategies is to be motivated by differences in the manifestations of these strategies in specifically language learning contexts, particularly with the current focus on language for communication engendering more interactive, interactional, and learner-focussed tasks. The reclassification also reflects the research techniques employed, and terminology created by different researchers to refer to what seem, essentially, to be similar processes. This view will be discussed in more detail in section 4.4 of this chapter relating specifically to language learning strategies.

4.3.3 Other general strategy studies

In an approach to general learning strategy training in the L1 to assist children to improve their overall academic performance, Brown *et al.* (1981) isolated two techniques: to add substantially to their knowledge, and to instruct them in the use of techniques to enhance their own knowledge. For Brown and colleagues, it was not enough merely to 'improve upon students' spontaneous performance' (1981: 14); they also wanted to see their students capable of improving their performance on novel tasks of a similar nature. They felt that this could be achieved by integrating into their instructional approach a specific focus on helping their students improve their self-control and self-awareness of their own learning processes. In a Recall-Readiness Training study with mildly retarded primary-aged children, they found that the most effective training required simplified tasks with demonstrable basic rules, training in an appropriate learning strategy, and training in self-monitoring of that strategy. They concluded that self-monitoring training was most critical, since some better-informed learners showed evidence of spontaneous transfer, rendering it unnecessary to make each step explicit for these learners.

In a study on training strategies for summarisation, Day (1980) found that 'average students benefited more from instruction than did the remedial students' (reported by Brown *et al.* 1981: 18) and that for 'the more sophisticated students, training resulted in greater use of the rules, and this improvement was effected with less explicit instruction'. Together these studies provide evidence for the effectiveness of training in certain kinds of general learning strategies, for the appropriateness of strategy training for average to better learners, and for the importance of self-awareness and self-monitoring strategies in this process. As discussed above, these metacognitive strategies have already been identified as being useful in general cognitive tasks and learning.

4.3.4 Refining general learning strategies in terms of language learning

Taking a different perspective from previous researchers into general learning strategies, Nisbet and Shucksmith (1986) explore the nature and definition of learning strategies in terms of teachers, learners and classrooms. In common with Brown and colleagues, Nisbet and Shucksmith have focussed on the transferability of strategies, but they have taken a broader view of this process. For them initially, learning strategies:

> seem to represent higher-order skills which control and regulate the more task-specific or more practical skills. They seem to be more general in nature, the sorts of activities (like planning and checking) that are going to be needed time and time again in all sorts of different situations and problems.
>
> (Nisbet and Shucksmith, 1886: 26)

They then proceed to summarise various attempts to classify strategies, based mainly on distinguishing between *skills* and *strategies*. This variety of classifications can be represented as in the table below (Figure 4.5), where Column 1 essentially identifies what have since been classified as Metacognitive (or Oxford's Indirect) Strategies, and Column 2 could be described as Cognitive (or Oxford's Direct) Strategies.

Figure 4.5 **Summary of strategy classifications**

Column 1	**Column 2**
general strategies	mediational strategies (Resnick & Beck, 1976)
executive skills	non-executive skills (Sternberg, 1983)
executive functions	control processes (Butterfield & Belmont, 1977)
macro-strategies	micro-strategies (Kirby, 1984)

Other classifications revolve around the principle of plannedness (Brown, 1974), with the addition of certain more specific strategies, namely: relatedness search, stimulus analysis, and checking (Baron, 1978). Nisbet and Shucksmith summarise these categories with examples in the table below (Figure 4.6). In this hierarchy, characteristics of the individual differences and learning styles discussed in the previous chapter are recognisable within the category described as Central Strategy, while Macro-Strategies seem to refer to the metacognitive or Indirect Strategies mentioned above, and Micro-strategies to the cognitive and social/affective strategies of Chamot, Küpper and Impink-Hernandez (1988), or Oxford's Direct Strategies (1990) also mentioned above.

Figure 4.6 **A hierarchy of strategies** (From: Nisbet & Shucksmith, 1986: 30)

	Characteristics	Examples
Central strategy (style, approach to learning)	Related to attitude and motivational factors	'Planfulness'
Macro-strategies (executive processes closely linked to cognitive knowledge)	Highly generalisable Improve with age Improve with experience Can be improved by training, but difficult?	Monitoring Checking Revising Self-testing
Micro-strategies (executive processes)	Less generalisable Easier to instruct Form continuum with higher-order skills More task-specific	Asking Questions Planning

However, before these categories can be usefully employed as a framework for strategy instruction within a CELL model, each still needs further refinement. This is necessary in order to provide for learners a clear and easily accessible overview of the nature of

learning strategies, and inter-relations among them. This, in turn, is essential to assist learners in a CELL environment in the process of becoming more informed, autonomous learners, and able to take advantage of the control they have over their own learning paths and materials.

Metacognition and its constituents has been discussed extensively in the literature on general learning strategies. For example, Flavell (1976), to whom the introduction of the term 'metacognition' has been attributed, felt that it referred 'among other things, to the active monitoring and constant regulation and orchestration of these processes in relation to the cognitive objects on which they bear'. Alternatively, Nisbet and Shucksmith (1986: 34 – see Figure 4.6 above) feel that it 'concerns knowledge of one's own mental processes'. Flavell and Wellman (1977), and Flavell (1981) attempted to provide a model of cognition by dividing it into four categories involving respectively: basic operations and processes of cognition, knowledge, strategies, and metacognition. In this model, strategies carry the potential for being conscious behaviours, while metacognition is concerned more with awareness of, or knowing about, one's own mental processes. However, it was not until researchers such as O'Malley and colleagues (1985), and Chamot and colleagues (1988) carried out empirical studies in the area of language learning, and the studies by Weinstein and Dansereau *et al*. discussed above, that a clearer picture was produced of the differences between metacognition and cognition, and the variety of strategies that each comprises.

More recently, consciousness and awareness have come under closer scrutiny, particularly for their role in incidental and subconscious learning (Schmidt, 1990; 1993; 1994; Bialystok, 1992; Tomlin & Villa, 1994; van Lier, 1994; Ellis, 1994). As mentioned in the previous chapter, Schmidt (1994) provides an insightful distinction of consciousness into intentionality, attention, awareness and control, and then analyses their respective roles in the language learning process. While rejecting the possibility of

subliminal language learning (though accepting subliminal *perception*), Schmidt maintains that:

> incidental learning is certainly possible when task demands focus attention on relevant features of the input. [...] In general, the relation between attention and awareness provides a link to the study of individual differences in language learning, as well as to consideration of the role of instruction in making formal features of the target language more salient and facilitating input encoding.
>
> (Schmidt, 1990: 149)

Schmidt also concludes that problem-solving is a function of conscious processing, but that the unconscious mind seems to deal with 'processing of frequency information and the resolution of probabilistic constraints (1990: 149). In terms of strategies and training in their use, Schmidt's review of the literature in the area provides evidence for the conclusion that some strategies, such as those involved in problem-solving and sequential reasoning, for example, are amenable to training, since different strategies require different levels of processing. These strategies are consistent with those listed by Oxford (1990) and Chamot *et al.* (1990) overviewed above, in the cognitive and metacognitive classifications of their taxonomies.

Nisbet and Shucksmith also emphasise the importance of *modelling* (by teachers and/or materials) in the learning process as 'an effective mode of transferring knowledge and skills' (1978: 55). One of the principal features of modelling which they highlight is the transitional nature of modelling in the transfer of control of learning from teachers to learners. Teachers provide the models, learners copy these and subsequently adopt them as their own. This modelling process becomes a critical feature in the development of the learner-centred aspects, and the sociocultural approach to instruction in the use of strategies, of the CELL design to be described in the next chapter. In addition, Nisbet and Shucksmith echo Brown (1983) in advocating the use of computers in learning for their capacity to provide opportunities for 'learning by doing'. In the context of our

CELL environment, the above findings provide further evidence for the appropriateness of incorporating awareness-raising in the use of learning strategies into the instructional design for exploratory learning. These findings also support the effectiveness of incorporating the use of specific learning strategies into the tasks themselves to provide modelling.

Furthermore, since at the time they wrote Nisbet and Shucksmith were mostly familiar only with computer programs of the programmed learning style, based on behaviourist principles, it is understandable that they were wary of the possibility of the computer becoming simply 'an instrument for drill and practice' (1978: 70). In spite of this, they also recognised that even face-to-face classes designed to give students responsibility for their own learning often fail because the formal structures and background assumptions about teacher-learner relationships impede the transfer of control. It would seem, then, that another advantage of using computers in the learning process might be their impartiality in the teaching-learning relationship. Computers, being non-human, can be seen as being impartial and not implicated in any unequal power relationships with learners. For this reason, they could even be more effective than teachers for introducing instruction in learning strategies. This being the case, computers represent a useful tool for learners to learn by doing – both in the area of content learning, and also for learning how to take control of their own learning.

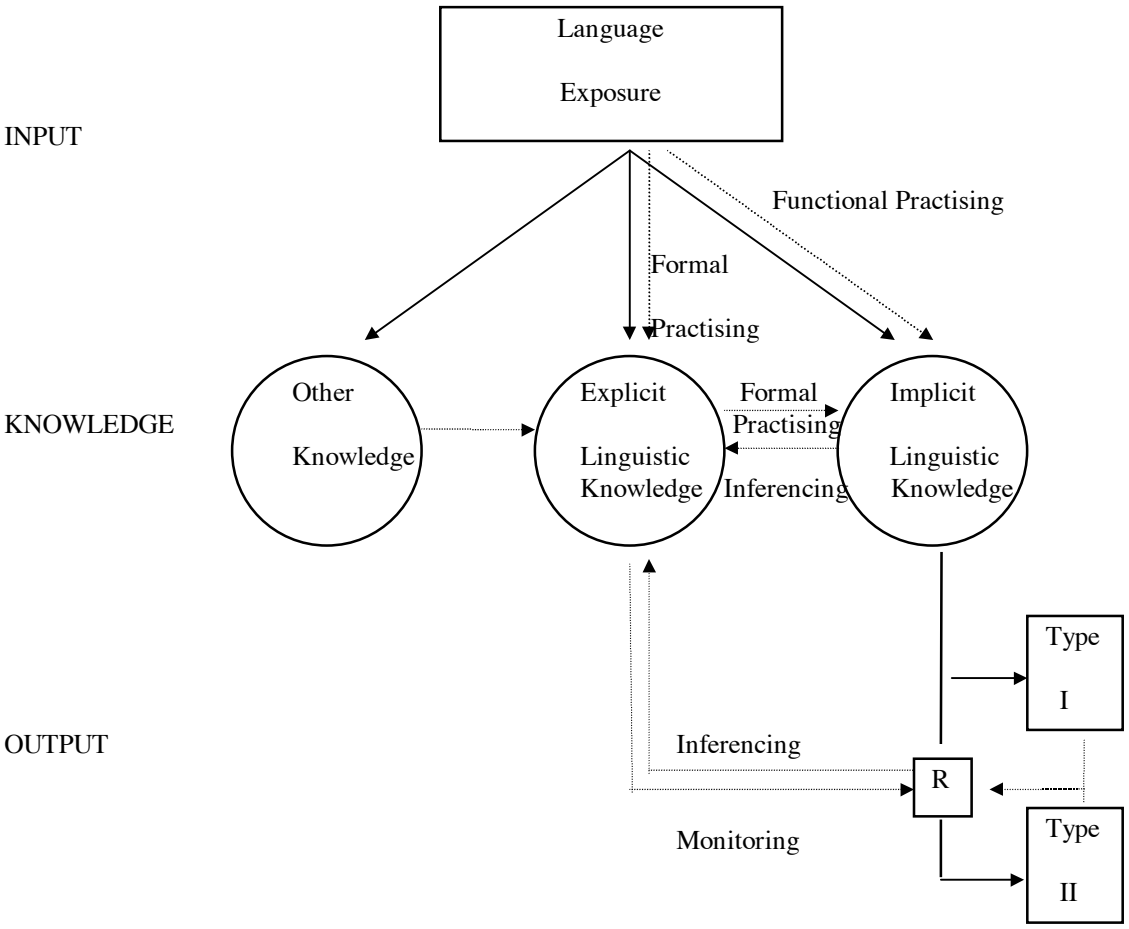
4.4 Identifying and defining language learning strategies

As mentioned earlier in Dansereau's discussion of a learning strategies curriculum, the shift in focus in education from teaching processes to learning processes has reflected the move in psychology away from the behaviourist schools of the 60s and 70s to a more cognitive approach, as exemplified by Anderson's information-processing theory of cognitive psychology (Anderson, 1980). This shift in focus is, in turn, reflected in the research approaches taken to second language acquisition, such as the interactionist

views of Krashen (1982) and Long (1985), and Universal Grammar theory as elaborated by White (1985; 1987) and McLaughlin (1990), and also in language pedagogy.

Figure 4.7 **Bialystok's Model of Second Language Learning**

(Bialystok, 1978: 71)



In language pedagogy, we find emphasis being put on language learning materials and activities which stimulate learners to challenge their hypotheses about second language systems. The confirmation or disconfirmation of these hypotheses, together with the negotiation of meaning, is how, it is presumed, language acquisition or learning is achieved (Bialystok, 1978, 1983; Beebe, 1983; Seliger, 1983; Long, 1985, Bley-Vroman, 1986). Bialystok, for example, (see Figure 4.7 above) focuses on learners' use of processes and strategies in her earlier model (1978) and later discussion of second

language learning, and develops this model empirically by testing learners' use of inferencing as a strategy in reading comprehension. In her words: 'language learners can, and should, and probably do, use information from a wide variety of sources to promote easy and efficient use of language' and 'like scientists, language learners must "test the hypotheses" derived from inferences' (1983: 122).

Modern language learning seems to differ from general learning in its focus on communication as the content of the learning or instruction (as outlined in Chapter 1), and in the common emphasis in communicative language teaching on the development of strategies to facilitate communication and social interaction. Though it has been useful to have an overview of studies of strategies that are found to be used in both general and language learning, closer study of language learning processes in both naturalistic and classroom contexts reveals several strategies that can been identified as being specific to the learning of language. In common with the literature on general learning strategies, the literature on language learning strategies is based on a broad range of theories and research conclusions leading to some diverse taxonomies of strategies and accompanying conceptualisations, classifications and descriptions. These will be discussed below.

4.4.1 The role of communicative and social strategies and language learning strategies

The move towards a recognition of a stronger role of cognition has meant that both metacognitive and cognitive strategies have been the major focus of research studies on the relationship between strategies and effective language learning. As a result of attempts to conceptualise the nature of language proficiency, Canale and Swain (1980), following Hymes (1972), hypothesised that proficiency could comprise three kinds of competence: grammatical, sociolinguistic, and strategic. Canale subsequently (1983) expanded on these three with *discourse* competence to fulfil a lack perceived in the earlier framework to account for knowledge of the structure of text, and to distinguish this from knowledge of sociocultural rules of use. What is pertinent to this discussion is

the identification of strategic competence as intrinsic to the development of language proficiency. Further, we propose that, within a sociocultural model of language learning strategies, communication strategies, social strategies, and strategies for learning to use discourse can all be considered learning strategies because they are implicated in interlanguage development.

Within a sociocultural model of second language acquisition, we learn language by using it. By participating in negotiations of meaning, mediated by language, among other things, we come to be competent users of the language and participants in the target society and culture. Thus, in the words of Donato and McCormick the:

> [the] emergence of strategies is a process directly connected to the practices of cultural groups through which novices develop into competent members of these communities.

and

> language learning tasks and contexts [are] situated activities that are continually under development [...] and that are influential upon individuals' strategic orientations to classroom learning.

(Donato & McCormick, 1994: 453)

We argue, therefore, for the position that awareness-raising activities in language learning strategies, such as those implemented in the software described in subsequent chapters, are mediated, situated activities that allow learners to model and appropriate strategic orientations to language learning, and achieve 'self-mediated processing'. Such processing, interpreted in the general learning paradigms (Candy, 1987) or the language pedagogic paradigms for self-direction (Holec, 1987), would be called 'autonomous learning'. We also maintain that a sociocultural definition of *strategic competence* needs to include competence in the use of communication, social, and discourse strategies. This will be outlined in more detail in section 4.4.3. However, as indicated by Ellis (1994) earlier in section 4.1.1, one of the major areas of confusion in the field of language learning strategy research derives from the terminology and perspectives taken in

disparate paradigms. In order to arrive at an understanding of how this aspect of the confusion can be resolved, we now turn to an overview of a range of perspectives on the relationship between language learning strategies and the development of language learning proficiency.

4.4.2 Language learning strategies involved in communicative competence and strategic competence

Swain (1984:189) provides a definition for strategic competence as comprising 'the mastery of communication strategies that may be called into action either to enhance the effectiveness of communication or to compensate for breakdowns in communication'. In their discussion of the design of an empirical study to elicit the performance of strategic competence, Yule and Tarone (1990) experienced difficulty with the amorphous nature of strategic competence. From their observations that most studies had been restricted to communication strategies relating to acts of reference, Yule and Tarone managed to distinguish grammatical competence from strategic competence as follows:

> While L2 grammatical competence relates to the acquisition of the ability to produce and recognize accurate L2 linguistic forms, L2 strategic competence relates to the acquisition of the ability to use L2 linguistic forms to perform communicative acts
>
> (Yule & Tarone, 1990: 181)

For Yule and Tarone, therefore, strategic competence seems to involve the effective use of certain strategies to achieve the communication of a message or negotiation of meaning, where the language learner may or may not be able to use the appropriate or grammatically accurate forms to achieve this. Communication strategies are thus seen as generally being used to *compensate* for L2 forms that the learner has not yet acquired, while recognising that proficient L2 speakers may well employ both communication strategies *and* accurate forms.

As mentioned earlier, Bialystok developed an empirical model to identify the processes and strategies involved in the language learning process, and to test for the response of these strategies to training. Bialystok's model (Figure 4.7 above) is divided into three levels: Input from language exposure; Knowledge (Explicit, Implicit, and Other, or auxiliary); and Output, incorporating time constraints and a feedback loop for responses. Obligatory processing relationships hold between these levels. Learning strategies, on the other hand, are seen as 'optional means for exploiting available information to improve competence in a second language' (1978: 71). Included in these strategies are: practice in form (language code) and function (communicative language use); monitoring (a production strategy) and inferencing (a comprehension strategy); and self-correction, for dealing with responses to output. In common with other researchers in learning strategies such as Oxford (1990) and O'Malley and Chamot (1990), Bialystok has thus identified strategies that are metacognitive in nature (monitoring), some that are cognitive (formal and functional practising); and some which involve a social dimension (correction).

Bialystok (1983) has also investigated the role of inferencing as a strategy intrinsic to the active cognitive process whereby learners create their language systems. As seen earlier in Figures 4.3 and 4.4, inferencing is a strategy repeatedly identified as integral to successful language learning. The learners in Bialystok's (1983) study were a group of high school aged students of French across four different cue conditions for a reading comprehension task. While one of these conditions was a control, two consisted of different approaches to providing contextual information. This contextual information comprised the use of pictures and dictionaries – Oxford's Cognitive strategy of using print and non-print resources to receive the message, and her Compensation strategy of guessing intelligently, both of which require inferencing. The fourth condition involved instruction and practice in the use of inferencing as a strategy to facilitate comprehension. The most successful conditions in this study were the use of pictures to enhance inferencing from global context, and the lesson condition in which learners were

able to find out about and practise inferencing strategies. Bialystok therefore concluded that information from a variety of sources aids comprehension, and that learners 'can be trained to utilize this information more effectively' (1983: 121).

O'Malley, Chamot, Stewner-Mazanares, Russo & Küpper (1985) approached the study of learning strategies from a background in a cognitive theory of language learning. Working from the principle that much of the research and theory in the area of cognitive psychology had a lot to offer language theorists, they found that descriptions of complex cognitive skills and memory representation, for example, paralleled second language processes. For O'Malley and Chamot (1990), learning strategies represent the nexus of cognitive processing and linguistic processing: a necessary bringing-together of the two, that will help resolve some of the problems met by other researchers who maintain that the two kinds of processing should be investigated independently. They feel that the best current understanding of second language acquisition processes emerges through the incorporation of information-processing theories of cognition and memory such as that of Anderson (1980, 1983, 1985) into the development this understanding. Anderson's information-processing theory is informative in this role because it offers an integration of concepts from a range of cognitive processing approaches, including the capacity to account for a variety of language learning activities incorporated into the comprehension and production systems. It also includes a distinction between 'factual knowledge and procedural skills in both memory representation and learning' (O'Malley & Chamot, 1990: 19) and, most importantly, makes provision for strategic processing.

From a cognitive perspective, then, information-processing theory provides a useful framework within which to discuss the relation between language learning strategies and second language learning. However, as outlined in Chapter 1, the cognitive perspective, while necessary to consider, is not sufficient in itself to explain the range of linguistic, paralinguistic, social, communicative, and affective needs, goals, and behaviours of second language learners. The taxonomy of listening comprehension skills outlined

previously in Chapter 2 is essentially based upon cognitive demands made on the learner, with elaborations of a paralinguistic nature in certain areas such as the focus on visual features for inferencing. Nevertheless, more emphasis needs to be given to the sociocultural, communicative, and affective perspectives of communicating in a language as a learner of that language. As seen earlier, such researchers as Holec (1979, 1987), Dickinson (1987), and Nakhoul (1993) have proposed some approaches in this direction. However, for our purposes, these approaches still give insufficient emphasis to the interactive and interpretative dimensions that are critical to the sociocultural approach taken here. This will be discussed further in section 4.4.3.

4.4.3 Social, affective and communication strategies in language learning

As mentioned in section 4.1 and elsewhere, many of the confusions about terms and distinctions between them in the area of strategy research are derived from different perspectives on how languages are learnt and what comprises language learning. From an interlanguage perspective, Rubin (1987) conceives of cognitive and metacognitive strategies as being intimately related to language learning, with communication and social strategies being less directly related. Thus, while she recognises that communication strategies can lead to learners uncovering 'new information which they then store in their language system' (1987: 27), in that their main purpose is to achieve better communication, they can only indirectly be related to language learning. This conclusion is based on the role of conversation maintenance as 'functional practice', located in Bialystok's model outlined earlier, where communication strategies are only used when difficulties occur in communication. Similarly, social strategies cannot be considered as contributing to learning as 'they merely put the student in an environment where practice is possible' (1987: 27).

This view of the use of communication and social strategies, however, seems to overlook the proactive use of these strategies to actually seek out interaction, to formulate and express the content of communication. It is also at odds with a sociocultural perspective

on the process of communication in which the very essence of communication emerges through the interactive negotiation and mediation of meaning through symbols such as language. Indeed, various proponents of sociocultural theory (Platt & Brooks, 1994), schema theorists (Rumelhart, 1980) and pragmaticists (Kramsch, 1994) are disturbed by the implications of certain prevailing mechanical and information-processing metaphors for language learning and communication. These metaphors, which include such terms as 'input' and 'output', cultivate the conception of communication as comprising static message entities to be transmitted and received, rather than the dynamic, cooperatively-constructed experiences characterised by communication- and task-based language learning activities.

4.5 Mainstream conceptions of language learning strategies

We have discussed above the complications inherent in combining terminology and concepts from different paradigms and how these can be interpreted within a sociocultural model. We will now look at the broader picture in terms of the range of research studies in the area of specific language learning strategies that have been carried out in recent years, how they relate to each other, the research methods used, and what conclusions can be drawn from the various findings and theories. In an excellent overview of research studies, Ellis has managed to isolate:

> five major aspects of successful language learning, as evidenced by the various studies
>
> (1) a concern for language form,
>
> (2) a concern for communication (functional practice),
>
> (3) an active task approach,
>
> (4) an awareness of the learning process, and
>
> (5) a capacity to use strategies flexibly in accordance with task requirements.
>
> (Ellis, 1994: 546)

A selection of these studies will now be discussed and compared to show how Ellis arrived at these five aspects.

Stern (1975), on the basis of his own introspective data, fixed upon the concept of studying the behaviours and actions of good language learners in order to identify what made them so. However, the first major report on such a study was the now-famous 'The good language learner' (Naiman *et al.* 1978), in which Stern was a researcher. In this study, based on a semi-structured, self-report model, two levels of strategy use were identified: primary strategies which were reported by all subjects, and secondary strategies reported by only some subjects (see Figure 4.8 below for more detail). Because of the temporal framework of this study, and the contemporary structural emphasis in language teaching, it focussed on learners seeing language as comprising sets of systems (Strategy 2 below), and to a lesser extent, on contact-inducing strategies (Strategies 1 & 3). Nevertheless, as illustrated by the number of times this study has been cited in subsequent investigations of language learning strategies, it can be said to constitute a major inspiration to studies in the area. In addition, it served to move the focus of strategy studies towards more recognition of the importance of affective and metacognitive factors (Strategies 4 & 5).

Many of the suggestions for further research made in 'The Good Language Learner' (Naiman *et al.*, 1978: 101) have subsequently been implemented. Oxford (1990), and O'Malley and Chamot (1990), for example, have taken up the issue of studying critically the different inventories of learning strategies and techniques with a view to developing an exhaustive list based on a language learning model. Numerous other researchers, some of whose findings are outlined below, have pursued the suggestion to devise similar studies using different elicitation techniques. Yet others (Wenden & Rubin, 1987; Scarcella & Oxford, 1992; Chamot & O'Malley, 1994; Green & Oxford, 1995) have endeavoured to devise experimental programs 'to test the teachability of the identified strategies and techniques' (Naiman, *et al.*, 1978: 101). Specific strategies which emerged in this study as 'essential for successful language learning' include:

1. The learner must be active in his [sic] approach to learning and practice.
2. The learner must come to grips with the language as a system.
3. The learner must use the language in real communication.
4. The learner must monitor his [sic] interlanguage.
5. The learner must come to terms with the affective demands of language learning.

(Naiman *et al.*, 1978: 103)

An important strategy identified by this study was the importance of taking an active task approach (Strategy 1 above): namely, making the effort to participate in activities. This strategy in various interpretations emerges repeatedly in later studies. However, only good or successful language learners participated in this study, and therefore no evidence was obtained that less successful learners do not use these same strategies. Nevertheless, Naiman *et al.* remind us that their study shows that learning strategies and techniques form only part of the total learning process, and that many other factors at both the individual and classroom level affect the outcomes and results of learning endeavours. In addition, the point is made here, and reaffirmed by Rubin (1987) and Green and Oxford (1995), that it is useful to take individual cognitive styles and learning preferences into account when studying the impact of strategies on learning. Recent research evidence to support this point will be presented in section 4.6 on the teachability of strategies.

Using a directed self-report model together with classroom observations, Rubin (1981) identified two categories of strategies: those directly affecting language learning, such as clarification/verification and guessing/inductive reasoning; and indirect processes, including creating opportunities for practice (see Figure 4.8 below for more detail). Rubin experienced considerable difficulty in collecting her data, as she based her study on classroom learning. The number of learners, and the speed and on-going interaction which is typical of classrooms, made it difficult to access learners' thoughts. Some learners, for example, exhibited far more clarity and perception than others in their

reports. This made it difficult for Rubin to extrapolate whether the number and range of strategies reported constituted actual use of strategies, or whether this variety was a function of individual learner differences in cognitive style and motivation. A distinctive feature of Rubin's study is the essentially cognitive nature of all the processes identified. Thus, most of Rubin's reported strategies, such as 'inductive inferencing', 'deductive reasoning' and 'practice', have subsequently been classified by other researchers as Cognitive (Oxford, 1990; O'Malley & Chamot, 1990).

One of the few studies of learning strategies carried out in an *informal* setting is that of Wong-Fillmore (1979). This study of early primary-age children in a play setting focussed on the techniques used by the children to enhance communicative competence. Wong-Fillmore identified three social strategies, including joining in the group and relying on friends to help them, and five cognitive strategies ranging from looking for formulas to guessing (see Figure 4.8 below for more detail). In contrast with the studies by Naiman *et al.* and Rubin discussed above, which focused more on cognitive and structural aspects of language learning, Wong-Fillmore concentrated on the context and environment of speech and comprehension. For her children, participating in the group interaction, however marginally, was integral to the learning of the necessary language expressions, functions and formulaic language, which then further enhanced group participation and acceptance.

From a socioculturalist perspective, participation in the interaction can be interpreted as dynamic enculturation, with the children modelling appropriate linguistic and non-linguistic expression, which then provides them with the tools to participate more actively in interactions. Such findings from studies of strategy development in informal contexts provide us with valuable insights into the nature and emergence of the interactions between novice learners and their more skillful interlocutors. This information is also useful in interpreting the nature of the interaction between the strategies language learners use, and their technological interlocutors in CELL contexts,

which in turn assists us in determining appropriate directions for the development of CELL software and multimedia resources.

However, as Skehan (1987) comments, there is a paucity of studies of the development of language learning strategies over time. One exception to this is an excellent longitudinal study of strategy emergence in children, in which Chesterfield and Chesterfield (1985) managed to use participant observational data successfully. A major criticism of strategy studies based on purely observational techniques is the question of to what extent the researcher can infer internal mental processes from external behaviours. One explanation for the success of observation in this case could be that with such young children (5-6 years), the strategies 'are more overtly manifested, and hence are codable' (Skehan, 1989: 93), whereas in studies of older learners, strategies may have become internalised and therefore less amenable to observation. Chesterfield and Chesterfield defended their use of this technique as being the only way to access the desired information from children of such young ages. They were able to report that the more receptive and self-contained strategies, such as memorisation and formulaic expression, emerged first, the latter reflecting Wong-Fillmore's data. These were followed by the more social strategies such as verbal attention-getting and requests for clarification, and metacognitive strategies including monitoring and elaboration.

As this order also corresponds to the findings of O'Malley *et al.* (1985 – discussed below) on the frequency of use of certain strategies, it seems that the earliest strategies to emerge, being the least sophisticated, may also be the ones most commonly used. Rote learning, for example, has been identified as one of the earliest cognitive strategies used by children (Brown *et al.*, 1983). It is also at the lowest level, Knowledge, in Bloom and colleagues' (1956) taxonomy of educational objectives in the cognitive domain, as mentioned in Chapter 2. This would go some way to explaining the contention of Brown *et al.* (1983) that the simplest strategies are also the most difficult to re-train. If a strategy has been used since a learner's earliest memory, and has proved

successful in the past, the learner may see no need to discard or replace such a strategy until he or she is shown convincing evidence that another strategy or set of strategies is more effective. Providing such evidence then becomes a daunting task in teaching programs which attempt to raise learners' awareness of more effective strategies and a wider range of strategies.

However, it is these very strategies over which learners must gain control if they are to become successful adult learners, particularly in self-access or self-directed learning contexts as outlined by Candy (1987) earlier. It is also these same strategies which are crucial to successful learning in a self-access CELL environment (Robinson, 1991). The taxonomy of listening and viewing comprehension tasks developed in the previous chapter is one aspect of an attempt to combine our understanding of the level of difficulty in cognitive processing inherent in the range of tasks commonly encountered, with the difficulties associated with constraints on listening. The combination of this taxonomy with a taxonomy of learning strategies provides a framework for self-access CELL tasks which incorporate structured awareness-raising for learners of some of the more 'advanced' or higher-level learning strategies that they may not otherwise encounter or activate within themselves. How this can be achieved will be developed further in the next chapter.

4.5.1 SLA research evidence for language learning strategies

In the field of SLA (Second Language Acquisition) research, there have also been numerous studies producing evidence for a range of communication and social strategies. However, as proposed earlier in this work, the findings of these studies relating to the existence and nature of communication and social strategies can be incorporated into a sociocultural model of language learning strategies. Working within the framework of discriminating between three different approaches to second language acquisition research – data-oriented, language model, and processing model – Schachter (1986) claims that metalinguistic feedback other than corrections, as exemplified in the data-

oriented (communication strategy) studies of researchers such as Faerch and Kasper, provides an extra dimension to the SLA model. She also hypothesises that the data-oriented research possibly provides evidence for negotiation of meaning (a communication strategy) as a metalinguistic technique for formulating a target language model for learners. From a sociocultural perspective, this evidence could be interpreted as the development by learners of self-mediation of mental processing.

From an essentially linguistic framework, Cook attempts to distinguish learning strategies as involved in learners bringing long-term competence into being, as against communication strategies which are employed only 'to solve a momentary difficulty' (1993: 113). While we regard this viewpoint as restrictive, Cook tries to maintain, as have other researchers in the area (Poulisse, 1989-90), that research into communication strategies has little to offer second language acquisition research.

Figure 4.8 **Summary of Language Learning Strategy Studies**

Study	Age of learners	L1	L2	Strategies identified
Naiman *et al*. (1978)	College age +	English (mostly)	Multiple	1. active learning approach 2. language approached as a system 3. language for real communication 4. self-monitoring 5. management of affective demands
Wong-Fillmore (1979)	Kindergarten to Early Primary	Spanish	ESL	1. Social strategies: establish membership of social group, conform by imitation of models, rely on friends for assistance 2. Cognitive strategies: Guess meaning from context, practice and use common expressions, analyse recurring elements, re-use common formulae across contexts, ignore details & concentrate on communicative intent
Rubin (1981)	Young adults	Multiple (Mostly Japanese)	ESL	1. seek clarification/verification 2. self- and other-monitoring of language 3. memorisation 4. guessing/inductive inferencing 5. deductive reasoning
Chesterfield & Chesterfield (1985)	Young children (early primary)	Spanish	ESL	(In order of emergence) 1. receptive & self-contained: repetition, memorisation, formulaic expressions 2. strategies to facilitate interaction: getting attention verbally, appeal for assistance, clarification/confirmation requests 3. metacognitive: elaboration, monitoring
O'Malley *et al*. (1985)	Secondary age	Multiple	ESL	1. metacognitive: advance organisers, directed attention, selective attention, self-management, advance preparation, self-monitoring, delayed production, self-evaluation, self-reinforcement 2. cognitive: repetition, using TL resources, directed physical response (relating to actions), translation, grouping, note-taking, deduction, imagery, auditory representation, keyword (e.g. mnemonic), contextualisation, elaboration, transfer, inferencing, clarification requests 3. social mediation: cooperation
Oxford (1990)	Secondary age + adults	Multiple	ESL	1. Direct: I – memory; II cognitive; III compensation 2. Indirect: I metacognitive; II affective; III social

However, as has been shown earlier, this need not be the case. In his review of strategy studies, Cook mentions the 1985 study of O'Malley *et al.*, which showed that intermediate level learners use more metacognitive strategies such as inferencing than beginners, while beginners use less contextualisation, and more translation, imagery and elaboration. In his discussion of the Poulisse study above, he also mentions that with increasing proficiency, learners use fewer strategies. Again, this is based on a more restrictive definition of strategy than the one we are developing here, or that of Oxford (1990), or O'Malley and Chamot (1990). Another feature noted is that strategies vary with the task, because of different communicative assumptions, such as the role of the interlocutor. As discussed above, a sociocultural interpretation of task removes the complications of these inter-task variations.

We will now review some of the studies which examine communication, social, and affective strategies based on cognitive theory and interlanguage models of language learning. Within a cognitive theory model, for example, in the study referred to earlier, O'Malley *et al*. (1985) found that self-report data collected from the children in small group discussions proved more productive than observation or interviews with either the learners or their teachers. While the material for discussion in these groups was based on language learning both in and outside the classroom, it was predominantly focussed on formal learning strategies. This may explain the fact that the strategies which emerged in this and later similar studies emphasised metacognitive strategies with little attention to the social, affective or communication-seeking strategies found by Wong-Fillmore and Naiman *et al*. The findings of the O'Malley *et al*. studies have culminated in the *cognitive academic language learning approach (CALLA)* of O'Malley (1988) and Chamot & O'Malley (1994). CALLA is a complete program designed specifically to train learners in the use of those learning strategies identified in the above studies as being related to successful language learning. This and other training programs will be discussed in section 4.12.

One of the criticisms of strategy studies mentioned by Ellis (1994 – section 4.1.2) is that most of these studies use successful language learners as subjects. However, in order to determine the nature of the relationship between strategy use and success in language learning, it is also necessary to examine the strategy use of less successful learners. In one of the few studies to include both high and low proficiency learners, Huang and Van Naerssen (1985) focussed on strategy use outside the formal language classroom.

The methods used in their data collection were based on the Bialystok model mentioned earlier (Figure 4.7) which postulated formal practice, functional practice and monitoring as being strategies critical to successful language learning. Their results, collected from both interviews and a questionnaire, showed that while high and low proficiency learners showed no significant differences on the factors of formal practice and monitoring, differences were identified for the social and metacognitive areas. Specifically, the higher proficiency learners sought opportunities to speak and use the L2 with other students, teachers, and in group discussions (social strategy) and made efforts to think in English (metacognitive). It could therefore be hypothesised that social and metacognitive strategies are influencing factors in successful language learning.

However, care must be taken in extrapolating a causal relationship from these results, since these subjects, like those in the study by Naiman *et al*. (1978), were graduates of a Foreign Languages Institute. They were therefore already successful language learners. Also, as this study was not longitudinal, it is not clear whether the high strategy users achieved their high proficiency as a result of their use of strategies, or whether they were able to use more strategies because of their high proficiency. A longitudinal study might reveal a progressive emergence in the use of the strategies exhibited which would help resolve these questions. Nevertheless, as has now been shown by other studies to be discussed in later sections (Green & Oxford, 1995), lower proficiency learners can benefit from instruction in some of the strategies identified as being associated with high language proficiency, depending on their leaning styles.

In relation to Strategy 1 of Naiman *et al.* (1978: 103), that good language learners are active in the process, Reiss (1985) makes the point that learners can be active though silent. By this is meant that it is not necessary for some learners to speak to others, since they can be mentally checking their own models and proposed responses against others' attempts in an active way (a metacognitive strategy). In an earlier study (1983), Reiss also makes the point, reconfirmed later by Skehan (1989), that good language learners have the capacity to manipulate and deal with disembedded or de-contextualised language that helps them achieve high proficiency scores. Again, therefore, we see the association of learning strategies with learning style and aptitude – that while all of these characteristics are found among good language learners, it is not necessarily possible to separate them completely, or attribute causal relationships. What is reiterated by Reiss' data, though, is that there is a set of metacognitive and or metalinguistic strategies that is clearly being exploited by successful learners.

In an investigation of good language learners' attitudes towards teachers, Pickett (1978) concluded that while good learners need clarity, logic, and systematicity from their teachers, they do not necessarily imitate these characteristics. Rather, they use teachers as 'informants', sounding-boards, or models, instead of relying on what teachers tell them about language. This again reflects both the cognitive and the metacognitive sides of strategy use – thinking about the language they are exposed to, analysing it, and testing out their hypotheses about how it operates. Subsequently, Lennon (1989) hypothesised that a critical feature of successful language learning may be the ability to take a flexible, task/context-dependent choice between attending to either meaning or form.

Finally, a well-known researcher in the humanistic aspects of language teaching and learning, Stevick (1989), prefers to avoid the term 'strategy' completely. Instead, he has looked for the 'overall pattern' among the seven successful learners in his study. He

maintains that, although his learners differed vastly in their approaches to learning, he could discern some patterns in their perceptions, interpretations, and methods of storing information in memory. In taking this approach, Stevick foreshadows the rather different perspective taken within the framework of the sociocultural theory. In this framework, Stevick's conclusions could be interpreted as indicating the emergence of a classroom culture mediated by the learners and the symbols and tools available to them. That is, while participating in the activities of the classroom community, through interactions with each other and their teacher, his learners are being socialised into a 'community of language learning practice' (Donato & McCormick, 1994: 453), developing, reflecting upon, and refining their own language learning strategies. Thus, the patterns that Stevick has observed represent the detection and internalisation by his learners, of the sociocultural norms of his classroom. Stevick's observations also demonstrate the capacity of learners for the dynamic creation of such norms.

4.5.2 Research approaches and problems

Researchers into language learning strategies have long struggled with criticisms of the research methods they employ and the difficulty of data collection. Another area of criticism arises from a possible ethno-centric bias in strategy inventory questionnaires, and the question of cross-cultural applicability of both the investigation tools and the implication of findings from strategy studies. The predominant research methods used are: observation, implying that cognitive processes can be inferred from behaviour; introspection accompanied by self-report; immediate post-report; interviews; questionnaires; or some combination of these.

As mentioned in the introduction of this chapter, one of the problems faced by researchers cited by Ellis (1994: 558) is that the retrospective and introspective methods of data collection, which are the predominant methods used in strategy studies, are often unreliable, or at least open to criticism as being so. The only strategy studies which are possibly exceptions to this lack of reliability are the vocabulary studies in which variables

can be much more constrained, and these will be discussed in detail in section 4.7. By way of example of some of the problems with research methods, two well-conceived studies that found disappointing or conflicting results, using self-report questionnaires for data collection, are worth mentioning here.

In 1981, Bialystok attempted to determine the relationships between strategy use and language achievement, based on her own (1978) model of second language learning, using questionnaire data from secondary students of French in Canada who had been learning this language from Year 6. Questions used a rating scale based on learners' perceptions of their strategy use for both oral and written tasks in functional and formal settings. From this data, Bialystok was able to show that a stronger relationship existed between achievement and functional practice than with any other strategy, though inferencing and monitoring were reported as being used more frequently. This issue was taken up in the study by Huang and Van Naerssen (1985) mentioned in section 4.5.1. Few of her other correlations were found to be statistically significant, though she did maintain, as reaffirmed by Huang and Van Naerssen, that inferencing was a strategy associated with higher proficiency learners.

In a study of adult ESL learners from two ethnic groups – Hispanic and Asian – Politzer & McGroarty (1985) used a questionnaire approach based on Bialystok's (1978) model of second language learning (Figure 4.7) discussed earlier. Because of a range of difficulties, such as the disparity in cultural values, and questionnaire item interpretation between the two ethnic groups examined, Politzer and McGroarty's study produced a number of inconsistent findings. Nevertheless, as a starting point for an examination of cultural influences on the field, four interesting inferences that can be extracted from the information elicited are that:

(i) learners' goals seem to determine their strategy choices;

(ii) rather than being employed in isolation, clusters of strategies seem to be related to each other and certain kinds of tasks;

(iii) there seem to be culture-based differences in the use of and receptiveness towards the use of different strategies;

(iv) learners may not necessarily be able to report accurately on their own use of strategies - a general problem of strategy research discussed in more detail later in this section.

Point (i) is subsequently supported, both by O'Malley & Chamot (1990:137) and by Oxford (1990: 17). O'Malley & Chamot, for example, identify the Metacognitive Strategies 'directed attention' and 'selective attention', while Oxford identifies the Metacognitive Strategy 'centering learning' and the Cognitive Strategy 'creating structure for input and output'. Points (ii) and (iii) have proven to be very insightful, and several researchers (Green & Oxford, 1995; LoCastro, 1994) have subsequently carried out studies, discussed below, which have confirmed these inferences.

With reference to point (iii), Abraham and Vann (1987), for example, also using Asian students as subjects, found that the inability to be flexible in choice of strategies correlated with unsuccessful language learning. Their research seemed to indicate that it was the misperception on the part of the students of which strategies were useful and effective that produced their failure within their ESL (United States) context. As Politzer and McGroarty found, Asian students seem to value different strategies from other students, and be less flexible about learning to use new ones.

In a study of Japanese learners of English, LoCastro (1994) used a combination of Oxford's SILL (Strategy Inventory for Language Learning, 1990) and interviews to determine the techniques or strategies used. LoCastro was able to confirm the findings of O'Malley *et al.* (1985) that strategies involving imagery and vocabulary, as well as two reading strategies on the strategy inventory, were of low use with Asian learners. Nevertheless, her more interesting results were discovered on comparison of her subjects' responses to the SILL as against the oral interviews. For example, strategies mentioned in the interviews by subjects as being used most frequently in reading were

vocabulary strategies – a clear contradiction of the data collected from the Strategy Inventory, in which learners rated vocabulary-related strategies as very seldom used. From these and other similarly surprising results, LoCastro concluded that the problem lay in value-laden characteristics in the structure of the Strategy Inventory classifications. She hypothesised that, in cultures as different from the American as the Japanese, the same strategies may play different roles on grounds that:

> values and beliefs of a learning context influence every aspect of educational practice, including the aims of the learners, the methods, and consequently the strategies used to achieve what that setting perceives to be a high level of competence in an L2.
>
> (LoCastro, 1994: 413)

She went on to advocate further ethnographic research in order to refine the instruments used to elicit data on learning strategies in different learning contexts, particularly among learners in difficult learning circumstances, those outside of mainstream schools and universities, and outside of North America. In this she is supported by Reid (1987) and O'Malley & Chamot (1990). The study by Green & Oxford (1995) discussed in the next section goes some considerable way towards addressing this problem within the same paradigm. However, sociocultural theory, particularly the dynamic negotiation and construction of shared meaning within a context, provides a more comprehensive explanation.

According to Donato and McCormick, for example, 'the social life of the classroom is central to the issue of an individual's strategy use' in that it can be conceived of as 'a social arena in which learning is constructed as gradually increasing participation in the values, beliefs, and behaviours of a 'community of practice' (1994: 454). This socialisation interpretation of the role of strategies has two major implications. Firstly, direct instruction may well not be the best way of developing effective strategy use among a community of learners; and secondly, the strategies to be developed must be

seen as valuable by this community for them to be employed. These two issues will be further elaborated later in this chapter. Interestingly, from within a social psychological paradigm, MacIntyre (1994) also proposes that the development of new strategies hinges on their perceived usefulness or value, though he advocates the restriction of the definition of strategies to only those techniques that are deliberately chosen by learners.

4.6 Bringing together different perspectives in strategy studies

In a series of studies on developing learner autonomy and making language learning more self-directed, Wenden (1983, 1986, 1987) encourages learners to reflect on their own language learning and how they view it. She emphasises skills of defining and analysing one's own approaches and progress, in order for learners better to plan their learning by structuring the learning approach and their priorities. Once again, these strategies find correspondence in the metacognitive strategies identified by O'Malley and Chamot (1990: 137): planning, self-management, problem-identification, and self-evaluation, and in Oxford's (1990: 17) metacognitive strategies: centring your learning, arranging and planning your learning and evaluating your learning.

Several other researchers (Nation & McLaughlin, 1986; Chamot *et al.*, 1987 & 1988; Politzer, 1983) have investigated the influence of situational and social factors such as language learning experience and level of proficiency corresponding with increases in strategy use. These findings show that learners of Russian (Politzer, 1983), and learners of French and German (Chamot, 1987), use more strategies than do learners of Spanish. From this data, both Chamot and Politzer concluded that the language being learnt is an influencing factor on the number and kind of strategies used. As Oxford (1989) has commented, however, this may be because it is the more able students who choose languages not commonly studied (in the United States). Another possible explanation is that the less able students are pressured into learning languages such as Spanish which are perceived as being easier to learn. Though the properties of the languages, or how they are taught, may also be contributing factors, there is insufficient evidence to support

these proposals. As the researchers mentioned above suggest, the more likely cause for a greater number of strategies being used is learners' generally higher language learning ability or interest, both of which, as discussed at length earlier, have been associated with greater strategy use.

Another social factor to be investigated has been gender. Oxford & Nyikos (1989), for example, found that females used more conversation input elicitation strategies (a Social strategy – Oxford, 1990) than males, while Ehrman (1990) determined that females used a greater variety of language learning strategies overall than do males. In a large-scale study of strategy use among students at the University of Puerto Rico more recently, Green and Oxford (1995) again found higher levels of strategy use among women than men, with more successful learners also reporting greater strategy use. The explanation given for the higher use among women is that the higher-use strategies are global strategies. In the previous two chapters, evidence (Ehrman & Oxford, 1989; Bacon, 1992; Felder & Henriques, 1995) has already shown that women are more inclined to be global learners. Another explanation proposed is the well-documented tendency for women to engage in more conversational behaviour (Lakoff, 1975; Tannen, 1986, 1990), illustrated by the higher proportion of social and affective strategies reported for women than for men.

Probably the most significant finding in any of the most recent studies on language learning strategies within this paradigm was in the study by Green and Oxford (1995): the identification of what the researchers call 'bedrock strategies'. These strategies are described as being used 'frequently or moderately by learners at all levels', though supplemented with strategies emphasising 'active, naturalistic practice' by more successful learners (1995: 261). It is the identification of these bedrock strategies that helps to explain some of the previously identified problems or discrepancies among research findings, namely, the fact that many strategies seemed to be common to both successful and less successful learners (Porte, 1988; Rees-Miller, 1993), and the

questions as to which strategies when used together are effective (Rubin, 1987; Wenden, 1987; O'Malley & Chamot, 1990; Mangubhai, 1991). Green and Oxford recognise that this distinction between bedrock and supplementary strategies which are more active and naturalistic will need considerable further investigation, and that the classifications need refining. However, their data do provide us with further evidence for the interaction among groups of strategies, and the relation between these and learning style.

Another dilemma in learning strategy research has been the directionality of the causal relationship between language learning success and the use of learning strategies (Skehan, 1989: 139). Recent research by Mangubhai (1991), using concurrent think-aloud techniques as well as immediate retrospective reports and interviews at the end of instructional sessions, has produced some tentative evidence for the direction of causality. By using careful and appropriate achievement testing to divide learners into high and low achievement groups, and studying beginners over a period of time, Mangubhai's study provides some evidence that more frequent use by more successful learners of certain strategies allows them to process or extract meaning more effectively from the available input, thereby increasing their performance on measures of language proficiency. However, as there were only five subjects in this study, generalising from this evidence is difficult. In a subsequent study, Mangubhai *et al*. (1994) attempted to employ strategy training modelled on the 'reciprocal teaching' of Palincsar and Brown (1984) to investigate the effect on the reading success of adult ESL learners. Their results did show some improvement towards the end, though not as marked as that of the model study. An interesting feature which emerged from this investigation was that learners perceived the value of the strategies retrospectively, though individual learners admitted that during the study, they tended to choose only a single strategy of the four being trained, and to concentrate on these.

As mentioned in the Introduction, and illustrated elsewhere, one of the difficulties experienced by strategy researchers has been the problem of identification and isolation

of strategies. In the investigation of strategies to improve the learning of vocabulary, this difficulty has been overcome to some extent by limiting the scope of the task, and therefore restricting the number of useful strategies. Research in this area in second language learning has focused on two specific skills: memorising isolated lexical items using either paired associate techniques ('peg word method') or the 'keyword method' in which auditory and imagery links are used; and learning new words in context, together with the strategies used by learners to acquire these. As memorising is a strategy group identified by Oxford in one of her two major categories – *Direct* strategies, and making auditory links is also identified as a member of this group (see Figure 4.3), a selection of studies investigating these skills is presented below.

4.7 Learning strategies and vocabulary studies

The Peg Method, though not as well known or well researched as the Keyword Method, will be reviewed first. This method relies on the association of the list of words to be remember with a previously memorised set of pegs or hooks, such as rhyming words. Each new word is visualised in association with successive pegs in the memorised set. The most prominent study using this method was that of Paivio and Desrochers (1979). These researchers instructed their English L1 subjects in the memorisation of a set of pegs in French, and then had them associate with these French pegs, a list of new French lexical items. Subjects using this technique were found to be able to remember twice as many words as when they simply memorised unassociated lists.

The Keyword method, on the other hand, was developed by Atkinson (Atkinson, 1975; Atkinson & Raugh, 1975) and relies on subjects creating a mental image of a new L2 word by associating its sound with that of a familiar word from the L1. Atkinson and Raugh (1975), working with adult subjects in several foreign languages, found this method effective for both immediate and delayed recall, and that vocabulary items memorised in this way were retained longer. Using anecdotal (self-observational) reports from English L1 students of associations they made in memorising vocabulary lists of

Hebrew words, Cohen and Aphek (1981) found that forming mental associations seemed to aid retention, while the frequency with which the words were encountered outside of class did not. Students were asked to select their own list of words to learn from a reading passage and write in the margin any mental association they made to help them remember these words. The researchers also discovered in this study that the most popular strategy among learners doing this task was straight memorisation. Words learnt in this way, however, tended not to be retained over time.

In a follow-up study (1980), the same researchers instructed their student subjects to use association to aid in the memorisation process, and specified a list of suggested types of associations, such as by meaning, personal experience, visualising the word, or mental image. In their test for vocabulary retention, these students were also required to write down the associations they used in remembering them. Cohen and Aphek analysed students' performance on a series of such tests on the same vocabulary items over a period of weeks, and found that maintaining the initial associations enabled students to remember words better than either using a variety of associations, or using none at all.

As Thompson (1987) notes, the Keyword method worked equally well for learners of high and low language ability, and seemed to aid both recognition and production of single words (Pressley *et al.*, 1980). It was also found to be more effective than other methods, including using meaningful context, for the memorisation of both L1 and L2 vocabulary items, and to be particularly effective when the keywords were self-selected by learners with richer vocabularies (Pressley, Levin & Delaney, 1982).

Brown and Perry (1991) investigated the comparative success of three vocabulary learning strategies comprising: the keyword method above; a semantic strategy such as relating new words to the learner's existing semantic system; and a combination of these two. An interesting facet to this study was the theoretical grounding of the hypotheses in depth-of-processing theory (Craik & Lockhart, 1972 – see also section 3.4.4.4 in the

previous chapter). Brown and Perry hypothesised that the keyword strategy would require a 'shallower' level of cognitive processing than would the semantic strategy, but that the deepest level of processing, and therefore the most effective retention, would be achieved through a combination of both the shallow keyword and deeper semantic strategies. This was, in fact, shown to be the case on tests of cued-recall and multiple-choice with six advanced level classes of EFL learners.

While the concept of depth-of-processing is useful to our understanding of how memory relates to retention and retrieval of information, for the purposes of listening and viewing comprehension in a self-access CELL environment we need to focus on learner self-management and autonomy. To this end, we need to identify which, if any, of the learning strategies emerging from the studies we have reviewed are implicated in the development of learner self-management or autonomy in a CELL environment. These strategies, then, will form the basis of the awareness-raising activities incorporated into the software.

From the previous discussions, it would seem that certain metacognitive, or *Indirect* in Oxford's (1990) terms, strategies are critical to the development of these self-management skills. In addition, several researchers have reported the relative efficacy of combined instruction of both cognitive and metacognitive strategies over isolated instruction in either cognitive or metacognitive strategies alone (O'Malley & Chamot, 1990; Rubin, 1987, 1994). Other studies have provided evidence for the efficacy of integrated content and strategy instruction for strategies involved in developing listening and viewing comprehension skills (Rubin, 1994). We are now ready to review the sociocultural perspective on language learning strategies, to arrive at an infrastructure on which to pin the subsequent discussion of taxonomies of strategies, education in the use of strategies, and the application of strategy awareness-raising in CELL.

4.8 Sociocultural perspectives on language learning strategies

The adoption of a sociocultural approach in the examination of language learning strategies entails viewing the emergence of strategy use from the perspective of four major concepts of sociocultural theory. These are (1) mediation, (2) goal-oriented or situated learning, (3) the Zone of Proximal Development (ZPD), sometimes termed 'apprenticeship learning' (Warshauer, 1996), and (4) and the 'community of practice' proposed by Donato and McCormick (1994).

4.8.1 Mediation

In sociocultural theory, as conceptualised by Lev S. Vygotsky and his colleagues, 'higher forms of mental activity are always, and everywhere, *mediated* by symbolic means' (Lantolf, 1994: 418). By mediation, whether physical or symbolic, is meant the employment of some catalyst which allows connections to be made between humans and their own (internal) mental world, or the (external) physical world. In Vygotskian terms, the most important symbolic tool for this mediation process is language, which can be used to organise, plan, and maintain the environment both internal and external to the individual. A critical feature of the use of language for internal mediation is what is termed 'inner speech' or 'private, speech', or those utterances of an individual which are not other-directed, but are rather used to organise one's own mental processes and activity. Private speech mediates or represents a bridge in the process of internalisation of cultural norms and patterns of activity, from modelling of others, to appropriation, and to independent self-mediated processing.

Within this paradigm, communication strategies and social strategies, often excluded from language learning strategies by researchers within the interlanguage and psycholinguistic paradigms, can be incorporated as sets of language learning strategies. In other words, communication strategies are used to communicate, while at the same time improving communication. That is, the mediation process of employing communication and social strategies to communicate improves both the communication

and the learning. By seeking clarification (a communication strategy), for example, the learner both receives clarification of meaning, and discovers her/his level of success in using the strategy, constructed and delivered in that way. The level of success can be judged by the learner on the basis of the appropriateness of the response to the learner's expectations. This change is, 'therefore, a social process *and* sociocultural mediation is the central means through which change occurs' (Jacob, 1992: 323). Unlike the cognitive and social psychological theories, in which strategies in language learning are seen to be relatively static, and generalisable from tasks and contexts, sociocultural theory focuses on the influence of language tasks and contexts in bringing about the dynamic emergence of strategic approaches in individual learners.

4.8.2 Goal-oriented (situated) learning

Within this paradigm, then, education or awareness-raising in the use of more desirable or effective strategies is achieved through the mediation of situated activities that allow learners to model, appropriate and achieve self-mediated processing, rather than by direct instruction. However, as Gillette (1990) reminds us, it is important that strategies implemented in the classroom culture are actually directed towards language learning goals. One example she gives is the multiple goals, including some that are possibly antagonistic to successful language learning, achievable through the employment of the same strategy. To illustrate, guessing words in context is often seen as an effective strategy. However, other goals of this strategy could also be to save time, to avoid using a dictionary, or even to avoid engaging in the language processing necessary to successful completion of the task. In this respect, activity theory (Leontiev, 1981) provides a more incisive view of the definitions of strategies, with its focus on the influence of the sociocultural settings of activities on the strategic operations of individuals with their communities.

In a discussion of their study of the use of a performance-based portfolio procedure with a fifth semester university French conversation course, Donato and McCormick also

stress the importance in sociocultural studies of what is called the genetic method. By this they mean the emphasis on the genesis of phenomena in 'culturally-specific situated activity' and the study of its process of change (1994: 454). In this study, learners self-selected pieces of their work, reflected on the problems, difficulties, and positive aspects of this work, and produced self-assessment of the work in terms of their language development every three weeks throughout the semester, as well as a summary overview at the end.

While Donato and McCormick do not disagree with those researchers who maintain that the teaching of language learning strategies can itself be regarded as a mediator in language learning, they stress that these strategies are situated in the higher levels of mental processing, which are not uniformly developed. In fact, their study shows this, lending weight to the argument for the sociocultural approach of encouraging a more strategic task orientation, where 'strategic activity is seen as inherently goal embedded' (Stone, 1989: 36). This again reinforces the point made by Gillette above, that because the one strategy may be employed with several (and possibly conflicting) goals in mind, it is important to focus on constructing strategic tasks which provide the context for, and foster the use of, higher level mental processes - the metacognitive and higher cognitive strategies of researchers in other paradigms.

In a CELL context, this implies that in order for a software package or program to foster in learners the development of higher mental processes, it must provide an environment based on making available a range of strategic tasks, while also providing information on the purposes of these tasks, to encourage self-reflection and new strategic orientations in learners' actions. Ideally, learners using such a package should be able to choose their own tasks on the basis of information provided about them, on the basis of their own language learning (and other) goals in using the materials. In other words, the choices they make mediate their interaction with the materials. They should thereby be able to identify for themselves those areas in which they need more practice, as did the learners

in Donato and McCormick's study. This perspective on strategy development would allow learners to take an 'active task approach', identified by Naiman and his colleagues (1978), mentioned earlier, as one of the characteristics of a good language learner.

Donato and McCormick were able to use the portfolio as a cultural tool for mediation in the classroom, enabling students to:

> 1) evaluate past knowledge for relevance through self-assessment,
>
> 2) clarify and set goals,
>
> 3) select effective strategies to enhance task performance, and
>
> 4) provide concrete evidence of strategy use.
>
> (Donato & McCormick, 1994: 463)

These are also realisable in a CELL package 'designed to move students beyond thoughtful consumption to reflective construction of language learning strategies' (1994: 463). Points 2) and 3) above, and 1) to a lesser extent, can be achieved through the provision of a taxonomy of cognitive task demands such as that outlined in Chapter 2, together with the descriptions of task types which embody these demands. The actual tasks can be designed to incorporate a range of language learning strategies as identified in taxonomies such as Oxford's (1990), including awareness-raising in aspects of paralinguistic features and a distribution across higher and lower level strategies. With such information, some necessary experimentation, and self-reflection, students make their selections or choices of tasks to complete, on the basis of self-perceived need. Records progressively updated on learners' choices of tasks provide both learners and teachers with 'concrete evidence of strategy use', as mentioned in 4) above.

4.8.3 The Zone of Proximal Development or 'apprenticeship learning'

Selection of, or access to, progressively more detailed feedback or help within this CELL package could also be framed in keeping with a sociocultural perspective. In an interesting study to investigate the role of negative feedback on regulation and second

language learning in the Zone of Proximal Development (Vygotsky, 1978), Aljaafreh and Lantolf (1994) identified three characteristics of effective intervention mechanisms. They found that intervention should be *graduated*, *contingent* (offered only when needed), and *dialogic*, or negotiated between the expert and the novice (1994: 468). Thus, the help is offered by a more experienced member of the joint activity, and begins at a highly implicit It is subsequently *graduated* down to the level of specificity needed by the novice member. This help is also *contingent*, in that, as the novice becomes more able to function independently, the level of directiveness and specificity in the help is progressively reduced. This progressive assessment of the learner's needs, and tailoring of help to meet them, is only possible through the '*dialogic* activity that unfolds between more capable and less capable individuals' (1994: 468). Additionally, as Donato describes 'scaffolding' inherent in the process of learning in the ZPD concept:

> the metaphor implies the expert's active stance toward continual revisions of the scaffold in response to the emerging capabilities of the novice (Rogoff, 1990). For example, a child's error or limited capabilities can be a signal for the adult to upgrade the scaffolding. Conversely, as the child begins to take on more responsibility for the task, the adult dismantles the scaffold, indicating that the child has benefited from the assisted performance and internalized the problem-solving processes provided by the previous scaffolded episode.
>
> (Donato, 1994: 41)

Implications of these findings for feedback in the CELL package under development here are supportive of the notion of self-managed access to the help and feedback facilities, and a 'layered' construction of these features. By this is meant that individual learners (the novices) determine when they want to have access to any of a range of help facilities available, but that these facilities are designed as successive layers, the deeper and more extensive or explicit help only being accessible from the layer above. Thus, at the top level, a learner may only need access to whether an answer is correct, or to the meaning of a word. Meanwhile, at the deepest level, the full transcript is available with words

highlighted in the text as they are heard. Also provided is a word gloss and a full reference grammar which can be searched by topic.

4.8.4 The dynamism of the 'community of practice'

As a final note towards the sociocultural framework for the development of this CELL listening and viewing comprehension package, it is useful to review the concept of interactivity as employed in this paradigm. Platt and Brooks, for example, in their study of the validity of the term 'acquisition-rich environment' stress that this term derives from the *conduit metaphor* incorporating language *input* and *output*. This conduit metaphor 'obscures the fact that comprehending is a function of individuals, not of spoken or printed input' (1994: 499). In other words, the learner's interaction with the language, and the dynamic creation process are just as important as the language itself. It is these strategies of interaction with the target language, and creation of meaning that enable learners to participate in the target language culture. In their study of on- and off-task language of learners participating in problem-solving tasks, they found that learners were not so much '*in* an acquisition-rich environment' as 'they *created* or *constructed* a context through their *use* of the target language to solve a problem' (Platt & Brookes, 1994: 504).

For the purposes of an instructional design framework within the sociocultural paradigm, this concept of learners creating and constructing meaning implies that learner choice and self-management of activity is critical, both in the tasks to be done, and in the navigation through the feedback and help facilities. On another level, since 'learners need opportunities to engage in analogous kinds of problem-solving tasks in order to become better at doing them' (Platt & Brookes, 1994: 509), it is important to provide several tasks of each kind at each level for learners to use. Such a taxonomy as that outlined in Chapter 2 provides learners with a informative context for making choices, as well as information on the level of difficulty of tasks available.

4.9 Reinterpreting and redefining language learning strategies

Where, then, does the plethora of language learning strategy studies from interlanguage, psycholinguistic and pedagogic perspectives fit into a sociocultural view? As mentioned earlier, the verification of the existence of strategies, their identification, and the compilation of lists and taxonomies, are necessary and useful to any investigation of techniques or programs to improve learners' learning. However, rather than aiming for the development of higher level or more effective strategies by means of explicit instruction, socioculturalists emphasise the provision of a dynamic strategic environment in which strategies become explicit to learners as their awareness of their use of them becomes clearer. As we saw in the previous section, with increasing awareness of their goals and the strategies they use to achieve these, learners employ strategies with progressively more precision (Aljaafreh & Lantolf, 1994).

Having examined a wide range of studies on the nature, identification, and classification of language learning strategies, we should now be able to construct a taxonomy of language learning strategies that fits within a sociocultural framework. Firstly, let us review the definitions proposed by some of the major protagonists in the field. How do they view the nature of language learning strategies, and the inter-relationships between them? We will then examine how these researchers have conceptualised the role of these strategies in the language learning experience, and finally, arrive at a sociocultural model for presenting these strategies to learners in a CELL environment.

4.9.1 Principal parameters of language learning strategies

The major researchers attempting to classify language learning strategies are mostly in agreement that strategies involve mental processing, that more than cognitive engagement is involved, and that there are at least two dimensions to strategies which learners use: a cognitive dimension and a metacognitive dimension. For Wenden, for example:

> Cognitive strategies are mental steps or operations that learners use to *process* both linguistic and sociolinguistic content.
>
> (Wenden, 1991: 19)

while

> (s)elf-management strategies are utilized by learners to *oversee* and *manage* their learning.
>
> (Wenden, 1991: 25)

O'Malley and Chamot, however, add an additional dimension, namely social/affective, where:

> *metacognitive strategies* are higher order executive skills that may entail planning for, monitoring, or evaluating the success of a learning activity (Brown et al. 1983)

and

> *Cognitive strategies* operate directly on incoming information, manipulating it in ways that enhance learning

while

> *Social/affective strategies* represent a broad grouping that involves either interaction with another person or ideational control over affect.
>
> (O'Malley & Chamot, 1990: 44-5)

This last category represents an attempt to incorporate a recognition of the role of interaction in the creation of meaning, and the dynamic effect on strategy use effected by the presence of an interlocutor, though these are explained more fully in sociocultural theory. It is not quite clear why Social and Affective Strategies have been grouped together here, except possibly on the basis of some recognition of the role of affective processes in interaction in language learning. However, those strategies which O'Malley and Chamot identify as being affective in nature, such as 'self-talk', seem to be represented as an activity, rather than as a category of strategy. Furthermore, another Affective Strategy, 'self-reinforcement' would be better classified as Metacognitive,

because of the self-monitoring and language planning involved. Both of these strategies, though, are directed much more internally, towards an individual's mental processes, or feelings, than externally towards an interlocutor. These features, then, cast doubt on the strength of their role in interaction.

In acknowledgment of this dilemma, Oxford (1990) created a higher level to her own classification, though it shares several characteristics with that of O'Malley and Chamot. As mentioned earlier, this higher level is the classification of strategies into two classes – *direct* and *indirect* – which are then subclassified into two more explicit levels as described below:

> Some learning strategies involve direct learning and use of the subject matter, in this case a new language. These are known as *direct* strategies. Other strategies, including metacognitive, affective, and social strategies, contribute indirectly but powerfully to learning. These are known as *indirect* strategies. Direct and indirect strategies are equally important and serve to support each other in many ways.
>
> (Oxford, 1990: 11-12)

As can be extrapolated from the definitions or conceptions of learning strategies articulated above, there is agreement on several dimensions, namely: strategies include a cognitive component; a social aspect is inherent; and some metacognitive, or language learning management perspective, is also included.

4.10 Towards a sociocultural model of language learning strategies

Having reviewed earlier studies on the nature and existence of learning strategies, where these were focussed, and how the current conceptions have emerged, this discussion will now turn towards a resolution of the major areas of contention that remain, in order to provide a framework for the CELL listening and viewing package described in the next chapter. As discussed earlier in the introduction to the sociocultural perspective, many of the dilemmas in the study of language learning strategies can be obviated by the adoption

of such a framework. The distinction between learning styles and strategies, for example, becomes less of an issue when viewed within the total sociocultural context. Similarly, the sociocultural interpretation offers considerable explanatory power for the question of whether strategy use is, or necessarily must be, conscious, and whether and which strategies can be taught. We now turn to a discussion of the remaining points of concern, and how these are resolved through the adoption of a sociocultural model.

Based on his own review of the literature concerning language learning strategies, MacIntyre (1994), a social psychologist, developed a model of strategy use which is premised on the presence in learners of four conditions. These are:

1. an awareness of the strategies available (this includes an element of intentionality)

2. the impetus to use the strategies (positive disposition towards their use)

3. no apprehension of penalties for using a particular strategy (either administrative or personal)
4. the experience of positive consequences or reinforcement for their use.

MacIntyre's model does incorporate a consideration of situational demands and individual differences such as aptitude and motivation, and to that extent may conform to a sociocultural model. However, it is still working within an information-processing metaphor and, as mentioned in section 4.8.4, such a metaphor is worrying for its conception of language learning in mechanistic input-output terms.

However, a sociocultural interpretation would assist MacIntyre to resolve the dilemma he finds with the failure of strategy training programs because of a mismatch with learners' individual differences or the situational demands. In sociocultural terms also, it

is not as necessary as MacIntyre claims, at least initially, for learners to be conscious of the strategies they are employing. In fact, it is only as learners become progressively more capable of self-reflection (itself a strategy), that they are able to articulate with any precision the goals that they have and the strategies they are using to achieve these. In a self-directed CELL context, in particular, encouragement in the practice of self-reflection is critical for learners to become aware of the strategies they habitually use, and the range of other strategies available to them in the materials provided.

Moving more into the area of specific *language* learning strategy research, we now examine the conceptions and assumptions implicit in various definitions offered for learning strategies. Wenden, for example, when presenting her conception of language learning strategies, claims that they:

> [...] refer to *specific actions or techniques* [...] They are not characteristics that describe learner's general approach, as when learners are said to be reflective, or risk-takers.

(Wenden, 1987: 7)

Further, on the issue of whether learners need to be conscious of the availability of a strategy in order to use it, Wenden states that learning strategies:

> sometimes [...] *may be consciously deployed* [e.g. when something new is being learnt] For certain learning problems, strategies *can become automatized* and remain below consciousness or potential consciousness.

(Wenden, 1987: 7 – emphasis in original)

Bialystok (1984: 43 - 4) finds that consciousness is not necessary to a definition of strategies in language learning. She bases this conclusion on the observation that even young children can be observed employing strategies, though they are by no means conscious of the fact, and certainly not yet at an appropriate level of cognitive maturity.

Meanwhile, in her other observations about the nature of language learning strategies, Wenden comes very close to a sociocultural viewpoint. The features of language learning strategies that she lists, include the facts that they:

> are *problem oriented*. Learners use them to respond to a learning need [or goal-directed in sociocultural terms],

and that they

> refer to language learning behaviors that *contribute directly to learning* - what learners do to control and/or transform incoming knowledge about the language [...]; to retrieve and use this knowledge [...]; *and* to regulate learning;

as well as referring to

> language learning behaviors that *contribute indirectly to learning* - how learners use their limited linguistic repertoire to communicate [...] and what they do to create opportunities to learn and use the language.

(Wenden, 1987: 6-8 – emphasis in original)

Finally, for Wenden the term *learner strategies* refers to 'language learning behaviors learners actually engage in to learn and regulate the learning of a second language' (1987: 6).

From these features identified, Wenden has a clear conception of the role of strategies in the dynamic creation of meaning as explained by socioculturalists (Lantolf, 1994; Platt & Brooks, 1994) and of the regulatory nature of role (Aljaafreh & Lantolf, 1994). In fact, even in her explanation above of the circumstances under which the employment of strategies may not be conscious, she uses the term *automatized* which could equally well describe the endpoint in the sociocultural acquisition of a strategy.

4.10.1 Features of language learning strategies in a sociocultural context

For the purposes of constructing a sociocultural model of language learning strategies that will sit well with a CELL environment, Oxford (1989, 1990) offers the most comprehensive and intuitively appealing classification and description of language learning strategies to date. This classification relies on the distinction between direct and indirect strategies, in which direct strategies can be further divided into memory, cognitive, and compensation, while the indirect classification comprises metacognitive, affective, and social strategies. Figure 4.11 illustrates these, as well as the subclassifications of each which Oxford distinguishes.

As set out below in Figure 4.10, for Oxford, the first and main goal of language learning, and therefore language learning strategies, is communication. By maintaining the priority of this principle, in her taxonomy Oxford clearly illustrates the central role in language learning of communication and social strategies. This is in contrast to researchers such as Canale and Swain (1980) who, in their model of language competence, insist on the isolation of communication strategies on the grounds that they are used 'to compensate for breakdowns in communication due to performance variables or to insufficient competence' (1980: 30). Such a view denies the pro-active or creative role of communication strategies in human interaction.

Figure 4.10 **Features of Language Learning Strategies**

Oxford (1990: 9)

Language Learning Strategies

1. Contribute to the main goal, communicative competence.
2. Allow learners to become more self-directed.
3. Expand the role of teachers.
4. Are problem-oriented.
5. Are specific actions taken by the learner.

6. Involve many aspects of the learner, not just the cognitive.

7. Support learning both directly and indirectly.

8. Are not always observable.

9. Are often conscious.

10. Can be taught.

11. Are flexible.

12. Are influenced by a variety of factors.

In common with Canale and Swain, Tarone (1980) maintains that it is the intent of the strategy that differentiates it, in that *learning* is the goal of a learning strategy, while *communication* is the goal of a communication strategy. In this way, again, the interactive, cooperative, and essentially social nature of human communication is denied, by isolating from each other strategies which are intimately involved in the full range of communication. Social strategies have likewise been denied a role in language learning by reason of their intent. Social strategies were previously seen as essentially instrumental, and not having language learning as their major goal. However, Oxford, in including them in her taxonomy, has also provided a more detailed description of what constitute social strategies, and justifies their instrumental role in achieving language practice as being crucial to language learning.

Having dealt with Oxford's first feature of language learning strategies from Figure 4.10 above, we will now turn to a more detailed examination of her conception of the roles and nature of these strategies, in order to gain a better insight into how this taxonomy can be combined with the taxonomy of listening comprehension tasks in Chapter 2, and implemented in a CELL environment.

The principle of self-direction expressed in 2. above should be accepted in the light of our previous discussion of the advantages and disadvantages of self-direction. As Candy (1987) and Nakhoul (1993) have pointed out, some students neither want nor are capable

of self-direction, without considerable time and effort in awareness-raising. Moreover, as White, (1995) has shown, more strategies of all kinds are used a self-access or self-directed context than in the classroom, but it is the metacognitive strategies that are of primary importance to learners in these contexts. From a sociocultural perspective, in a self-access CELL environment which is strategically-oriented and encourages self-reflection, metacognitive strategies, such as arranging and planning learning, will be developed through interaction with the package.

The expansion of the role of teachers listed as 3. refers to the raising of awareness about strategic approaches to learning necessary among teachers firstly, who can then develop this awareness among learners. This point was exemplified in the portfolio study of Donato and McCormick (1994) discussed earlier, in which the teacher's role developed more in the direction of counsellor, and provider of both resources and encouragement in the task. In another sociocultural study, Aljaafreh and Lantolf (1994) demonstrated the expansion of the role of the teacher to assist in determining learners' Zones of Proximal Development, and to provide tailored feedback appropriate to the learners' needs. For a CELL package, this point would be met by expanding the teacher's role to that of instructional designer of a learner-centred package.

Problem-oriented strategies in 4. would be better described as goal-directed in sociocultural terms, with the strategic orientation being embodied within this approach. In addition, the word 'problem' is better replaced by 'goal', because of the possible negative connotations which the former carries. In the CELL context this can be catered for by incorporating activities based on cognitive skills higher on the taxonomy of Bloom and colleagues' (1956) taxonomy as described in Chapter 2, and exemplified in Appendix B. Point 5. is found fairly consistently throughout the strategies research literature, from the earlier 'active task approach' found by Naiman and colleagues (1978), through to Oxford (1990), and now the socioculturalist emphasis on learners actively creating language in their own 'acquisition-rich' environments (Platt & Brooks, 1994). As

discussed in great detail earlier, many strategy researchers agree with Oxford in 4. that metacognitive strategies, in concert with cognitive strategies, are critical to successful language learning (White, 1995). Oxford takes this further in 6., however, to include social, affective, and compensation strategies. In this the socioculturalists are also in accord, with the need for empathy and other affective strategies seen as being essential to cooperative construction of meaning. In the CELL package described in detail in the following chapters, the range of resources made available to learners, and the navigation and organisational structure for their presentation account for features 5, 6 and 7.

As Oxford explains (1990: 8-9) in relation to 7., social and communication (most of which she classifies as *compensation*) strategies are respectively indirectly and directly related to language learning, and are seen as 'enabling' in this process. In the context of a sociocultural interpretation of strategy use, it is also important to remember the finding of Gillette (1990), mentioned earlier, that treated in isolation, the same strategy may have different goals, not all of which are necessarily conducive to language learning. The context-embeddedness of the goal-directed tasks in a sociocultural approach help to ensure that the strategies used do support learning.

With reference to 8. about strategies not always being observable, this is one of the major problems encountered in research studies, as discussed earlier: that even when strategic behaviours are observed, the observer cannot be certain that the attribution of the behaviour to a specific strategy or set of strategies actually corresponds to what is actually happening. In fact, because of the feature of automatisation common to both the information processing and sociocultural models, once strategies have become internalised, not even the learners using them are necessarily aware of their use. In contrast, the issue of consciousness in 9. is not a major point for socioculturalists, for whom socially-mediated mental processing evolves into self-mediated processing. In this process of evolution, learners' consciousness or not of the process is less important than the collaborative mental effort and self-reflection (a metacognitive strategy critical to all

paradigms) that help to achieve successful learning. The tasks in the CELL package presented here are designed to incorporate both awareness-raising about the strategies inherent in them, and practice in the application of these strategies in a range of contexts, thereby tailoring the package to features 8 – 12.

Many studies from all paradigms, as presented in detail earlier, have produced evidence for 10., that strategies can be taught, even explicitly. Though success with explicit teaching has mainly been with metacognitive strategies, or a combination of these with certain of the cognitive (Wenden, 1991; Chamot & O'Malley, 1994), evidence is accumulating that many more strategies are amenable to training when appropriate learning and teaching styles are taken into account (Dickinson, 1992; Felder & Henriques, 1995; Gremmo & Riley, 1995; Little, 1995). In his overview, for example, Little (1995) stresses the essential interaction between learning styles and strategies, teaching and learning styles, and learners and their sociocultural environments. In his words:

> learning is never solitary or solipsistic. The psychological interaction that drives developmental and experiential learning typically proceeds within a framework of social interaction.
>
> (Little, 1995: 178)

The sociocultural studies have also shown that metacognitive strategies such as self-reflection and self-evaluation (Donato & McCormick, 1994), affective strategies such as encouraging oneself, and social strategies such as cooperating with others (Platt & Brooks, 1994), can be cultivated by teachers providing appropriate environments, or through teacher awareness of a learner's Zone of Proximal Development and encouragement of self-reflection (Aljaafreh & Lantolf, 1994).

Oxford's last 2 points above are better viewed from a sociocultural perspective, since flexibility and the influence of a variety of factors, as we have seen, are critical features of this approach to the role of strategies in language learning. Green and Oxford's (1995) study has gone a long way towards increasing our understanding of the nature of strategies, the differences in strategy use between higher and lower proficiency students, and which strategies are commonly and successfully employed as clusters. However, it is only when this is put into a sociocultural framework that other questions, such as those of Gillette (1990) referred to above, can be resolved.

Now that we have reviewed the *features* of language learning strategies proposed by Oxford, let us examine in detail the *range* of strategies that she lists in her taxonomy, and to see how these strategies fit into a sociocultural framework.

4.11 A review of Oxford's taxonomy of language learning strategies from a sociocultural perspective

As can be seen in Figure 4.3 earlier, Oxford classifies her list of strategies firstly into two classes which she calls *Direct* and *Indirect*, reflecting their relative level of involvement in the language learning process. Broadly speaking, Direct strategies are those dealing directly with the processing of language, divided as they are into Memory, Cognitive, and Compensation. Indirect strategies, on the other hand, have more to do with the management of language learning in different domains, and are classified into Metacognitive, Affective, and Social. This classification system is more complete than previous lists, in that it does acknowledge the role that interaction plays in language learning in the form of social and compensation strategies. However, it still falls short of accounting for the full impact of interaction in the creation and negotiation of meaning that is as much part of language learning as it is of communication. This is even more evident when viewed socioculturally, particularly with regard to the role of social and communication strategies on the part of participant learners.

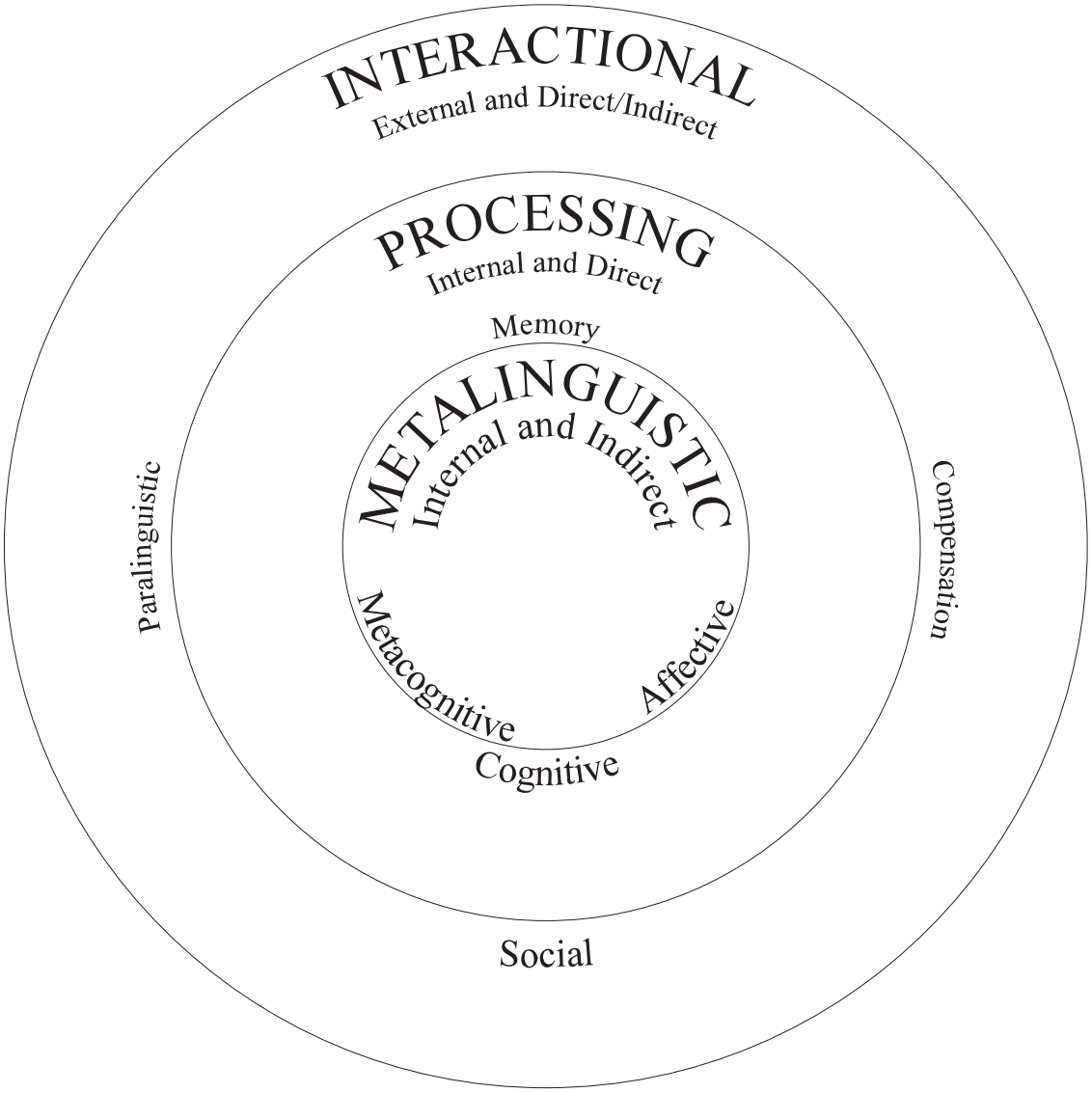
How then can the strategies identified above as being essential to communication and social interaction in the TL be better incorporated into a comprehensive taxonomy of language learning strategies, such as that of Oxford? At the same time, the essential features of Oxford's taxonomy need to be maintained: that some strategies are direct and others indirect, and that social, affective and compensation strategies are all important in language learning. The model advocated here is that an additional level be added to the Direct/Indirect classification to produce a three-layered model. The inner two layers reflect those strategies that are totally internal to the learner's mental and affective states and only indirectly related to language learning (Metalinguistic), as distinct from those that are directly involved in processing language (Processing). The third and outermost layer includes those strategies that are implicated in the interactional negotiation and creation of meaning (Interactional). The sociocultural perspective on the nature of learning strategies is thus highlighted through the overt acknowledgment of the role of paralinguistic, social, compensation (and communication) strategies as intrinsic to the creation of meaning in interaction. Thus, as illustrated in Figure 4.11 below, we have:

a) an Internal and Indirect core of strategies: Metalinguistic;
b) an Internal and Direct level of strategies: Processing; and finally,
c) an Externally oriented set combining some of both Indirect and Direct strategies: Interactional.

Figure 4.11 **Learning Strategies**

Classification according to Application

(original - following Oxford, 1990)



Interactional strategies, comprising Compensation and Social strategies, as well as a new category, Paralinguistic, thus bridge the gap between strategies which have to do with the management of language learning (Metacognitive/Metalinguistic and Affective), as against those which have to do with language processing (Cognitive and Memory). That is, Social, Compensation, and Paralinguistic strategies have to do with the interpersonal,

inter- or intra-textual & interactional aspects of language use. Paralinguistic strategies have been added to take account of the fact that, because of certain individual differences such as mode preference, as discussed in the previous chapter, some learners use gesture, expression, and intonation as creative strategies in communication, and not merely to compensate for communication difficulties, which Oxford's classification could be interpreted as implying.

These Paralinguistic strategies represent the full range of non-verbal, visual, kinesic, prosodic and proxemic strategies that learners use to negotiate meaning when they are not inclined to use, or do not possess, the *verbal* means to do this. They go beyond 'using linguistic clues' and 'using other clues' in Oxford's (1990: 19) 'Guessing intelligently' set of Compensation strategies to make explicit the strategies learners use, both to externalise meanings originating from within themselves, and to interpret meanings that others are conveying to them. (See Appendix D for a detailed breakdown of Paralinguistic strategies and their relationship with other groups of strategies).

By creating this new group of strategies we are emphasising the importance of such strategies in the process of constructing meaning. Learners may use Paralinguistic strategies pro-actively, intuitively, and creatively, not necessarily just because there is a breakdown or problem with communication in the interaction in which they are participating. This addition is particularly important in a multimedia CELL environment where, on the basis of findings from studies by Birdwhistell (1971), Soudek and Soudek (1985), Kellerman (1992), and Hurley (1992), discussed in Chapters 2 and 3, learners' awareness of the non-verbal aspects of communication and interaction in the target language culture can and should be raised. Such awareness-raising in the non-verbal aspects of the target language, which is made possible through the use of multimedia resources as detailed in the following chapters, helps cater for the diverse learning styles and interactions styles of our learners.

Memory strategies, on the other hand, which Oxford classifies as being direct in that they relate directly to the processing of language, should be better classified as indirect, in that they are more to do with the process of making meaning of input, and formulating and activating techniques for storing and retrieving it, as discussed earlier in section 4.4. This reclassification is therefore meant to complement, rather than replace, Oxford's vertically organised Direct and Indirect classification, which remains valuable for the distinction it makes on the basis of distance from within and without the learner.

While Oxford's classification does tend towards features of sociocultural theory, it does not make sufficient allowance for the complex interplay between those factors internal to learners with the more externally-derived sociocultural and interactional factors. In the CELL package to be discussed in the next chapter, the interactional strategies are important only insofar as they are involved in learners' individual negotiation and creation of meaning with listening and viewing texts. In this respect, the compensation strategy of guessing intelligently by using linguistic and other clues, and the paralinguistic strategies, are prominent. It is, however, at the Processing and Metalinguistic levels that the CELL package is most focussed. Because learners are using the package in a self-access situation, it is critical that they are able to use higher cognitive strategies and strategies for managing the progression of their learning. If not, they need to be able to develop these through using the package. To what extent and with what constraints this can be implemented will be discussed in the next section.

4.12 Learning strategy instruction

As mentioned earlier, empirical research on the effectiveness of learning strategy application and training is still relatively inconclusive (Skehan, 1988). There has been some question as to whether time spent on strategy training could not better be spent in language education (Rees-Miller, 1993), and there is some evidence to suggest that both good and poor language learners employ similar learning strategies (Porte, 1988; Vann & Abraham, 1990). While acknowledging that both skilled and less-skilled language

learners employ learning strategies, Scarcella and Oxford (1992: 63) argue that effective or skilled learners 'select strategies that work well together in a highly orchestrated way, tailored to the requirements of the language task'. Scarcella and Oxford use this hypothesis to account for findings such as those of Porte, and Vann and Abraham. At the same time, this hypothesis can also be used to account for Porte's (1988) observations that less successful learners seemed to have less sophistication or sense of appropriateness in their choice and use of learning strategies. In addition, some strategies, such as advance preparation and monitoring input (Jamieson & Chapelle, 1987), have been shown to be effective both as predictors of language learning success, and in improving the language learning process.

In this final section of this chapter, we will examine some of the research studies from non-sociocultural paradigms designed to investigate the effectiveness of instruction on the development or acquisition of language learning strategies, some language learning programs based on the effectiveness of instruction, and the implications and directions these provide for the CELL package under discussion. As mentioned in an earlier section, the different sub-disciplines within linguistics and applied linguistics have had different purposes and aims in their research studies, and this has led to the proliferation of definitions and descriptions of learning strategies, as well as some confusion, found in the literature.

Bialystok (1984: 37) outlines the three main perspectives from which language learning strategies have been investigated: psychological, linguistic and pedagogic. Psycholinguists researching this area have generally started from the principle that the isolation and delineation of strategies will carry explanatory power for acquisition in terms of the mental processes involved (Faerch and Kasper, 1987). Linguists working within other paradigms approach the examination of an understanding of strategies for the explanations it might offer for the phenomena of hypothesis formation, and questions of learners' understanding and awareness of language universals (White, 1987).

Pedagogues, on the other hand, hope to facilitate the process of language learning, particularly for less able learners, by instructing them in identifiably effective strategies (Oxford, 1990; Wenden, 1991; Chamot & O'Malley, 1994). In their study of the development of strategic ability among children in a general learning context, Flavell and Wellman (1977) identified three progressive stages. These were: 1) being unable to perform component skills; 2) being capable but never using them spontaneously; and 3) being able to both recognise opportunities for their use and use them spontaneously. As Bialystok (1984) recognises, these stages could also apply to the development of strategy use among adults learning a second language.

Based on these three stages of strategic development, Bialystok argues in support of strategy instruction, as some learners of lower aptitude, or different learning styles, may never reach the third stage in all strategies without some assistance. For children, instruction may enable them to move from Stage 1 to Stage 2 or 3 more quickly, and for adults, from Stage 2 to Stage 3. Adults have the additional advantage of metacognitive maturity, allowing them to apply at least some strategies consciously. Elsewhere, in an in-depth study of explicit instruction in the use of inferencing for reading, Bialystok (1993) found that her learners were able to apply inferencing to the specific task and transfer it to another task.

In a study rather similar to that of O'Malley, Chamot, & Küpper (1989), Rost and Ross (1991) investigated the teachability of certain social strategies such as clarification questions for listeners negotiating meaning with native-speaker interlocutors. They found that the specific listening strategies they identified – global reprise, local reprise, forward inferencing, and continuation signals – can be explicitly taught at all proficiency levels, and that 'strategies for listening comprehension can [possibly] be demonstrated and readily adopted' (1991: 266). Another critical finding in this study, which used Japanese L1 learners of ESL, was that 'learners in this study can be taught to use (or encouraged

to use) culturally atypical interactive strategies' (1991: 265). This was achieved through the design of tasks that virtually *required* learners to adopt certain compensatory strategies, even though these strategies were not part of their normal repertoire.

At first glance, the fact that these researchers succeeded seems at odds with findings of other researchers such as Reid (1987), who claim that learning styles preferences, and the choice of appropriate strategies, are strongly influenced by cultural background. Rost and Ross interpreted their success by means of a combined cognitive-social paradigm to contextualise their findings, since neither the cognitive nor the social alone had sufficient explanatory power for their findings. Thus, for example, their learners were taught to go beyond the use of solely global and local (cognitive) strategies of identifying key words, to then use these key words to make inferential propositions, and to query these (social strategies) as part of the on-going process of negotiation of meaning.

In their investigation of the relation between awareness of metacognitive reading strategies and strategy use, Carrell *et al.* (1989) found sound evidence for the success of strategy instruction for those students who do not already use the strategies being taught. Their study involved a group of ESL students, heterogeneous for both L1 and level of tertiary study reached, and concentrated on instruction in two metacognitive strategies: semantic mapping, and relating past experience to a text. They found that such instruction needs to take account of learning styles or individual differences such as aptitude, in that there was a statistically significant aptitude-by-treatment interaction. Thus, in the instructed group, both shallow and deep processors (Craik & Lockhart, 1972; Marton & Säljö, 1976) – the learning style dimensions – performed well on the post-test, while in the control group, only the deep processors did well. These findings provide further evidence for the argument being proposed here: that with consideration of learning styles (Schmeck, 1988: 71), learners can be taught to use strategies that they would not use on their own, and that this instruction improves their language performance. Nunan (1996) also provides evidence that instruction in the use of

metacognitive strategies such as self-reflection, self-report and reflection on the nature of their own language learning processes helps learners extend their strategy use to contexts outside of the classroom.

Lastly, in this chapter, we look at examples of the most prominent of the complete learning programs that have been designed and implemented to instruct learners in the use of learning strategies as well as language learning. This overview will enable us to determine which aspects of strategy instruction have been implemented, and with what degree of success. We will then preview how these successful aspects are incorporated into the CELL software package described in the following chapter.

One example of an integrated approach between language and strategy instruction is that designed and implemented by Ellis and Sinclair (1989), though their focus is exclusively on address strategies. Their model follows a pattern similar to those of other educators in this area in that it involves three phases. The first phase comprises mainly awareness-raising, achieved through the use of tools such as strategy use questionnaires and needs analyses. Direct instruction in seven learning strategies with six areas of focus comes in the second phase. Metacognitive strategies such as self- and language-awareness are introduced first, followed by the three cognitive strategies recognised by Ellis and Sinclair: personal strategies, risk taking, and getting organised. As can be seen from this classification, Ellis and Sinclair differ from most other researchers in their classification of language organisational strategies as cognitive, rather than metacognitive, as discussed above.

In concentrating on the development of what they call ‘academic language skills’ in curriculum content areas for intermediate level ESL students, Chamot and O’Malley (1994) have taken a rather different approach. By focussing on academic skills across a range of curriculum subjects, they have taken a much more integrated approach than Ellis and Sinclair. In this program, they incorporate content area topics, academic language

skills, and 'explicit instruction in learning strategies for both content and language acquisition' (1994: 10). The academic language skills include such higher cognitive skills as persuading, analysing, evaluating and justifying, while the strategy instruction is based on the strategies they have previously identified, namely Metacognitive, Cognitive, and Social/Affective. In designing this program, Chamot and O'Malley have succeeded in the challenging task of putting together research findings from several disciplines, such as second language acquisition, cognitive science and language pedagogy, to produce a practical implementation of the these in the classroom. The CELL software package described in the following chapter is also designed based on an eclectic approach, but is focussed on the *domain* of listening, rather than a specific *content* area.

Another example of an integrated approach has been taken by Scarcella and Oxford (1992) in their 'Tapestry Approach'. However, where Chamot and O'Malley have integrated strategy instruction into other curriculum areas, Scarcella and Oxford provide a much more tightly language-focussed model. By taking a task-based approach and centring their model on the learner and the 'whole context' of the learner, including cultural background and social interactions, Scarcella and Oxford seem to have implemented a sociocultural approach to language learning. In fact, they include a discussion of the Vygotskian principle of the Zone of Proximal Development as one explanation for the commonalities in adult second language acquisition, and claim to be in agreement that developmental factors have a profound influence on second language development. The suggested learning materials presented, however, seem to be unnecessarily structured and pedagogic, and thus not quite in keeping with the sociocultural principles of dynamic creation and negotiation of meaning. In other words, while the philosophy behind the program is grounded on the centrality of the learner in the learning process, the structure of the materials and the progression through them seem to be instruction-oriented, rather than learning-oriented.

The overt purpose of Wenden's program (1991), on the other hand, is to bring teachers to a better understanding of how to change the focus of language instruction from teaching to learning, and the corollary to this is 'making the learner a better learner' (1991: 2). Activities in her program are aimed at improving learners' strategies of self-reflection, self-monitoring and self-evaluation, and the techniques presented for helping teachers achieve competence in assisting their learners to do this are totally consistent with the principles espoused. Wenden thus exemplifies how strategies for developing learner autonomy can be encouraged to emerge, and finally be utilised by presenting reader/participants with a series of learner, teacher, and researcher reflections, as well as modelling these through case studies of implementations.

In a recent overview of the consideration of learning styles and strategies in language learning environments involving computers, Bickel and Truscello (1996) both advocate a broader and more flexible use of computers in language learning, and urge researchers to investigate the interaction between learning styles, strategy use and computer interaction. By developing an instructional design framework that incorporates these considerations, we have also provided a rich environment for the kinds of investigation that Bickel and Truscello propose.

4.13 Conclusion

Thus it seems that, while there is obviously great need and scope for further research in the field, there has been considerable success with a number of programs to instruct learners at varying levels of explicitness in the use of better learning strategies. These programs have been grounded in rather different paradigms, ranging from the discourse and pragmatics approach of Ellis and Sinclair to the cognitive theory approach of Chamot and O'Malley, and the almost sociocultural approach of Scarcella and Oxford. The critical feature of a self-access CELL program, however, as seen from the lengthy discussions above, would have to be a strong emphasis on the development of strategies for learner autonomy and self-managed learning. As numerous research findings have

indicated, in order for learners to function successfully and effectively in a CELL environment, they need to know what they are doing, believe in its value, and be able to act on this knowledge and belief.

In addition, we need to take the broader sociocultural view of the location and role of learners in this environment, to include awareness-raising in the area of strategies that help learners negotiate meaning while working with multimedia texts of various kinds. In this view, and in the absence of a teacher in a self-access CELL environment, the tasks themselves need to model good strategic learning that is appropriate to the learning environment. On the basis of research findings and the information derived from accounts of successful strategy instruction programs reviewed above, strategies incorporated in this model should include awareness raising and practice in the use metacognitive strategies such as planning and managing one's own learning; affective strategies such as lowering one's anxiety; cognitive strategies such as analysing, reasoning, and inferencing; and paralinguistic strategies such as inferring meaning from gestures. The specific framework and techniques for doing this will be illustrated in the following chapters, and in tabular form in the Appendices.

In order for the materials to assist learners to develop within their individual Zones of Proximal Development, elements of the 'mentor' need to be incorporated into the design for navigation through the materials, getting access to help, finding more or less challenging tasks, and making learning choices. As part of this mentoring role, the materials need to provide for a range of learning styles, and to support these through making explicit the demands of tasks, and locating them within a cognitive taxonomy such as the one proposed in Chapter 2. In this way learners are enabled to work through the materials, and be challenged without feeling threatened.

Thus, the program should provide a framework within which strategies assisting the development of control of the progression of learning are found alongside, and

incorporated with, tasks involving other strategies such as cognitive, social, and paralinguistic. In this way, less able learners may be helped towards more informed selection of learning strategies for appropriate tasks, enhancing their learning by assisting them to become more successful *language learners* and *language users*. The following chapter will detail the architecture of such a program, including a rationale for instructional design decisions based on a sociocultural paradigm. This CELL program, it will be shown, provides a goal-directed context for individual learners to become acculturated into the best strategies for them to use to achieve effective learning using the package.