An Examination of the Role and the Effectiveness of the Computer in the Learning of the French Language

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ABSTRACT

In order to construct a suitable theoretical framework within which to examine the effectiveness of computer-assisted language learning, this thesis begins with a review of language learning theory, of the various approaches to learning a second or foreign language, and then an analysis of the computer's relationship to both theory and methodology is undertaken. It is recognised that language exists in two forms: as a rule-governed, structural entity; and as a means to communication. The computer is seen to be useful, either currently or potentially, in relation to both of these forms of language, but is, in fact, most commonly used to help with the learning of the structures and grammar of the foreign language.

The focus in the second chapter is on the effectiveness of computer as an aid to learning the rule-governed side of the French language. Several related issues are examined firstly, before the role of text-based exercises and of feedback are looked at through the statistical results of a series of test procedures. The statistical results indicate that the claims made in favour of these two elements to CALL are perhaps not to be accepted unconditionally. At the same time, the results highlight surprisingly poor performances by the apparently more able students involved in the tests. These may be due to aspects of the computer programs themselves, or, as is more likely, to these students having a greater intuitive knowledge of the French language, which meant that they were disadvantaged by the rule-based approach of the computer exercises.

Other questionnaires confirm initial impressions of a distrust of the computer as an independent language learning tool.

This study concludes that the use of the computer in learning the French language is not always of benefit to all learners, and that the implementation of any CALL programme must be accompanied by an awareness that some of the claims made on CALL's behalf are certainly not to be taken for granted.

INTRODUCTION

The spread of computer-assisted language learning (CALL) over the past few years has been rapid. Many secondary schools and universities have some kind of facility whereby languages can be learned with the aid of a computer. In many cases this burgeoning interest in CALL has gone unchecked and the much-heralded advantages have been taken for granted. Many educational institutions have jumped on the CALL bandwagon, invested in expensive equipment and organised courses for students without properly examining the implications for learning. The central purpose of this research is to search behind the often attractive facade of CALL and to ascertain what are some of the benefits and drawbacks involved in computer-assisted language learning.

Although the examination of CALL lies at the heart of this study, it is the French language which provides the means by which it is undertaken. All the systems and programs which are used form part of the language course for undergraduate students of French at the University of Glasgow. In the main, they are programs aimed at the learning of French grammar, with lexical items being of secondary importance. All the programs are constructed by members of the teaching staff in the French department using the CALIS and EDUCA systems available in the University's language centre. The CALIS system is a shell program, which allows the teacher to type in the material, and which turns this material into exercises based on the cloze procedure. The EDUCA system, on the other hand, is a ready-made series of grammar exercises. This research does not encompass the use of simulation programs, therefore, nor of programs which aim to enhance oral or aural skills. Most of the exercises are of the cloze procedure type, where blanks have to be filled. Since it is possible to test only this type of exercise, and since the vast majority of CALL exercises currently available in French deal with aspects of grammar, it seems reasonable to focus on these areas of CALL.

One obstacle which threatens to arise is the dearth of research into the use of CALL in the learning of the French language. Despite the plethora of programs in French, very little has been written on the subject, and very little practical research has been undertaken. Most of the examinations into CALL have been carried out within the context of English as a second or

foreign language. A translation of the principles of EFL and ESL CALL, and of associated research findings, will have to be made into the domain of the French language. At the end of the day, this may not pose as great an obstacle to the study as may be feared. In many respects, the pedagogical principles remain the same and the only true translation to be undertaken will involve language-specific items.

Although much of the research into the ways language is learned is in English into the learning of the English language, most of the conclusions appear to be valid for the learning of French as a foreign language also. Certainly much of the research in psycholinguistics cannot be said to be language specific, unless one believes that each language group has its own peculiar psychological make-up. This validity must also hold true for the theories proffered by researchers into learning in general, as it is clearly the case that this is a universal phenomenon as language itself is universal. Certain aspects are naturally specific to the French language and these, such as the grammar points involved in the various programs, will be treated as such.

As the methodology of foreign language learning has evolved, and as syllabi are changing in both the secondary and tertiary sectors of education, it would appear to be sensible to investigate this area and the implications therein for CALL.

Communicative competence, with its emphasis on oral proficiency, has become a keyword in foreign language teaching, particularly, it seems, in the secondary sector. Its implementation in schools is beginning to have an effect on the teaching and learning of modern foreign languages in the higher education sector, forcing courses to be restructured or abandoned altogether. Under greatest threat, perhaps, is a grammar-based approach to foreign language learning. Whereas communicative competence has led to several simulation type programs, where the learner is involved in a situation that might be encountered in the foreign language country, and has also led to an attempt to transfer oral practice onto the computer, the majority of CALL programs in French still aim to develop knowledge of the language's grammar. Indeed, there is still a demand for this aspect of language learning both at the secondary and the tertiary levels of education. Communicative competence has not yet swept all before it in a rush to produce fluent speakers of French, and many students and teachers still believe in the validity of learning grammatical rules and linguistic structures.

One trend evident in much CALL research is a tendency to examine the technical details of programming rather than linguistic aims and outcomes. At the birth of CALL there seemed to be a concern to look at its contribution to linguistic pedagogy, but it appears that since then the attraction of the technological side has proven irresistible, and that the linguistic benefits of CALL have come to be taken for granted. The focus of interest has centred upon the sophistication of a particular system, on the elaborate graphics or on aspects of artificial intelligence, where there appears to be a shameless attempt to replace the human language teacher. This has all been to the detriment of linguistic or pedagogical research, and the assumption has been made that all that glistens is indeed gold.

To attempt to counteract this trend, and to define a sound pedagogical basis for CALL in the context of the teaching of the French language, little attention will be paid in this study to the technical details of the programs in question. Certain limits already referred to are imposed in that a broad range of programs is not available for investigation and those that are available deal with grammar using principally cloze procedures. However, these aspects are investigated in more detail in the next chapter of the study, where certain linguistic and pedagogical questions fundamental to foreign language learning are discussed. This discussion is designed to provide a linguistic and pedagogical background before proceding to look more closely at CALL itself.

One possible confusion which must be dealt with immediately is the distinction between a foreign language and a second language. It is generally accepted that by a foreign language we mean the learning of a language which is not the speaker's mother tongue, where learning is not taking place in the country where the foreign language is spoken. By second language learners we usually mean immigrants learning the language of the country in which they find themselves often for the purposes of work or for social integration. For most of the following discussion, therefore, we will be concerned with foreign language learning.

CHAPTER 1 Language Learning and CALL

I intend to move in three steps towards examining directly computer-assisted language learning. The first step I shall take will involve giving a general overview and assessment of various theories concerning language learning. From there my second step will take us into the field of methodology, and I shall attempt to account for the various approaches to the teaching and learning of a foreign language. Finally, the third step will take us on to examine and question the ability of computer-assisted language learning to accommodate various aspects of the language learning theories and methods discussed. It is at this point that I hope to identify where CALL falls short, where it fails to reflect modern theories and methods, and where it not only reflects certain aspects but is more than amply suited to the task.

Language Learning Theories - An Overview

The first thing to be said about the question of language learning theory is that it is a minefield which throws up very few definitive conclusions about how we learn a second or foreign language. I use the word learning here aware of the distinction, set up by Krashen, between 'learning' and 'acquisition'. Acquisition is something which Krashen describes as, 'a process similar, if not identical, to the way children develop ability in their own language'.[1] Unlike learning, acquisition is a subconscious process and it results in acquired competence, where we have a feeling for what is right and wrong in the foreign language. In the case of learning there is a set of rules to which we can refer in order to judge the correctness or incorrectness of a piece of language. This distinction between acquisition and learning is fundamental to Krashen's work, as he calls for classroom teaching, 'to provide intake for acquisition' and not to focus on learning. Here I intend to use the term 'learning' throughout since we are dealing with the conscious learning of grammatical rules in the context of CALL.

Despite the lack of many firm conclusions and the wealth of speculation in the field of second and foreign language learning theory, a large amount of work is being carried out in the field of applied linguistics, and certain strands of thought have tended to emerge. One of the

[1] S.D. Krashen *Second Language Acquisition and Second Language Learning* (Oxford, 1981),pp1-2.

most significant strands to come out of this research, and a point which is mentioned over and over again in both theoretical and practical works, is that each learner is an individual and possesses his peculiar cognitive strategy for learning a foreign language. Before any conclusions can be drawn in any research in second and foreign language learning, therefore, this question of the learner as an individual must act as a primary caveat and should cause us to be cautious in coming to any firm conclusions. This must also be, as seems more and more to be the case, a primary consideration among language learning methodologists as they look at new approaches to teaching a foreign language.

To begin our appraisal of the various theories as to how we learn a foreign language, we will look at the work of several experts, many of whom have been concerned primarily with the learning of English as a second language. One whom I have already mentioned is Krashen, whose work has provoked much discussion among both theoreticians and teachers. Apart from elaborating the distinction between 'learning' and 'acquisition', Krashen proposes two theories regarding the learning of a second language, which have both had an influence on the learning of foreign languages. The first of these is the Input Hypothesis which relates more to acquisition than to learning in Krashen's terms, but which has implications for computer-assisted language learning. The second is the Monitor Theory, which concerns the role of rules in language production.

With his Input Hypothesis, Krashen draws parallels between the child learning his first language and the learner of a second language. He identifies the child's linguistic intake as consisting of $i+1$, that is linguistic input which is comprehensible plus some language which is as yet unknown. For Krashen, the way in which adults speak to young children, their so-called 'caretaker' speech, clearly illustrates this $i+1$, insofar as adults modify their own language to include words that children will recognise, whilst at the same time employing words and structures that the child will gradually assimilate into his linguistic armoury. For the learner, or rather 'acquirer', of a second language this $i+1$ cannot stand alone, but, as with the child learner, must be set within a framework of contextual and paralinguistic elements.The Input Hypothesis is set up in contrast to a grammatically-sequenced approach to language learning, and it is argued that each individual learner will gain something from $i+1$, whereas a programme of learning

based on grammatical structures assumes that all the learners share the same initial knowledge and that some kind of natural grammatical order can be followed.

The second theory which has prominence in Krashen's work is his Monitor Theory, which must be seen in conjunction with the Affective Filter, an idea which he developed in partnership with H. Dulay and M. Burt.[2] With the Monitor Theory, Krashen effectively unites the areas of language acquisition and language learning. He describes the conscious learning of a second language and all that it entails as a monitor of acquired language during linguistic production. In this manner, he posits grammar firmly in the sphere of language learning and sees knowledge of the rules of the second language as something which is consciously applied once acquisition has taken place. There are, however, three conditions to be fulfilled before the Monitor can come into effect, that is before rules become involved in the process of communication. Firstly, the learner must have the time to apply the rules to his acquired knowledge. Secondly, the learner must be aiming to produce a correct form, to be grammatically accurate. Thirdly, the learner must indeed know the rules which he is applying. For Krashen, the Monitor can only come into play once acquisition has taken place.

Like Krashen, many theoreticians look to the processes by which we learn our first language either for some indications as to how we learn a second or a foreign language, or for a model on which to base their own theories of second and foreign language learning. Ausubel, for example, states that in learning a second language the adult learner should not try, 'to circumvent the mediatory role of his native language'.[3] There are those who would argue that the first language naturally interferes with the learning of a second or foreign language, and that to refer to it at all will only increase this interference. Allen, however, rejects this shadowing of first language learning.[4] He argues that the two processes, learning one's first language and learning a second language, are different in that the first relates to a child whereas the second deals with the learner as an adult. In learning the first language the child is, according to Allen, extending his

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[2] H. Dulay, M. Burt and S.D. Krashen *Language Two* (Oxford, 1982).
[3] D.P. Ausubel, J.D. Novak and H. Hanesian *Educational Psychology: a Cognitive View* (New York, 1978), p.76.

[4] J.P.B. Allen and S. Pit Corder (eds.) *The Edinburgh Course in Applied Linguistics vol.3* (London, 1974), p.64.

knowledge of the external world at the same time. An adult learner of a second or foreign language, on the other hand, already possesses a wealth of knowledge about the external world. The mental processing involved in each case, then, takes place for entirely different reasons. The child is building up his primary linguistic knowledge of the world, whereas the adult has access to a range of extra-linguistic factors which can aid in both comprehension and production of the second or foreign language.

Alongside Allen's rejection of constructing a theory of second language learning based on a theory of first language acquisition is the view that language, first, second or foreign, is not solely about a set of rules, but is also a means to communication. Allen states that, 'learning a language involves acquiring knowledge of the code together with the ability to use that knowledge in producing appropriate utterances and in understanding what is said by other speakers'.[5] This view of language is also to be found in Chomsky's distinction between 'competence' and 'performance'. Chomsky uses the term competence to denote an intellectual linguistic capacity, which, in his opinion, we all possess. This 'innate faculty', as he calls it, is to do with an intellectual store of the rules and structures of a language. At one point, he associates competence with the notion of grammar, so establishing that competence refers to the realm of linguistic codes and structures which, for him, is only poorly reflected when we produce language, when we externalize our competence in an instance of performance. Competence is certainly not something which can be observed empirically, whereas performance can, since it is to do with the somewhat imperfect translation of our knowledge of linguistic rules and structures into the realm of communication.[6]

Following on from this significant distinction made by Chomsky comes Hymes with his idea of communicative competence.[7] Hymes broadens Chomsky's term competence to draw what Chomsky calls performance into the sphere of knowledge. In describing communicative competence, he suggests that four questions be posed:

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[5] Allen and Corder, p.67.
[6] N. Chomsky *Aspects of the Theory of Syntax* (Cambridge, Mass., 1965)

[7] D.Hymes, 'On Communicative Competence', in *The Communicative Approach to Language Teaching*, edited by C.J. Brumfit and K. Johnson (London, 1979), p.19.

'1. Whether (and to what degree) something is formally possible;

2. Whether (and to what degree) something is feasible in virtue of the means of implementation available;

3.Whether (and to what degree) something is appropriate (adequate, happy, successful) in relation to a context in which it is used and evaluated;

4. Whether (and to what degree) something is in fact done, actually performed, and what its doing entails.'

Hymes hereby argues that the term competence should be broader than Chomsky's definition, and that it should not be limited to a knowledge of the rules of language. His term 'communicative competence' also includes a knowledge of when and how to employ those rules. Another angle on communicative competence is provided by Littlewood.[8] His basic assumption is that for most learners of a second language the expectation is that they are going to learn how to communicate. He then states that any formal learning should start from this premise and build on it. As Hymes does, Littlewood sets down four skills which constitute the learner's communicative competence. These are:

1. a high degree of linguistic competence;

2. that he must distinguish between forms which he has mastered as part of linguistic competence, and the communicative functions that they perform;

3. that he must learn strategies for efficient communication in concrete situations, such as learning to use feedback etc.;

4. that he must become aware of the social meaning of forms.[9]

For Littlewood, as for Hymes, Chomsky's definition of competence constitutes only a small part of the knowledge the learner must gain in order to master the second language. Littlewood sees language learning, where language is accepted as a means to communication, as a marriage of structural and functional knowledge.

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[8] W.T. Littlewood *Communicative Language Teaching: An Introduction* (Cambridge, 1983).

[9] As a precursor of these four skills, Littlewood claims that the best communicator in a foreign language is not always the one who has a good grasp of its rules. For him, it is often the person who can most effectively process a communicative situation.

Some of what Hymes and Littlewood propose has been translated into classroom practice, to the extent that most current teaching rejects the idea that learning a second or foreign language is simply a question of mastering the rules of that language. The translation of this view of language into teaching practice is, however, a fairly recent development, and it is only since the 1980s that communicative activities have formed the core of the language teaching syllabus in many schools. Language learning is now almost universally recognised as involving learning how to communicate. Indeed, Hymes's reappraisal of Chomsky's ideas led to a wealth of investigation into second and foreign language learning and an array of new courses implementing his ideas in one form or another.

Although the theories of Chomsky and those of Hymes are by no means contradictory (Hymes simply broadens Chomsky's terms) some have tended to imply this and to concentrate too heavily on the more psychological approach of Chomsky or on the more behavioural approach of Hymes. Widdowson, however, has attempted to marry the psychological with the behavioural. For him, learning a language means including both these aspects, language being both a psychological and a behavioural entity. On the pyschological side, he sees that there may be some interaction between the learner's first language and the process of learning a second language. On the behavioural side, Widdowson states that, 'the user does not exhibit, he exploits knowledge, takes his bearings by it, uses it as a resource, but he does not directly project it into use. To present these rules of grammar as a device for users to generate sentences is misleading because it is only the grammarian who is in the sentence generating business.'[10] With this Widdowson at once challenges us to review Chomsky's definition of competence and to take a fresh look at what is involved in Krashen's Monitor Theory.

In examining the relationship between language as a rule-based entity and language as a means to communication, Widdowson focuses on the meaning of the sentence. He, at one point, describes the sentence as, 'the language teaching unit...as a formal linguistic object'.[11] Two types of meaning are identified, the first related to the rules of language, the second related to the desire to communicate something using language. In the first case Widdowson speaks of

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[10] H.G. Widdowson *Explorations in Applied Linguistics 2* (Oxford, 1984), p.230.
[11] H.G. Widdowson *Explorations in Applied Linguistics* (Oxford, 1979), p.89.

sentences having meaning, 'as instances of usage'. He clarifies this elsewhere by stating that, 'they [sentences] express propositions by combining words into structures in accordance with grammatical rules'.[12] This first type of meaning Widdowson calls 'signification'. He continues by examining the other side of what he hopes will be a linguistic balance, where language is primarily a tool for communication. Here he moves up the scale of linguistic units to consider the combination of sentences and parts of sentences, 'when they are put to use for communicative purposes'. He thus distinguishes the rule-based 'usage' from the communication-based 'use' and calls the latter 'value'. Having identified these two aspects of language, Widdowson argues that there has been an over-concentration on usage, on language as a system of rules. Along with Hymes, Widdowson calls for language to be treated more as a communicative entity than as a plethora of rules and structures. He seeks to counterbalance the over-emphasis on the rule-forming aspect of language production, as exemplified in his view by Chomsky's transformational grammar, with a move towards setting this in a communicative framework.

As a result of this view of language as a means to communication as well as a set of rules, a wide variety of approaches to the teaching of second and foreign languages has appeared. These include the situational approach, the notional-functional syllabus and the direct method. Some of these approaches seek to minimise the role of rules, whilst concentrating as much as possible on strategies more in tune with a communicative view of language. Others still value the role rules and grammar have to play in language learning, yet they attempt to couch this in communicative terms. One result is that much more time is spent on the skills of listening and speaking than before. Krashen and Littlewood have argued that the receptive skills of reading and listening should receive attention first of all, and that the learner should only produce the second or foreign language when he himself feels ready to do so. Much of what was taken for granted in second and foreign language learning has come under close scrutiny, and a variety of new methods have sprung up from the view of language as a communicative entity.

Language Teaching Methods

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[12] H.G. Widdowson *Teaching Language as Communication* (Oxford, 1978), p.11.

Taking our second step and moving into the field of methodology, it is interesting to note to what extent the various theories have had an influence on teaching practice. One formerly prominent method which has been heavily criticised, particularly by those who take a more communicative view of language, is the so-called grammar-translation method. It must be said that this method seriously neglected the role of language as a tool for communication, confining itself overwhelmingly to the rules of the language. It aimed, primarily, to perfect the learner's competence, his knowledge of the rules of the second or foreign language. Since this method was first called into question, many different aspects of language learning have come to be examined. Much of this has been due to the communicative view of language, so that psychological aspects and behavioural aspects of language learning have become worthy of examination. The grammar-translation method was seen to represent too narrow a view of language learning in this new climate.

For so long the predominant method for foreign language learners, grammar-translation at first seemed set for total extinction at the hands of the theorists. Criticized for its over-emphasis on rules and its focus on the written language to the detriment of the spoken language, this method did not reflect the new thinking and did not embody the broader view which came to be taken of language. However, more recent research has tended towards a reaccommodation of the place of rule-learning in foreign language learning. Influenced by the work of Chomsky and of Krashen in this sphere, some have argued for a move away from the conscious learning of rules, as advocated in the grammar-translation method, to an internalisation of the language's rule system. Based on the belief that this might be achieved where the learner was required to engage in more mental processing, an inductive approach to learning grammar began to gain favour. It was thought that if the learner had to work the rules out from pieces of the foreign language then these rules would be more easily retained and more readily applied.

Another criticism levelled at the grammar-translation method concerned its failure to provide the learner with any meaningful language. By meaningful language is meant language which has relevance for the learner, which he can practically use in communication. The language content of the grammar-translation method was seen to be archaic or contrived, having been chosen to highlight linguistic forms and not to illustrate meaning. In Chomskyian

terminology, it had everything to do with 'competence' and nothing to do with 'performance'. It was argued that language set in a meaningful context would provide a more efficient means for learning and would also be of more benefit to the learner in the world outside the classroom. Many have, in fact, tied it up with the role of memory in language learning. Mackey, in his extensive study of language teaching, argues that if the linguistic material to be learned has meaning for the learner, then it will be remembered more easily.[13] Ausubel et al. call for foreign language learning to be based on meaningful learning particularly in the area of drill-and-practice, where there is the danger that the repetitive nature of the tasks may lead learners to lose sight of the meaning of the language altogether.[14]

Many psycholinguists have sought to encourage the integration of meaning into rule-learning activities, so characteristic of the grammar-translation method. It has been suggested by Palermo that the learning of meaning as part of the learning of a language as a rule-governed system adds to learning.[15] This reflects research which shows that children learn their first language based on a semantic system. Away from the grammar-translation method, Prabhu, discussing the role of meaning in language learning, states that, 'the intensive exposure caused by an effort to work out meaning-content is thus a condition which is favourable to the subconscious abstraction - or cognitive formation - of language structure'.[16] For her, a focus on the meaning of the foreign language may well lead to a better grasp of the language's structures. Others have examined the role of meaning within the context of the mental processing which they believe lies at the heart of language learning and linguistic output. Chomsky, for one, puts much emphasis on the cognitive processes in language, as is evidenced by his generative transformational grammar and his idea of a language acquisition device, whereby we are all in possession of an innate ability to learn a language.[17] Many other linguists have developed theories and methods in the fields of second and foreign language learning based on the belief that the mind has an extensive role to play in both the learning and the production of language. They believe that the learning process can be improved if the mental processing involved can be

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[13] W.F. Mackey *Language Teaching Analysis* (London, 1965).
[14] Ausubel et al.
[15] D.S. Palermo *The Psychology of Language* (Glenview, Illinois, 1978).
[16] N.S. Prabhu *Second Language Pedagogy* (Oxford, 1987), p.70.
[17] N. Chomsky *Aspects of the Theory of Syntax* (Cambridge, Mass., 1965).

identified and exploited. They have also sought to introduce other psychological factors, such as memory, motivation and the learner's attitude to himself and to his fellow learners, into the study of language learning.

Widdowson has argued in a similar vein to Prabhu that a concentration on meaningful language will enhance motivation, so improving learning, and will in addition provide the learner with a more useful linguistic armoury. Extending his discussion of use and usage, Widdowson looks at another aspect of the linguistic material presented to the learner.[18] He criticises the grammar-translation method for its over-emphasis on usage, that is to say on the formal aspects of the language. He argues that this makes the language appear remote to the learner and that learning is in consequence hindered. In contrast, he calls for more concentration on the meaning of the language. This is not to be confused with meaningful language. By the meaning of the language Widdowson is referring to its communicative purpose, the meaning it conveys. Thus the grammar-translation method is criticised on two fronts: firstly, for not providing the learner with language relevant to his experience or situation; and, secondly, for concentrating too much on the forms of the foreign language, on the rules, and not enough on the meaning.

Continuing our examination of methodology relevant to CALL, it is useful to consider the influence of behaviourist psychology in the field of foreign language learning. Much of what behaviourist psychologists proposed has been firmly rejected, by both Chomsky and by others who identified a neglect of the role of the mind in language learning as seen by behaviourist psychologists. Yet their ideas merit consideration in light of the new approaches to foreign language learning, and particularly in the context of computer-assisted language learning.

Behaviourists related language learning to other areas of human activity. They suggested that there must be a stimulus for any action, and that reinforcement played a large part in human behaviour including verbal behaviour: 'When a bit of behaviour has the kind of consequence called reinforcing, it is more likely to occur again. A positive reinforcer strengthens any behaviour that produces it...A negative reinforcer strengthens any behaviour that reduces or terminates it'.[19]

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[18] Widdowson *Teaching Language as Communication.*
[19] B.F. Skinner *About Behaviorism* (London, 1974), p.64.

One prominent behaviourist, B.F. Skinner, whilst rejecting the criticism that behaviourism does not try to take account of cognitive processes, appears to do just that when he writes: 'Nor need we refer to more than behaviour when we say that a person who laughs at a joke has "got the point" or that a person who responds appropriately to a passage in a book has "got its meaning"'.[20] In both cases, in getting the point of a joke and in getting the meaning from a book, the person's behaviour is surely an outward sign of an inward process. With reference to generative grammar, with its grounding in cognitive processes, Skinner states that, 'the transformational rules which generate sentences acceptable to a listener may be of interest, but even so it is a mistake to suppose that verbal behaviour is generated by them'.[21] He would appear to dissociate the mental processes involved in language production from the communicative outcome. Whereas Widdowson accused many linguists of having put too much emphasis on the rule-based aspect of language, we may well accuse the behaviourists of taking an equally narrow view. Admittedly Skinner does distinguish between language and verbal behaviour, but treats them as two unconnected entities, precisely what Widdowson would want to avoid. Ellis put the point most succinctly when he wrote that, for the behaviourist, '...language learning - first or second - was an external not an internal phenomenon'.[22]

The most tangible result of behaviourist theory in language teaching was the audiolingual method, the principal component of which was the language laboratory. Here the ideas of stimulus-response and of reinforcement were put into practice, with the result that students spent hours repeating phrases and dialogues over and over again until they achieved good pronunciation or responded with the correct form. Learners were to concentrate on linguistic form, not on meaning. Within this format, the language laboratory eventually came to be rejected as a useful teaching tool, both by teachers and by learners, who found the practice repetitive and therefore demotivating. The idea of language as verbal behaviour came under increasing attack, as did the concentration on form which was part and parcel of the language laboratory experience. Nowadays, many involved in the teaching of foreign languages are concerned that computer-assisted language learning will be run on the same principles as the language

[20] B.F. Skinner, p.53.
[21] B.F. Skinner, p.99.
[22] R. Ellis *Understanding Second Language Acquisition* (Oxford, 1985), p.12.

laboratory. Bickes and Scott, for example, note that CALL has been criticised for its reflection of, 'behaviourist theories which led to the demise of the language laboratory'.[23] They fear the re-emergence of repetitive practice of grammatical forms and a consequent demotivation of learners, just when they thought that they could concentrate on meaningful language and the communicative meaning of language. Yet many teachers of second and foreign languages would staunchly defend the role of repetition in learning and an element of rote learning, thereby advocating some of the ideas upon which the language laboratory was founded, although many of them would not welcome its full-scale return.

In addition to the changes in the linguistic material to be learned and in the view of language thereby represented, there have also been changes in the structuring of the linguistic material. A language course based on the grammar-translation method would very often present the material under grammatical headings. This indicated that the main focus of learning was the forms and rules of the language, and that any learning of meaning or communicative aspects was secondary, if present at all. With the increasing acceptance of the view of language as communication, and the translation of this into language learning practice, syllabi and content pages began to change. One development, tied in with the Council of Europe's project on language learning, was the situational syllabus.[24] Language learning was to be structured around the situations that the learner might encounter in the foreign country, such as 'at the bank' or 'at the youth hostel'. This idea was developed by van Ek, under the auspices of the Council of Europe, with the Threshold Level as its basis. This was the minimum level of linguistic ability thought to be required for an individual to be able to communicate in a foreign language country. The language was to be situationally meaningful, and the learning was to revolve around these situations and not to be focused on grammatical elements. Communication was the aim of such learning, not grammatical accuracy.

Another development in the structuring of language learning and of the linguistic corpus has been the notional-functional syllabus. This also stems from an adoption of the view that language is primarily for communication, and, at the linguistic level, involves a move away from

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[23] G. Bickes and A. Scott, 'On the Computer as a Medium for Language Teaching', CALICO Journal, 6, no.3, 21-32.
[24] J.A. Van Ek *The Threshold Level for Modern Language Learning in Schools* (London, 1977).

treating the sentence as the basic linguistic unit. The linguistic input was to work at the level of discourse, reflecting the increasing influence of discourse analysis. In this case, language was not categorised by communicative situation, but by its communicative function, such as requesting information, introducing an argument and so on. Wilkins put the thinking behind the notional syllabus as follows: 'In drawing up a notional syllabus, instead of asking how speakers of the language express themselves or when and where they use the language, we ask what it is they communicate through the language'.[25] As with the situational approach greater importance was accorded to the spoken language than had been the case with the grammar-translation method.

Learning, Teaching, and CALL

We now take our third step directly into the field of computer-assisted language learning to examine to what extent it reflects any aspects of foreign language learning theory and practice, and to suggest which it might best accommodate.

Before going on to do this, it would be of value to look at the analysis of computer-assisted learning carried out by Kemmis and his colleagues at the University of East Anglia.[26] Their report deals with the applications of computer-assisted learning, how it can enhance learning and to what extent it embodies certain theories of learning. In the second chapter of the report, the most relevant to this present study, three models or 'paradigms' for integrating CAL into the curriculum are set out. The first of these is called the instructional paradigm, which reflects behaviourist theories, particularly Skinner's doctrine of operant conditioning and, 'is strongly associated with classic drill-and-practice programs of American computer-assisted instruction (CAI)'.[27] Here the role of the computer is to present the contents of learning, to prescribe the learning task and to motivate the learner by providing rapid feedback. Under the heading 'curriculum emphasis', it is indicated that within this paradigm the subject matter is to be the object of learning. In language learning terms this would be closest to the grammar-translation method.

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[25] D.A. Wilkins *Notional Syllabuses* (Oxford, 1976), p.18.
[26] S. Kemmis, R. Atkin and E. Wright *How Do Students Learn? Working Papers on Computer Assisted Learning* (University of East Anglia, 1977).
[27] No page references are given for this work since none appear in the original.

The other two paradigms set out are, firstly, the revelatory paradigm and secondly the conjectural paradigm. In the case of the revelatory paradigm, the student is to be taken as the subject of learning and the role of the computer is described as 'simulation of information handling'. The theoretical basis of this paradigm is learning by discovery, whereas with the instructional paradigm it is learning through presentation, or rather teaching through presentation. As for the conjectural paradigm, Kemmis immediately delineates its usage by stating that, 'this paradigm may be appropriate for modelling and Artificial Intelligence packages and for computer science applications'. Here the theoretical basis is learning through experience.

The report goes on to examine which materials have been produced in CAL, and from there goes on to identify two categories of learning context into which they fall. The first of these is probably the most relevant for computer-assisted learning of languages specifically. It is defined as being, 'where the developer has a clear idea of the knowledge he expects the student to learn through interaction with the materials'. The second category covers learning contexts, 'where the idea cannot be transmitted easily in language or symbols and where the student must be thrust into a situation to master it by accumulating practical experience'. These two categories are defined with reference to the learning context as 'forms of thought' and 'forms of action' respectively, neither being entirely independent of the other. Indeed, Kemmis makes it clear that special-purpose CAL will be most appropriate, 'in areas where forms of thought and forms of action can be built into structured interactions mediated by a computer'.

Let us now look more specifically at the ability of the computer to accommodate those aspects of language learning theory and practice mentioned earlier.

Firstly, and in perhaps rather broad terms, two views of language can be discerned in much of the theoretical discussion - language as a rule-governed entity, and language as communication. For many, such as Widdowson for example, these two views are not diametrically opposed nor are they mutually exclusive. However, most of the practical applications of computer-assisted language learning reflect the first of these two views. Where the computer has been used as a tool as part of a communicative approach, the results are perhaps not entirely satisfactory. This may come from an overzealous desire to fit the computer somewhere into a communicative approach. Instead of assessing the computer's ability to reflect

the chosen method, it often seems that the materials' designer has desperately tried to fit a square peg into a round hole by adapting communicative activities for the computer. With reference to communicative activities in CALL, Higgins[28] quotes Odendaal, who states that, 'the computer cannot initiate or evaluate communicative activities. It cannot cope with the distinctive features of communication interchanges , viz. the information gap, the unanticipated response'.[29] This is a view which has gained much support both from theorists and from language teachers.

In relation to Krashen's theories concerning learning and acquisition, computer-assisted language learning would not appear to have much potential for integration here. CALL would most certainly be seen to be in the domain of learning rather than the domain of acquisition. However, adapting the Input Hypothesis, it might be said that the computer can provide a way for the learner to gain a reasonable amount of what Krashen calls *i+1*. Where a program can recognise a student's responses and identify error patterns, the structure of the CALL lesson might be modified to take the student's competence into account. For instance, in an exercise practising the use of the relative pronoun in French the student may continually confuse the subject and object pronouns. In this case, the computer could be programmed to trigger a subprogram explaining the difference between subject and object, having identified the learner's difficulty in distinguishing between the two. In this way, a level of caretaker language in the context of learning, rather than in the context of acquisition, would be provided. With respect to the Monitor Theory, the computer would appear to be an ideal tool for aiding the language learner in fine-tuning his Monitor, and, if balanced by communication practice, for producing learners who can successfully bring a knowledge of the rules of the language to bear upon their linguistic output. Krashen equates the Monitor with the application of learned linguistic rules, and the computer can be an efficient tool in helping the learner with the rule-based system of the foreign language. As the learner comes to know the rules better with the aid of the computer, so he should come to apply them more effectively.

Again acknowledging the fact that the computer is most often used where language is treated as a rule-governed system, CALL would prove useful if some form of transformational

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[28] J. Higgins, 'Computer Assisted Language Learning', Language Teaching, 16, no.2, 102-114.
[29] M. Odendaal, 'Second Language Learning and Computer-assisted Language Instruction', INTUS News, 6, no.1, 37-45.

grammar were to be the linguistic approach to teaching the structures of the language, or where pieces of language greater than the sentence were being dealt with. Surely the ability to move individual words and longer pieces of text around the screen afforded by the computer would enhance any exercise based on transformational grammar or on discourse analysis? Indeed, the computer would appear to be the ideal tool here. Maddison and Maddison argued as much, adding that the computer would be a good means for teaching syntax.[30] Furthermore, when current ideas in human-computer interaction are taken into consideration, there is some similarity between the processes involved in transformational grammar and those connected with the use of the computer. Certainly the visual element provided by the computer would enhance the understanding and the learning of the transformations required and of the generative nature of the foreign language.

When Allen asserts that 'knowledge of the code' forms an essential part of language learning,[31] it would appear to be the case that the computer can deal with this aspect most efficiently. Moreover, for some the computer does not deal well with the communicative side of language. These judgements about computer-assisted language learning are made in a context where the computer is not seen as a replacement of all that has gone before, nor as some form of linguistic and methodological panacea. Yet they are made often by people with great experience in the field of foreign language teaching. A mistake which has been made in relation to CALL has been to try and integrate it into existing methods, without asking whether it is the best solution, or at least a better solution than the one currently in use. Accepting Widdowson's judgements on second language learning to a great extent, it is true that the 'usage' side of language has been given too much attention, but it is by no means redundant. His assertion that the rule-governed aspect of the second language must be learned within a communicative framework would be widely accepted by many foreign language teachers as a sensible and balanced approach to foreign language learning.

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[30] A. Maddison and P. Maddison, 'The Advantages of Using Microcomputers in Language Teaching' in *New Developments in Computer Assisted Language Learning*, edited by D. Hainline (London, 1987), pp.20-31.
[31] Allen and Corder.

This analysis seems to tie in with the analysis given by Kemmis et al. of 'forms of thought' and 'forms of action', 'forms of thought' representing the rule-based element and 'forms of action' representing the communicative processes. Admittedly Kemmis is not referring exclusively to computer-assisted language learning, but to applications of computer-assisted learning in general. Applying his two learning contexts to CALL, there would appear to be a clear parallel between his two terms and the division of language and language learning into rule-governed activity and communicative activity. Yet when the criteria relevant to CAL, as set out in Kemmis' report, are applied to language learning there is not quite the same parallel. Kemmis sees the best conditions for CAL as 'areas where forms of thought and forms of action can be built into structured interactions mediated by a computer'. With respect to CALL, the conclusion which some might come to is that it operates most effectively teaching the rules of the foreign language. This conclusion would appear to reject the possibility of integrating 'forms of action' into computer-assisted language learning. What Kemmis is referring to by the term 'forms of action' is principally the use of simulations. Although many simulations are available in the field of CALL, the type of learning which they seek to embody is perhaps not best mediated by the computer. To begin with, the examples in Kemmis's report relate mainly to medical and scientific studies. The three curriculum paradigms described in the report do not pertain solely to language learning through computers, but to computer-assisted learning in general. In outlining the instructional paradigm Kemmis makes it clear that it is the best suited to language-based tasks: 'In general, the instructional paradigm involves the belief that the knowledge the students need to acquire can be specified in language and learned by transmission and reception of verbal messages'. The second paradigm, the revelatory, implies an inductive approach to learning, which, some would say, cancels out some of the inherent advantages of computer-assisted language learning such as the provision of feedback and the element of rapidity related to the question of motivation. It would also appear to be more compatible with the learning of scientific subjects, as would the conjectural paradigm with its emphasis on knowledge 'created through experience'. As has already been stated, the communicative activities which this learning paradigm implies are possibly best mediated by human-to-human interaction and not by the computer.

Before its implementation, CALL should be measured against other approaches to teaching the same material. In the case of simulations, and in the wider area covered by communicative approaches, the computer would appear not to be the optimal tool for the job. Given that communication skills constitute what is to be learned, and that communication normally involves human to human interaction, the computer may be seen as an artificial intruder and one which fails to imitate adequately human communicative strategies. By far the best approach to learning communicative skills must be in communicative activities with a speaker of the target language, that is with another human being. Since they neglect so many aspects vital to the communication process, those communicative activities available on computer are poor substitutes for human-to-human interaction. This is despite the advantages they share with many other CALL applications.

Some of the ideas for foreign language learning which have been proposed in relation to CALL would be seen by many as regressive and as an under-exploitation of the computer in language learning. If the computer is to be excluded from the area of developing communicative skills, then it would appear to be an expensive way of returning to outmoded theories and practices. Surely this piece of modern technology must be the means by which the latest theories and methods are to be implemented, its supporters might argue. In reply it might be said that the computer must be judged in relation to other means available, and that its deployment must not be a case of technology for technology's sake.

In many respects, that was the problem with language laboratories: they were there so it was felt they ought to be used somehow, in particular given their cost. Another aspect to the comparison made between the language laboratory and CALL concerns the theories about language learning which they reflect. The language laboratory was thought to be the tool by which many elements of behaviourist psychology were to be put into practice, and it was this which brought it into disrepute as behaviourism itself was called into question as a valid analysis of the processes involved in linguistic production. It is thought that CALL might fall into the same trap. However faulty the theoretical foundations of behaviourist psychology are, some of the practical implications have proven useful in language learning, and are particularly suited to computer-assisted language learning. Indeed many are already part and parcel of current CALL

practice, including drill and practice and exercises involving the repetition of formal linguistic items.

The vast majority of current CALL applications are of the drill-and-practice variety, and it is in these that behaviourist theories are most evident. These applications often come with extensive feedback and supplementary grammar explanations. However, they do not seem to have been developed with behaviourist theories in mind, but rather because they are thought to be the best type of learning for the computer to handle, and because they are thought to deal with an essential element of foreign language learning. On the subject of drill-and-practice, Widdowson has the following to say:

> 'Drills which provide repetitive practice for sound discrimination or for the absorption of sentence patterns into habitual behaviour do not of their very nature deal with authentic language as communication. But they could provide an indispensable service in developing language for communication. This is not to say that the way they are conventionally used does fulfill that service, but only to say that they could be so used'.[32]

As elsewhere, Widdowson seeks to establish a link between the rules of language and the role of language in communication. Unfortunately, he does not elaborate how drills might be used to develop language for communication. What he does is acknowledge the value of both repetition and of drills in language learning. Drills were rejected in the recent past not only because they operated in an area of language which was seen to be of secondary importance, that is in the area of learning the rules of the language, but also because they were a demotivating factor. Their repetitive nature and concentration on formal details were thought to foster a negative attitude to the language in question and ultimately to hinder learning. Higgins and Johns, however, call for these aspects to be integrated into drills, since they can then internalise a store of language behaviour which is available for the learner to use in communication.[33] Moreover, as psycholinguistics has developed, the role of drills has been reappraised within the framework of an analysis of the mental processes involved in language learning, and they are now considered to be a potentially useful part of foreign language learning.

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32 Widdowson, *Explorations in Applied Linguistics 2*, p.219.
33 J.Higgins and T. Johns *Computers in Language Learning* (London, 1984).

Given this new-found appreciation of the drill-and-practice type of exercise, what can CALL contribute? On one level, CALL can act to put a motivating factor into drills. With its visual element the computer can enhance the repetitive drill and combine word and image to create a much more interesting side to the learning process. In fact, the use of visuals and computer graphics alongside drills might serve to strengthen the learning process by making the rules and structures practised penetrate more deeply into the memory. Secondly, CALL, with its ability to react to the learner's input, its rapidity of response and the capacity to supply the learner with supplementary linguistic information, can make drills a much more rounded and individualized learning process. Furthermore, if control of the drills is handed to the student, an element of independence and of variety is introduced for the learner which can only serve to increase motivation and enhance learning. On a more psychological basis, Cook argues for the conscious learning of the rules of the language, saying that the computer's use of drills contains elements of cognitive-code learning.[34] This would accord with the idea of learning 'forms of thought' on the computer as proposed by Kemmis, and would bridge the gap between the mentalistic and the behavioural approaches to language learning.

The versatility of the computer means that as far as inductive and deductive learning are concerned, both are possible with CALL. Rivers, in discussing the various merits of inductive and deductive learning of French grammar, argues that the deductive approach is better for more advanced learners, whilst the inductive approach suits the less advanced learner better.[35]This view might well be challenged by pointing out that inductive learning can prove to be discouraging to the less advanced learner, since it involves a greater reliance on the foreign language. Inductive learning works best, it seems, when the learner has sufficient knowledge of the rules of the language, or has had a sufficient degree of exposure to the language, to be able to make a reasoned guess at the new structure. In the case of CALL, the choice between an inductive or a deductive approach would be left to the programmer or to whoever was developing the course material. It might be argued that CALL lends itself more to deductive

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[34] V.J. Cook, 'Bridging the Gap between Computers and Language Teaching', in *Computers in English Language Teaching*, edited by C.J Brumfit, M. Phillips and P. Skehan (Oxford, 1985), pp.13-24.

[35] W. Rivers *A Practical Guide to the Teaching of French* (Oxford, 1975).

learning, since inductive learning tends to demand more time of the student. Given that one of the main features of computer-assisted language learning is the rapidity of response, then this element would be lost to some extent with an inductive approach. Another disadvantage to translating an inductive approach onto the computer would be the amount and sophistication of the programming required. An immensely complex program would be needed if the wide variety in learner input was to be processed. Admittedly many current CALL applications already have this facility, but for CALL to adopt an inductive approach it would have to be much more extensively developed. However, an inductive approach to learning is perfectly possible with the computer, and it may well be enhanced by employing the same techniques suggested for the enhancing of drills.

Such a view of CALL invites criticism of it as regressive. It does deal well with drills, has been confined mainly to the rules side of language learning, and has tended to reflect a deductive approach to learning. Yet do all these statements not point to a rejection of all the research into second and foreign language learning carried out over the last thirty years, and distance CALL from any form of communicative methodology? Much of the communicative approach to language learning and the theory behind it must be accepted as highly valuable, but many would argue that it is not an aspect of language that the computer handles well. The human teacher can deal with the teaching of communicative skills much more effectively than the computer, for the simple reasons that the human is flexible enough to cope with the complexity of communication, and because most communication involves human to human interaction, so that as close an approximation as possible to the real situation must be desirable. At the end of the day CALL must not simply mirror the latest trends in language learning, but it must be established where it works best, and where it is most useful.

Where then is CALL to be situated in the curriculum of language learning? Given that several linguists have clearly stated that computer-assisted language learning is best adapted to working in the rule-governed sphere of foreign language learning, does this exclude CALL from any kind of communicative approach? It seems to me that the words of Widdowson, when he argues for a balanced approach to language learning, are most appropriate in reply. The balance he calls for is to be between the learning of a system of rules and the learning of communication

skills. CALL might be a most efficient element on the rule-learning side of this balance. It would be an ideal supplement to a whole host of communicative activities and would by no means run counter to a communicative approach. Unlike Krashen many do not take such a negative view of the role of grammar in language learning. Krashen seems to think that for a majority of learners a knowledge of the rules would be detrimental to linguistic production, and attaches three conditions to the efficient deployment of the rules, which he calls the Monitor. Does a knowledge of the rules of a language not act to enhance production, and to offer the learner some flexibility as he communicates? It must be accepted that, for the beginner, knowledge of the rules might prove to be an obstacle to oral communication, but this is by no means the whole story in learning a language. Even amidst pauses and stutters, the application of a learned grammar to oral communication can be most impressive to a native speaker, and some would say just as acceptable as a fluent string of ungrammatical language. It is true to say that many learners with a good knowledge of the rules of the foreign language are often afraid of speaking the language since they feel they will make grammatical mistakes. However, this problem will not be combatted by denying grammar and the learning of the linguistic system a place in the learning of the foreign language. This would simply be to avoid the issue, rather than to analyse it and to look for solutions. Benwell sees CALL, working in conjunction with other language work, as the means by which learners might deepen their knowledge of the linguistic elements within the language learning curriculum.[36] Such a role for CALL might well facilitate the learning of communicative skills, offering the more balanced approach to language learning which Widdowson calls for.

One final and significant aspect of methodology to be examined with reference to computer-assisted language learning is the learner-centred approach. At the very beginning of this chapter I stated the importance in language learning of seeing each learner as an individual. It is at this point that CALL can apparently come into its own. A well-structured program cannot by any means replace the individual attention of a teacher, but where that attention is unavailable it seems that it can provide a very good substitute. The learner's responses might be assessed and

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[36] G.A. Benwell, 'Integrating the Computer into a Language Course', in *Computers and Modern Language Studies*, edited by K.C. Cameron, W.S. Dodds and S.P.Q. Rahtz (Chichester, 1986), pp.15-19.

appropriate action might be taken by the computer, such as giving remedial advice, access to helpful linguistic information through an on-line dictionary or grammar supplement, or moving the learner on to a different program. The learner, in such a scenario, is not given a general piece of information or teaching aimed at a class of twenty or more students, but is provided with a response which should meet his needs. Where the individual learner is seen to be central to the learning process, and as individual learning strategies are being recognised and defined, computer-assisted language learning would appear to have something positive to offer. In the ideal CALL environment the learner is not treated as part of an homogeneous unit, but as an individual with specific needs and a specific approach to learning. Various experts have emphasised the potential of CALL in this area of language learning including O'Shea and Self who saw computers as encouraging self-determination in learning, which in turn would increase motivation, they believed.[37] Phillips talks of the 'liberation of the learner',[38] where the computer program adapts itself to fit the needs of the individual, and Bickes and Scott describe CALL as more 'individual-responsive' than the grammar book.[39]

Conclusion

What emerges at the end of this three-stage analysis of the various theories and methods behind second and foreign language learning is, firstly, a clear recognition of language operating in two spheres: as a rule-governed system, and as a means to communication. Certain theorists have concentrated on one sphere, either tacitly acknowledging the other or ignoring it completely, often because they felt that it had been given too much emphasis elsewhere. This duality is then reflected across the spectrum of methods, from the grammar-translation method dealing almost exclusively with language as a rule-based construct to the various developments based on Hymes's criteria for communicative competence.

In relation to CALL, the tendency has been to have it operate in the first of these spheres. The majority of CALL programs deal with the rules and grammar of the particular foreign

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[37] T. O'Shea and J. Self *Learning and Teaching with Computers: Artificial Intelligence in Education* (Brighton, 1983).
[38] M. Phillips, 'Logical Possibilities and Classroom Scenarios for the Development of CALL', in Brumfit, Phillips and Skehan, pp.25-46.
[39] Bickes and Scott.

language, although there is a selection of communicative activities available for use on the computer. These attempts at communicative CALL appear to fall far short, however, of their equivalents mediated by a human teacher, whereas the rule-learning aspect seems to be considerably enhanced by the intervention of the computer. A visual element, rapidity of response, learner-specific explanations, supplementary information, putting the learner in control of the content and pace of learning - all these can be provided by the computer. Yet do they in practice enhance and improve the learning process? This is the question which now needs to be asked to determine whether the claims made for CALL are actually valid.

CHAPTER 2 The Effectiveness of Certain Aspects of CALL

Given that language, with particular reference to learning a foreign language, works in two broad areas - as a system of rules and as a means to communication - let us now focus on the role of the computer within the first of these two areas. I intend to examine the claims made with respect to CALL on the basis of its use in teaching what Allen calls, 'the code of language',[1] and not on the basis of the various attempts to integrate it into a communicative approach to language learning.

Before I embarked on this particular examination of computer-assisted language learning, I had already been making casual observations as to its effectiveness. These observations were gathered over a period of three months. During this period I was involved in supervising newly-established CALL classes with first and second year students of French at the University of Glasgow, most of whom had had very little experience with computers in the field of language learning. I was able to watch these students react to the idea of learning French with the aid of a computer. I was also able to test various programs with them, and eventually to assess the extent to which the computer-based exercises contributed to their learning. At first, this assessment was carried out in a rather unscientific manner, as I considered what to assess and how to assess it. When I came to undertake a more scientific assessment, which I shall describe presently, I was armed with a whole host of expectations and opinions concerning CALL. I hoped that this would enable me to carry out a more accurate investigation than would have been the case otherwise. With three months' experience of CALL under my belt I hoped that I might identify all the more clearly those areas which required examination, and that I would be able to carry out my analysis aware of many of the elements involved in the learning of a foreign language using a computer.

The two points which I had come to identify as being worthy of analysis arose both from my own classroom observations and from my reading of literature on the subject of CALL. These points concerned the provision of feedback and the use of text-based exercises. The first of these points, the use of feedback, was one of the principal advantages claimed in favour of the computer in language learning. It is said that the computer is an efficient tool in the learning of a

[1]Allen and Corder.

foreign language partly because it can offer the learner precise and instantaneous explanations matched to what he has typed in. This aspect of CALL is often quoted in its favour, and is offered as one of the advantages of the computer over the traditional grammar book and over the hard-pressed human teacher. The second point arises more from my own observations in the classroom. Students reacted in different ways to exercises which were based on individual sentences and to exercises based on longer pieces of language. In addition, reading on the subject of second and foreign language learning methodology, I came across the argument that the sentence was inadequate as the basic unit for foreign language teaching. Behind this argument was a view of language primarily as a means of communication rather than as a rule-governed system. Writers on discourse analysis, along with those who called for a greater role for meaning in language learning, tended to dismiss the sentence as the linguistic unit to be used in second and foreign language learning. The question which presented itself was this: is this move away from the sentence to be translated into the sphere of computer-assisted language learning?

The arguments in favour of linguistic units longer than the sentence in language learning are based on several premises. One of theses premises relates to what has already been said about the role of meaning in second and foreign language learning. For long the sentence was seen as the standard linguistic unit. It was used to illustrate most aspects of grammar, and exercises often consisted of a series of unconnected sentences to be translated into the foreign language. However, the sentence came to be seen by Widdowson as insufficient to illustrate meaning in addition to form. It was thought that the formal aspects of language could be illustrated by the sentence, as had been the case, but that if learners were to learn the meaning behind the form, there would then have to be a move up the scale of linguistic units, from the sentence to text. Many specialists in the field of discourse analysis in particular pointed to the inadequacy of the sentence for the purposes of learning.

A further aspect to the debate concerning the type of exercise used on the computer refers back to the language laboratory. There the phrase and the sentence were very much the linguistic units for foreign language learners, and much of the emphasis was put on learning the formal aspects of the language. Fears that the computer might go the same way as the language

laboratory and that there might be too much emphasis on formal aspects of language to the detriment of meaning and communicative skills, are perhaps behind the move towards working with longer pieces of language in the context of CALL. The general trend in language learning has been to accommodate meaningful language and the learning of meaning to a greater degree. Therefore, although many CALL applications are of the drill and practice type, where the sentence is the standard unit, there are an increasing number of programs which are based on a text. These text-based exercises are designed to use meaningful language to teach the meaning of the language in addition to its formal properties.

Arguments over the role of feedback largely related to the treatment of the learner as an individual. A well-structured program, it was said, could react to the student's responses, in some sense analyse them, and then give explanations or guidance concerning the student's input. Each learner would not be given the general explanation a teacher might give a class of twenty students, but on each point would be provided with feedback specifically related to his response. In this way the learner would be able to work at his own pace and to identify the gaps in his knowledge of the foreign language, thus enabling him to structure his own learning. This aspect of CALL is very much in line with the general trend in foreign language learning, which is to adopt a so-called learner-centred approach. The learner is to be made increasingly responsible for his own learning, and is not to be treated as part of a homogeneous group, but as an individual, with a particular learning style and particular learning needs.

With these two points, feedback and text-based exercises, to be examined, I set out to construct a method by which they might be evaluated. I decided to adopt a three-staged approach. This was to begin with a pretest to ascertain the students' degree of knowledge before completion of the computer-based exercises. They were then to tackle some computer-based exercises. Finally, a posttest was to be administered to measure the degree of change in knowledge. My aim was to discover whether feedback and text-based exercises did in fact aid learning.

At once, there is a dilemma caused by the use of the word 'learning'. Without wishing to stray too far from the central thrust of this research, it is important to consider what we mean when we say that something has been learned. The procedure outlined above appears to carry the

assumption that something has been learned if it can be reproduced accurately in a test. For some this would be a far too simplistic definition, particularly in the context of language learning. Yet, is this not in fact the assumption which lies behind the vast majority of assessment methods in education today, including the traditional end of term examination? It might be argued that an item has been truly learned only when it is correctly and consistently used in context. Consequently, the reproduction of certain linguistic items in a discrete-point test such as a pretest and posttest would not be taken as proof that learning had taken place. The reproduction of these items had taken place in special circumstances which some might call artificial. The learner's attention was focused on these items, it might be argued, and other linguistic factors and linguistic items were kept in the background. Moreover, their reproduction occurred within a specially designed linguistic context and not in the context of everyday discourse or natural communication. Krashen referred to this phenomenon, pointing out that conscious knowledge of lexical items or of grammar points is often brought to the surface only by discrete-point grammar tests.[2]

As well as being aware of the problems surrounding the use of the term 'learned', related issues involved in the administration of posttests had to be examined. For the purposes of assessing the depth of learning it was suggested by several applied linguists, notably Allen and Corder, that posttests be administered more than two weeks after the completion of the test exercises. It was argued that before this point the learner had not processed the items being tested into the deep memory, and that they had therefore not been truly learned. It might be argued that two weeks is, however, a completely arbitrary passage of time, and that something may just as well be learned before this two week period as after it. As a consequence of the recognition of individual learning strategies, it would seem valid to argue that some learners grasp certain points immediately, whereas others require a period of two weeks, or perhaps even longer. In the case of my own procedure, the posttest was administered immediately following the completion of the computer-based exercises. This was done partly to minimise disruption to subsequent classes. The immediate posttest reproduction of a test item, it might be argued, correctly shows that learning of some sort has taken place. Perhaps the particular item is not yet stored in the

[2]S.D. Krashen *Principles and Practice in Second Language Acquisition* (Oxford, 1982), p.15.

learner's deep memory, but this might not necessarily have been the case had a further two weeks elapsed.

As far as this study is concerned, the posttest results might not be seen to some as evidence for or against long-term learning, but merely as evidence that a transmission of information had occurred to a greater or lesser degree. The two aspects of computer-assisted language learning under examination here have not been assessed for their effects on long-term learning. Such an assessment would have required a long-term project, and this study was limited in that respect. Nevertheless, the short-term results I shall go on to present and analyse may be seen to point towards the possible long-term effects of feedback and of text-based exercises. With this in mind, I was satisfied that administering the posttest immediately after the completion of the computer-based exercises was a valid step to take. I was also satisfied that the particular type of discrete-point test procedure which was employed in the pretest and the posttest would produce meaningful results. The discrete-point test provided an immediate focus on the grammatical points which were being taught. A more complex procedure or one with longer-term aims would have meant taking certain extraneous factors into account whilst analysing the results. Moreover, the students' understanding of the test procedure and perhaps of the grammatical points themselves might have been clouded. The danger in such a discrete-point approach is that, to the learner, the language becomes very much a formal system devoid of any communicative meaning. The learner's attention may be so focused on the blanks to be filled that the rest of the phrase or sentence is ignored. This is always a problem with a cloze procedure in particular, whether it is built upon unconnected sentences or on a text.

The subject of cloze tests is one which has attracted a great deal of attention within the field of foreign language learning. These tests have come to be widely accepted as a reliable way of assessing reading comprehension and grammatical knowledge. Indeed, Oller states that, 'we may deduce that the cloze procedure - that is the family of techniques for systematically distorting portions of text - is a method for testing the learner's internalized system of grammatical knowledge'.[3] He compares the task of the learner in completing the cloze passage or cloze sentences to that of the writer when constructing the original text. An assumption which

[3]J.W. Oller Jnr. *Language Tests at School: A Pragmatic Approach* (London, 1979), p.344.

would seem to underlie this comparison is that the object of the cloze procedure ought to be an authentic text, that is to say not one which has been constructed for the specific purpose of the cloze procedure. However, Oller does go on to say that, 'research has shown that the cloze procedure is appropriate to just about any text', whether it be authentic or otherwise.

On the related subject of discrete-point tests referred to above, the best definition is given by Schulz: 'A discrete-point item test (commonly called 'objective' item) was defined as any independent testing item not bound by situational constraints which required a specific, predetermined response...Emphasis was on linguistic correctness rather than on meaningful content'.[4] This latter part of Schulz's definition ties in with Oller's description of the cloze procedure to present the combination of the two techniques - cloze and discrete-point - as a highly-tuned instrument for assessing linguistic proficiency.

In relation to the pretests and posttests described in this chapter, OLLCALLQUEST3 must be excluded from the present discussion. It was a procedure based on the use of modal verbs and was more of a translation exercise than a cloze procedure, although it did include certain elements of the cloze procedure. The other two tests which adopt the cloze technique, OLLCALLQUEST2 and HOCALLQUEST2, did conform in all respects to the definitions given above by Oller and Schulz. The most obvious combination of the discrete-point item type and the cloze procedure is a test where the focus is on one particular grammar point in each test sentence, such as OLLCALLQUEST2 and HOCALLQUEST2. This combination is one to which Oller refers and which is recognised as falling within the definition of a cloze procedure.

On the question of the use of individual sentences, both the pretest and posttest of OLLCALLQUEST2 and of HOCALLQUEST2 incorporated this feature. Those who argue that the effectiveness of cloze is diminished, if not cancelled altogether, by the use of individual sentences might see the results of the two procedures as invalid. However, according to Aborn, Rubenstein and Sterling predictability of a blank is possible within sentences of less than ten words. They state that, 'the length at which context attains maximum effectiveness lies between

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[4]R.A. Schulz, 'Discrete Point versus Simulated Communication Testing in Foreign Languages', Modern Language Journal, 61, 94-101 (p.96).

five and ten words'.[5] Frederiksen, on the other hand, suggests that blanks embedded in longer pieces of text would be easier to fill. In reference to the 'constructivist' conception of language processing, he states that, 'the comprehension-memory system does not semantically process each input sentence in its entirety, rather, it selectively processes input, using information selected from the current input sentence together with contextual information and stored knowledge about the world to generate a semantic interpretation which "fits" the input "data"'.[6] Admittedly Frederiksen is referring to language processing in general, yet the constructivist theory is clearly applicable to the specific case of the cloze procedure. Frederiksen does not, however, make it clear what is meant by 'contextual information' and his analysis is certainly not as precise as that of Aborn et al..

The concentration on one specific grammar point might be seen to interfere with both of the above theories as applied to OLLCALLQUEST2 and HOCALLQUEST2. It would appear reasonable to suggest that the claimed advantages of context, whether in Frederiksen's constructivist terms or in the terms of Aborn et al., were severely diminished due to the learner having been primed to look for for a limited set of responses. This may indeed have led the learners to see the text-based computer exercise, ART2, less as a text and more as a series of connected sentences, some with a blank to be filled. Given Oller's comparison with the text construction process,[7] the learners may have been even more inclined to divide the text into individual sentences so minimising the contextual advantages.

The Test Procedures

Returning to the test procedures themselves, the first sample I took contained ninety-eight students of the first year French class at the University of Glasgow. By the time these students came to participate in the study they had had three months or so to accustom themselves to computer-assisted language learning. For them this had meant, at most, five hours supervised work on the computer. They did have access to the computer network at other times, but such

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[5]M. Aborn, H. Rubenstein and T.D. Sterling, 'Sources of Contextual Constraint upon Words in Sentences', Journal of Experimental Psychology, 57, no.3, 171-180 (p.178).
[6]C.H. Frederiksen, 'Effects of Context-induced Processing Operations on Semantic Information Acquired from Discourse', Cognitive Psychology, 7, 139-166 (p.140).
[7]Oller, p.342

work would have been unsupervised. I hoped that carrying out the tests after this three month period would minimise interference by problems related to using a computer. I also hoped that by this stage students in the sample would be familiar with the keyboard, with the layout of the screen and with the instructions related to the programs used. They had worked on the type of exercise which formed the basis of the test procedure, and had only been introduced to two different systems. They were therefore familiar with both the hardware and the software.

Not all ninety-eight students in the sample were following entirely the same course of study in the French department. Some of them, the majority in fact, were studying French literature in addition to French language. For others, French was not their major subject of study. Indeed some were non-Arts faculty students.[8] I did not, however, measure any of these factors, since I was in search of as mixed a sample as possible. Amongst the ninety-eight students there was a wide range of abilities, which was a distinct advantage in that the results would not relate to one specific category of students. What might be significant, however, is that those students who made up the sample were on the whole the most motivated. The total number of students in the first year class was far greater than ninety-eight, yet only ninety-eight students attended the CALL classes in the two weeks over which the first test procedure was conducted. The sample was therefore a completely random one, consisting of seventeen male students and sixty-five female students, which was roughly representative of the whole class.

With this first sample I proceeded to examine the two chosen aspects of computer-assisted language learning. The area of the French language which was to form the basis to my test procedure was the use of the article. This choice was made for two reasons. Firstly, the use of the article was one item on the language programme for the first and second year classes. This meant that the subject of the tests and of the exercises would not be unrelated to the rest of the year's work. Despite the special circumstances of the test procedure, I sought to minimise the disruption and the stress it might cause. I hoped that there might be an element of continuity, and realised that the very fact of handing out something called a pretest or a posttest would probably provoke stress. I made it clear, before distributing the pretest, that no academic assessment was involved, and that the whole exercise was for the purposes of my own research. The second

[8]The majority of these students were from the Faculty of Law and Finance.

reason behind my choice of the use of the article was the ease with which this point could be adapted for the computer-based exercises. In order to focus my study as closely as possible on the two aspects of CALL in question, the exercises were to be as simple to construct as possible. Before writing the programs for these exercises, I made a list of sixteen points concerning the use of the article which I thought the students should learn. These sixteen points were easily incorporated into the type of exercise I could construct given the package I was working with.

This package was Duke University's CALIS program, which allows mainly for the creation of cloze exercises using an authoring program. This means that the author of the exercises can simply type in a series of sentences or a text, run it through the CALIS program and the program then creates a cloze exercise. In this way I was able to write two exercises based on the cloze procedure. The CALIS program also allows the author to write his own feedback and each piece of feedback can be linked to a particular response from the student. Thus the author can identify an unlimited number of incorrect responses and provide explanatory feedback for each one. I used this facility for one of the exercises which students were to tackle as part of the test procedure. For the other exercise no explanatory feedback was provided. A control group was thus created against which I could measure the effects of text-based exercises and of learner-centred feedback.

The first exercise, which I called ART1, consisted of nineteen sentences each with one blank to be filled by the appropriate article.[9] Some of the sixteen points on my list were dealt with more than once in this exercise on a totally random basis. The instructions on the first page of the screen read: 'In this exercise you need to fill in the blanks with the appropriate article (le, la, du, une, des etc.) or type 0 if no article is required'. The first significant feature of this exercise was that it was sentence-based. None of the sentences was connected in meaning to any other and together they did not form a cohesive text in French. The sentences were concocted with the sole aim of incorporating one of the sixteen uses of the article I had listed. The other important characteristic of ART1, in line with the stated objectives of this study, was that it provided the students with no explanatory feedback. In response to student input it was programmed to display simply the words 'correct' or 'incorrect'. Students could try to answer as

[9]see Appendix 4.

many times as they wanted, but at each attempt they were given no guidance as to the correct answer on the computer screen. There was also the option of moving on to the next question without providing an answer, and the option of having the correct answer displayed on the screen once two attempts had been made.

These two distinctive features, the use of sentences and the omission of any explanatory feedback, meant that ART1 had a potentially short completion time. Such potential rapidity was another point often quoted in favour of computer-assisted language learning. The related argument was that learners did not have to wait for the teacher to mark or comment on their work, but that the computer gave them an instantaneous reply. This, in theory, meant a more efficient pace of learning, and a heightened sense of achievement on the part of the student. Moreover, learners would have greater control over their own learning, which, it was claimed, would lead to an increase in motivation. These are aspects of CALL which we will look at more closely at a later stage.

The parallel exercise to ART1 I called ART2.[10] Whereas ART1 was constructed using individual sentences, ART2 presented the learner with a cohesive text. This text was peppered with twenty-five blanks, each of which was to be filled with the appropriate article. It also incorporated the sixteen points and, in the same random fashion as in ART1, some points appeared more than once. The instructions on the introductory screen for ART2 read as follows: 'Please fill in each blank in the following text. Every blank is recoverable through contextual clues. First, read through the text, then begin to fill in the blanks. You may use the white arrow keys to scroll through the text if necessary. Then type the correct word or phrase into the blank where the cursor appears, then type ENTER. Your answer may be larger or smaller than the blank'.' At the top of each subsequent screen page the following instructions appeared: 'Fill in the blanks with the appropriate article un, une, du, des, le, la etc. or with 0 if no article is required'. Whereas ART1 displayed one sentence at a time on the screen, with ART2 the screen was constantly full of text.

The second distinctive aspect to ART2 was the extensive feedback written into the program. Each correct answer was met with a word of encouragement and a short explanation of

[10]see Appendix 4.

the point in question. In addition, for each blank four or five possible incorrect answers were anticipated. In each case there was a short piece of explanatory feedback. The nature of the CALIS program meant that these pieces of feedback had to be concise. In several cases I had originally wanted to provide an example illustrating the point, but was unable to due to the constraints imposed on space by the CALIS authoring program. Not every incorrect answer could be anticipated, although I tried to cater for what I thought were the four or five most likely ones. As was the case with ART1, students were able to bypass blanks, and move automatically on to the next one. There was also the option of calling up the correct answer, although in this case it would not be accompanied by the explanatory feedback.

Prior to attempting one of these two computer-based exercises, students were required to complete a short pretest in order that their initial knowledge of the use of the article might be gauged.[11] This pretest consisted of ten sentences, some with one blank, others with more, the sixteen chosen points being incorporated at random. The sentences were entirely unconnected. The instructions at the top of the page read: 'In the following sentences fill in the blanks with the appropriate article, if an article is required (e.g. le, la, de l', une, un etc.)'. These instructions were roughly the same as those provided with exercise ART1. One omission which was perhaps significant occurred in these instructions. Amongst the examples of articles I should perhaps have included *au* and *à la*, and it would have been better to ask students to write a zero in a blank where no article was required. The first of these omissions may have led to some confusion when students came to the eighth sentence, where *aux* was the required answer. The second omission may have meant that where nothing was written in a blank this indicated a lack of knowledge rather than a realisation that no article was required. It was, in fact, impossible to distinguish between these two possibilities, and equally impossible in the case of question eight to know whether or not students had been misled by the instructions. This points to an inherent problem with this type of test procedure: we can only guess at why a student gave a particular answer. It is impossible to read the students' thought processes, and their answers can only provide clues as to the mental processes which lie behind them. Some writers have suggested that the solution to this problem is to ask a student to give an account of what went through his mind before he gave his

[11]see Appendix 1.

answer. This would not appear to be a watertight solution, since one is rarely aware of all the thoughts which pass through the mind. In many cases external observers are much better at giving an account of our thought processes than we ourselves are. Moreover, for this present study to have undertaken such an investigation into the students' thought processes would have taken far too much time and may not have proved fruitful.

The posttest was almost identical in form to the pretest.[12] Before the ten sentences, however, some additional questions designed to shed light on other aspects of computer-assisted language learning were added. These asked whether the student thought he had learned anything, whether there was too much text on the screen and whether more or less feedback would have been preferable. Following these questions were the ten sentences with blanks. In the posttest there were fewer blanks to be filled than in the pretest. Despite this fact, the same selection of the sixteen points relating to the use of the article was covered. For this reason the posttest could not have been described as more difficult or as less difficult than the pretest.

On this question of difficulty it might be said that the use of the article was a particularly complex area of French grammar to have chosen. The rules concerning this point are considered by many to be too unreliable and too intricate, not lending themselves to being learned easily. This may be countered with two points. Firstly, the grammar point was the means to an end and not the focus of the study. Any other grammar point could have served the same purpose, although it must be restated that the use of the article was easily incorporated into a cloze procedure. Secondly, it is dangerous to brand certain grammar points as being more difficult than others. For some students the use of the article is more easily learned than the use of relative pronouns for example. In any case, what do we mean when we say that a particular grammar point is difficult?

CALLQUEST1: A Survey of Attitudes to CALL

In the previous chapter I referred to the increasing amount of study of affective factors, such as the student-teacher relationship and stress, in language learning. Although I did not measure any of these factors scientifically, I did make certain observations. Before embarking

[12]see Appendix 1.

upon the procedures described above, I distributed a general questionnaire, CALLQUEST1, in which one of the questions asked, 'Do you think that the computer will help you in learning French?'.[13] In a very simple way I wanted to discover the general attitude of students to computer-assisted language learning. The vast majority of respondents expressed a positive attitude towards computers in language learning. Ninety-six percent of them indicated that they thought that the computer would definitely or maybe help them in learning French. To a more general question concerning their attitude towards computers, eighteen percent of the respondents expressed a negative attitude whilst thirty-six percent expressed an attitude of indifference.[14]

These statistics seemed to prove what I had already suspected, namely that students did not have a very positive attitude towards computers in general. Many were, however, quite open to the idea of computer-assisted language learning. Yet the computer was certainly not perceived as an independent learning tool. Eighty-six percent of respondents indicated that CALL should be used in conjunction with a grammar book or explanations from a teacher. Only one student indicated that the computer might replace the grammar book as a means of learning grammar. None thought that the computer might replace the teacher.

The most interesting points to arise from this questionnaire came to light once the students concerned had completed some computer-based exercises. They were asked whether their attitude to CALL was more or less positive having completed the exercises. Eighty-two percent responded that they had a more positive attitude, and none expressed a more negative attitude. On the question of whether they thought they had fully learned the grammar point concerned, an interesting point came to light. Only one quarter of the respondents indicated that they had mastered the grammar point covered by the computer-based exercises. Fifty-four percent indicated that they did not think that they had mastered the grammar point. This sense of failure might be explained by the fact that the exercises in question did not give a particularly comprehensive treatment of the grammar point. More prolonged practice on the computer exercises might have produced a more positive response to this question. The explanation would

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[13]see Appendix 2.
[14]see Appendix 3.

seem, however, to lie deeper than this, and have to do with the students' attitude to the computer as a teaching medium.

As has already been stated, very few of the respondents to this questionnaire CALLQUEST1 thought that the computer alone could teach grammar. Indeed, this opinion was expressed after they had had some experience of computer-based exercises. Despite a much more positive attitude towards CALL after the completion of these exercises, and a generally more positive attitude towards the role of computers in foreign language learning, students tended to be cautious about learning with the computer. They then approached further practice with CALL with apparently positive views of the exercises themselves and of the computer, yet at the end of the day they did not trust the computer to teach them. This ties in with the opinions expressed concerning the role of the computer in the learning of grammar. It seems that very few students would entrust all their learning of French grammar to a computer, the majority preferring to turn also to a teacher or a grammar book.

This caution might be accounted for by the circumstances surrounding the students' experience of computer-assisted language learning. Admittedly the CALL classes were both presented and seen as a supplementary element in the language programme. Other language work, such as translation, was provided for by two class hours per week, whereas CALL was provided for by a one hour class every fortnight. Within the language programme, therefore, CALL was a secondary element, and it would not be untrue to say that students perceived it as such.

Beyond this initial survey of students' attitudes to computers and to computer-assisted language learning, it became increasingly evident as the academic session progressed that some students were not prepared to accept the computer as an independent teaching tool. Many saw CALL as a less than serious means of learning French grammar, or rather, as a less than sufficient one. At the end of a one hour class, if asked, several students would say that they needed to consult a grammar book or their lecture notes for reassurance and reinforcement.

This attitude, revealed by a one-off questionnaire and by questions posed during classes, constitutes a most significant obstacle to learning via the computer. Approaching a set of

computer-based exercises without entirely trusting them to aid one's learning process must surely have some bearing on the success of CALL.

Another affective factor which I observed, and which must be taken into account before assessing the results of the various test procedures, is the physical learning environment. For the purposes of the test procedures and for the CALL classes throughout the year, the same room was used. This room, in Glasgow University's Language Centre, housed eighteen IBM computer terminals and two printing units. There were no windows, and whilst the room was occupied it became quite warm. The computers were set out in two semi-circles with nine computers to each semi-circle. Students were barely able to have an A4 size pad on the desk beside them, as the terminals were so close to each other. It might be said that this was not an ideal learning environment, and simply added to the stress some students already felt at having to work with computers. When it is borne in mind that fifty-four percent of the respondents to CALLQUEST1 expressed a negative or indifferent attitude towards computers, to be faced with an hour's work in these somewhat cramped conditions might not have been very conducive to learning or to promoting a positive attitude towards computer-assisted language learning. Much importance is accorded to the creation of a relaxed and comfortable learning environment in the fields of second and foreign language learning. Admittedly this is mentioned more often in connection with communicative activities, yet it is an equally important factor in the field of CALL. Students were encouraged to take notes as they worked through the computer-based exercises, but with the lack of space this was not an easy thing to do. The temperature in the room, with around fifteen students present and all the computer hardware, certainly did not make for a comfortable learning environment. All these physical factors may well have combined to hinder the students' learning.

As has already been stated, by the time that students came to participate in the test procedures they had already spent around six hours in CALL classes. They were familiar with the keyboard and also with the basic functions connected to the CALIS program. However, even with six hours of experience some students continued to display uncertainty over which buttons to press, how to type in answers and how to gain access to certain functions provided by the CALIS program. Some were unaware of the pass facility whereby they could miss out one

question and move on to the next one. A few did not know that they could call up the answer to a particular question on the screen. Both of these facilities play a part in the learner-centred approach, in the potential rapidity of the exercises and in relieving stress. Most students did, however, have a grasp of the basic keyboard functions and of the functions available with the CALIS package.

Another set of factors which may have had an effect on the learning process, but which were not measured as part of the test procedures, were the students' relationships to each other and their relationship with the teacher. Many researchers in the field of CALL point to the fact that the computer offers learners the possibility of working together. This they claim as a positive factor, since learners can goad each other on and help each other out. This form of co-operation was in no way prohibited in the CALL classes, although for the purposes of each test procedure students were asked to work alone. In practice, however, very little collaboration took place, most students preferring to complete the exercises by themselves at their own computer terminal. Despite this individualistic approach, the classroom atmosphere was, on the whole, quite friendly and even during the test procedures was as relaxed as possible. As far as student-teacher relationships were concerned, I believe that it is impossible for me to judge since I was the teacher. Indeed both these factors, student-student relationships and student-teacher relationships are difficult to measure objectively. What one observer might call a good classroom atmosphere, another might see as a difficult learning environment. The amount of subjective judgement tied in with these two factors means that any assessment of them must be very cautious, and that it may be impossible to come to any firm conclusions.

An Analysis of the Statistical Results of the Test Procedures

Having considered some of the affective factors involved in computer-assisted language learning, let us now turn to the statistical results of the first test procedure OLLCALLQUEST2.[15] The sample of ninety-eight students was taken out of a possible total of 250 in the first year French class. In line with the stated objectives of this study, I divided the sample according to the exercise which each student had completed. This gave fifty-eight students who had completed

[15]see Appendix 3.

ART1, the sentence-based exercise with no feedback, and forty who had completed the text-based exercise with extensive feedback, ART2.

Before comparing the scores of the ART1 students with those of the ART2 students, certain calculations had to be made. The two scores given to each student corresponded to the number of mistakes made in the pretest and in the posttest. The raw number was in each case divided by the number of possible mistakes, that is to say by nineteen for the pretest and by twenty-three for the posttest. In sentences with two blanks, if the first answer was incorrect and the second answer was not the selected correct answer, yet in conjunction with the first answer gave a piece of acceptable French, then both answers were counted as mistakes. In both the pretest and the posttest there were several cases where there was more than one acceptable answer. Only where a response was completely unacceptable was it counted as a mistake.

The first important values to be calculated were the mean number of mistakes made in the pretest and posttest. With each score taken as a proportion of the possible number of mistakes, the mean number of mistakes on the pretest was 3.01.[16] On the posttest the mean number of mistakes was 2.65. At first glance there seemed to be quite an improvement in the students' performance between completing the pretest and the computer-based exercises, and the posttest. However, a simple comparison of these two means was not going to be sufficient to constitute proof of a significant improvement.[17] In any event, such an outcome would have been highly predictable and would prove very little indeed. The next step was to divide the scores into the two groups - one for students who had completed ART1 and one for students who had completed ART2. Before analysing the posttest scores of these two groups, we had to discover whether they displayed the same level of knowledge in the pretest. The mean number of mistakes by students who went on to complete ART1 was 3.18, whereas for the ART2 students it was 2.76. ART2 students appeared to have a stronger grasp of the use of the article than the students who made up the ART1 sample. On subjecting these figures to a closer statistical analysis, however, it transpired that there was no significant difference between the two groups of students.

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[16]All calculations were done to two decimal places.

[17]The term 'significant' in relation to these findings has a precise statistical definition, related to the probability of the result once chance has been taken into account. See E. Hatch and H. Farhady *Research Design and Statistics for Applied Linguistics* (Rowley, Mass., 1982).

The hypotheses which I intended to examine in designing the test procedure OLLCALLQUEST2 concerned the use of feedback and the use of text-based exercises. Many writers on computer-assisted language learning cited these two elements as advantages of CALL. Much was made of the computer's ability to provide the learner with specific feedback and the supposed increased effectiveness in learning which this engendered, and there was a strong case made for setting grammar points and exercises practising grammar points in a piece of continuous language.

With these claims in mind one would have expected a significantly better performance in the posttest by students who had completed ART2. This exercise was both text-based and provided extensive feedback. This hypothesis was first tested by comparing the mean number of mistakes in the posttest for the two groups. For ART1 students this number was 2.74, and for ART2 students it was 2.51. Again the raw scores seemed to support the hypothesis. Once they had been more closely scrutinised there was, however, no significant difference in posttest performance between the ART1 students and the ART2 students. Eager to be as rigorous as possible in my analysis, I decided to compare the degrees of improvement from pretest to posttest. This involved calculating the mean improvement for each group then comparing the two means. The mean improvement for ART1 students was 1.36 and for ART2 students it was 1.32. As with the initial comparison of the two posttest means, this second more rigorous comparison showed there to be no significant difference in improvement between ART1 students and ART2 students.

From these findings it must be concluded that the presence of extensive feedback and the text-based nature of exercise ART2 did not appear to aid learning to any significant degree. ART2 students did not perform significantly better than ART1 students according to an analysis of the posttest figures. What might explain this rather surprising result which would seem to reject the original hypothesis?

Let us concentrate firstly on the role of the feedback. By the very nature of the CALIS-type exercises, students are encouraged to move rapidly from one question to another. In an attempt to hand the control of learning over to the learner, students are provided with various options. The press of one button allows a student to pass from one question, sentence or blank to

the next. Pressing another button displays the correct answer on the screen without the accompanying feedback however. The student is, therefore, given ample opportunity to race through an exercise without paying much attention to the feedback. In addition to this, the feedback appears at the bottom of the screen. Admittedly the student is required to press the spacebar in order to clear the screen of the box which contains the feedback and to move on to the next question. Yet there is an inbuilt element of rapidity, which may lead students to pay scant attention to the feedback. In their eagerness to complete the exercise and to move on as quickly as possible, they may indeed miss the feedback. This might account for the seemingly negligible impact of the feedback in exercise ART2. Students tended not to pace themselves. Sometimes not taking time to read the feedback at the bottom of the screen, they were keen to press the spacebar and remove the feedback window, which they perhaps saw as an obstruction. This was more likely to be the case if the student was answering a series of questions correctly. A momentum was built up which could be maintained with the aid of a press of the spacebar to clear the screen of feedback and move on to the next question.

Another explanation as to the lack of impact of the feedback may lie with the feedback itself. Due to the limitations of space necessitated by the CALIS program, the explanations which formed the feedback were short. In most cases no supplementary examples were given. If students did in fact read the feedback, they may not have understood the explanation of their correct or incorrect response. Terms such as indefinite article and partitive article were perhaps unknown to them. These terms were, however, explained right at the outset of the test procedure and, what is more, students had every opportunity to ask for an explanation of them as they were working on the exercises. If the feedback was misleading or incomprehensible, students tended to pass over it. Despite the imposed limitations, I did attempt to make each explanation as clear as possible. I used terms such as indefinite and partitive in order to save space. However, what appeared to be a clear explanation to me may have been completely opaque to a student. If this was the case then it is certainly not surprising that ART2 proved to have few advantages over ART1.

The fact that ART2 was a text-based exercise may also account for its insignificant effect on learning in comparison with ART1. The amount of text on the screen at one time may have

been irritating. Whereas twenty lines of French prose on a sheet of paper would pose visual problems for very few learners, a similar amount on a computer screen may have been a detrimental factor. This is something which I did not measure, but which several students commented upon. Another detrimental factor may have lain in the comprehension of the text itself. Despite the supposed advantage of contextual clues which comes with a text-based exercise, basic understanding of the text may have acted as an obstacle to learning. In exercise ART2 not only did students have to cope with the specific grammar points, they had also to make sense of all that surrounded them. Perhaps greater concentration on the points being tested, as is the case with a sentence-based exercise, outweighs the advantages of contextualisation afforded by a text-based exercise.

As I set out the scores for the first of my test procedures, OLLCALLQUEST2, and compared the pretest scores with the posttest scores, a pattern began to emerge. This pattern had little to do with the original objectives of the test procedure, but seemed to be worthy of further analysis. It appeared that those students who had made few mistakes on the pretest made substantially more mistakes in the posttest, whereas students who made a large number of mistakes in the pretest made significantly less in the posttest. At first sight, this may not seem surprising, since with a small number of mistakes there is more room for an increase in mistakes than a decrease. A student who made only three mistakes in the pretest may well make three or more in the posttest despite having benefited from the computer-based exercises. On the other hand, one who made ten mistakes in the pretest has little scope for making many more in the posttest. It would not have been wise to continue speculating before a much more detailed analysis of these figures had been undertaken.

Taking the mean number of mistakes in the pretest for the whole sample of ninety-eight students, I created two sub-samples, A and B. Subsample A contained all those students who had made 1.7 mistakes or fewer in the pretest. This gave twenty-four students whose mean number of mistakes in the pretest was 1.33. Subsample B was made up of those students who made 4.3 mistakes or more in the pretest. This gave, therefore, a subsample of twenty-one students who made a mean number of 5.07 mistakes in the pretest. The next step was to compare the pretest and posttest scores for each student in each subsample. At first glance, the subsample B students,

who performed badly in the pretest, had made significant improvements in the posttest. They appeared to have benefited greatly from the computer-based exercises. On the other hand, subsample A students tended to have made more mistakes in the posttest than they had in the pretest. The important calculation to make was to find the mean increase or decrease in the number of mistakes for each subsample. In this way, the initial pretest performance would be taken into account and a valid comparison of the two subsamples could be made. This comparison showed that there was a significant difference between subsample A students and subsample B students. In relative terms subsample B students improved on their pretest performance much more than subsample A students. Those students who had displayed a good knowledge of the use of the article by their answers in the pretest had not displayed a substantial increase in their knowledge once they had completed one of the computer-based exercises. Those students who had displayed a poor knowledge of the use of the article in the pretest, however, did display a significant increase in their knowledge having completed a computer-based exercise.

What might explain this rather surprising result? The answer could lie with the learning strategies of individual students. Those students with a greater initial knowledge, subsample A students, may have been confused by the explanations contained in the feedback. With ART2 in particular they may have not been familiar with the grammatical rules behind the explanations. Their knowledge of the use of the article in French may have been intuitive rather than rule-specific. In other words, they knew what looked or sounded correct without knowing the associated rule. In this case, rule-based exercises such as ART1 and ART2 might have only served to interfere with this intuitive knowledge. This interference may have provoked confusion in the mind of these students, so leading to poor performances in the posttest. Once they had completed the computer-based exercise they may have had the impression that their knowledge of the use of the article was much less solid than they had originally thought.

This difference in type of knowledge is a plausible explanation for the lack of improvement on the part of subsample A students. Their reliance on a good ear for the language may have been jolted by the plethora of rules with which they were confronted in the CALIS exercises. It is certainly true that an intuitive knowledge of a foreign language can develop independently of a knowledge of that language's rules. Indeed intuitive knowledge can supersede

knowledge of the rules, so that the learner knows that something is acceptable in the foreign language without being able to explain why it is acceptable. This explanation would also hold with reference to subsample B students. At the outset, their knowledge of the sixteen points relating to the use of the article was poor. In effect, the rule-based exercises ART1 and ART2 may not have interfered with their knowledge to the same extent as it did with the subsample A students. Students in subsample B may have been able to assimilate the rules they came across , and so performed markedly better in the posttest than in the pretest.

It would be rather simplistic, however, to assume that all the students in subsample A experienced an interference of rule-based knowledge on intuitive knowledge. It would be equally simplistic to assert that all subsample B students understood and assimilated all the rules which they encountered in either exercise ART1 or ART2. The statistics do, nevertheless, indicate a marked improvement following the CALIS exercises by subsample B students and a poorer performance by subsample A students. Despite the posttest performance of subsample A students being significantly better than that of subsample B students, their improvement is much less marked. Of the twenty-four students in subsample A only two improved in raw statistical terms on their pretest score. Amongst the twenty-one subsample B students nineteen improved on their pretest performance.

The poor improvement in terms of scores by subsample A students was spread across students who had completed ART1 and those who had completed ART2. The explanation relating to the interference of rule-based knowledge with intuitive knowledge would seem to be a valid one therefore. An extension of this explanation might lead one to conclude that the use of rule-based exercises with CALL is detrimental to the learning of students who have built up an intuitive knowledge of the foreign language. The implications of this conclusion are quite far-reaching as far as the role of CALL is concerned. It would appear that before students undertake exercises such as ART1 and ART2, which deal with the rule-based aspect of language, it might prove beneficial to assess them for their approach to language learning. It might prove to be the case that learners with an intuitive knowledge of the language would have their learning impaired by working on such exercises. Rule-based CALL may consequently have to be confined to rule-based learners.

It may not be possible to draw this conclusion quite so neatly, however. Learners of a foreign language do not fall so clearly into the categories of rule-based and intuitive learner. To carry out an assessment leading to a categorisation of this kind would be almost impossible. What is more feasible is that for certain areas of language, certain learners have more intuitive knowledge, and for other areas, they have more knowledge of the rules.

With a broad range of learners, any rule-based computer-assisted language learning would have to be supplemented by other more communicative methods. The only alternative would be to assess each individual student's knowledge of each individual area of the foreign language, and then structure the language programme accordingly. As desirable as this might be in theory, in practice it would be completely unfeasible. The best solution would appear to be a mixed approach to the learning of grammar with rule-based learning including CALL and other methods which would cater for the acquisition of intuitive knowledge.

In order to test further the use of feedback and of text-based exercises, and to be able to confirm or reject the findings from OLLCALLQUEST2, I carried out the same procedure on a second sample. This procedure I called HOCALLQUEST2. The sample concerned was made up of thirty-eight students all of whom were in the second year French class at Glasgow. The sample was much smaller than that for OLLCALLQUEST2 and this was taken into account in all statistical comparisons between the two samples. The sample was divided into two groups - those students who completed exercise ART1 and those who completed ART2. Eighteen students completed ART1 and eighteen completed ART2, with two students who did not fill in the relevant part of the posttest. The procedure was the same as for the OLLCALLQUEST2 sample with one significant difference. A new variable was introduced with HOCALLQUEST2 in that the thirty-eight students had already completed both exercise ART1 and exercise ART2 approximately six weeks before undergoing the test procedure. They had, therefore, been exposed to all the rules, to the feedback and to a ten minute teaching session where all the points covered in the computer-based exercises were explained to them. This new variable was introduced in order to assess the ability of computer-assisted language learning to stand on its own as a learning tool. I intended to measure the effects of a short explanation by a teacher of the grammar points dealt with in a subsequent CALL exercise. An analysis of this variable will be

presented further on. In the meantime, let us concentrate on the role of feedback and the arguments in favour of text-based exercises.

For the whole of the HOCALLQUEST2 sample the mean number of mistakes made in the pretest was 1.95.[18] In the posttest, set two weeks later, the mean number of mistakes made was 1.89. As with OLLCALLQUEST2 the figures appeared to confirm the expectation of an improved performance once the computer-based exercises had been completed. The sample had then to be analysed in terms of those students who had completed the text-based exercise ART2 and those who had completed ART1. Among the eighteen who completed ART1 the mean number of pretest mistakes was 1.92. For those who completed ART2 this number was higher at 2.04. This difference proved not to be a significant one, mirroring the result with OLLCALLQUEST2. As far as the posttest results were concerned, ART1 students made a mean number of 1.81 mistakes and ART2 students 2.03 mistakes. Once again this difference proved not to be significant when analysed statistically. As with the first year sample, the statistical analysis was taken one step further and the difference between pretest and posttest performance was measured for each group. Here again the performance of ART2 students was not significantly better than the performance of ART1 students.

The statistics concerning this second sample HOCALLQUEST2 paralleled those concerning the sample OLLCALLQUEST2. This would suggest that the initial findings relating to feedback were reliable. The fact that all thirty-eight students in the second year sample had previously completed both exercises need not be taken into account here, since any advantage would apply to the pretest as much as to the posttest. The significant differences between the mean scores of the two samples OLLCALLQUEST2 and HOCALLQUEST2 were to be expected for two reasons. Firstly, the students in the HOCALLQUEST2 sample had had one more year of French than the students in OLLCALLQUEST2. Secondly, the second year students had already completed both exercises and had had the points concerning the use of the article explained by a teacher.

The explanations concerning the apparent ineffectiveness of the feedback with regard to OLLCALLQUEST2 students do not carry the same weight with the HOCALLQUEST2 students.

[18]see Appendix 3.

This is no doubt due to the extra teaching which they received and to their familiarity with the two exercises ART1 and ART2. If there were any detrimental effects due to incomprehension of the feedback or due to the terms used within the feedback, then they must have been slight. Explanations concerning the possibility of students missing or avoiding the feedback may still be valid. They are perhaps all the more valid, since some students may have felt that they were so familiar with the sixteen points that they felt no need to linger over them and so avoided the feedback altogether. Students may also have felt that even if their answers were incorrect they had understood the teacher's explanations and would therefore not need to rely on the explanations contained in ART2. The different circumstances surrounding HOCALLQUEST2 may have increased the rapidity factor I discussed with reference to OLLCALLQUEST2, and this may in turn partly account for the equally insignificant effect of the feedback with the second year students.

Certain elements which may have rendered the text-based nature of ART2 problematic for OLLCALLQUEST2 students would have been minimised in HOCALLQUEST2. This second group of students had already seen the text so that comprehension of it must have been less difficult on this second encounter. They may, nevertheless, have found the amount of text on the screen a problem, and may have been more at ease with the sentence-by-sentence format of ART1. For all the advantages of contextualisation the text-based exercises on the computer are said to provide, they may prove to be more of an obstacle to learning than an aid.

Let us return now to a point mentioned earlier. This concerned the provision of teaching to HOCALLQUEST2 students before they went on to attempt the pretest, computer-based exercises and posttest. Some writers in the field of computer-assisted language learning would argue that computer-based exercises can act as the sole means for the teaching of language items such as vocabulary or grammatical rules. In an attempt to free the teacher to deal with the more communicative aspects of language, CALL has been portrayed as a potentially comprehensive and self-contained means by which students can learn lexical and grammatical items. This is a view which must be questioned, and I hope to do so to some extent by comparing the OLLCALLQUEST2 results with the results from HOCALLQUEST2.

As expected, HOCALLQUEST2 students performed significantly better in the pretest and in the posttest than the OLLCALLQUEST2 students. Yet, contrary to expectations, the degree of improvement made by HOCALLQUEST2 students after completing the computer-based exercises was not significantly greater than the degree of improvement on the part of the OLLCALLQUEST2 students. The expected improvement due to teaching may have come into effect in the pretest and therefore was not registered by the posttest. The supposed advantages of teaching may have been reflected in the pretest scores, in which case the posttest scores would not show any significant improvement due to the additional teaching.

It would seem all too obvious to state that computer-assisted learning of grammatical items can be enhanced by preliminary explanations from a teacher. In fact, some firmly believe that CALL in this area of language learning is of limited value unless it is accompanied by such instruction. The attitude towards CALL expressed by students in the sample would seem to confirm this view. The results of CALLQUEST1 pointed to a psychological barrier to accepting the computer as the sole or final means of learning French grammar. For this reason alone it would be worthwhile to provide learners with an alternative to the computer such as a traditional grammar book or the teacher's explanations. However, a more thorough examination than I myself have undertaken might well show that a supplementary element of teacher-led instruction strengthens learning via computer-based exercises. Learners, once they become more computer literate, might come to accept the computer as an independent learning tool and may overcome the psychological barrier which seems to exist for the moment. The majority of the students involved in the two samples did not trust the computer-based exercises alone to teach them French grammar. Perhaps with the inclusion of supplementary material such as more extensive on-line explanations and other help facilities the computer will come to be accepted as a replacement for the traditional grammar book or the explanations of a teacher.

OLLCALLQUEST3

Having examined the use of feedback and the use of text-based exercises with both OLLCALLQUEST2 and HOCALLQUEST2, I decided to undertake some more analysis of the findings thrown up by the two subsamples A and B in OLLCALLQUEST2. Statistical analysis

seemed to indicate that the stronger pretest performers did not gain nearly as much from the computer-based exercises as the weaker performers. To examine this once again, I constructed a new test procedure, OLLCALLQUEST3. For this test there was a sample of seventy-four students, drawn from the same population as the OLLCALLQUEST2 students, that is from the first year French class at Glasgow University. There were fifteen male students and fifty-seven female students, with two students who gave no reply to this particular question. This sample was therefore representative of the language learning population in general.

There were some significant differences between OLLCALLQUEST2 and OLLCALLQUEST3, but not to the extent that a comparison of the two procedures would be invalid. In OLLCALLQUEST2 the grammar point which formed the basis of the test procedure was the use of the article in French. For OLLCALLQUEST3 I decided that it would be modal verbs. This decision was taken, in the first instance, because, like the use of the article, modal verbs were an item on the language programme of the first year class. I sought to minimise disruption to the normal pattern of classes as much as possible, and I wanted students to appreciate the relevance of the two exercises they were going on to attempt. These two exercises were of the same type as ART1 and ART2 - they were both cloze procedures. In the first exercise students were given the infinitive and tense of a modal verb and were required to fill in the blank in a sentence with the correct form. The sentences were not individually presented as in ART1, but formed part of a dialogue. The second exercise was a string of unconnected sentences, each with a blank to be filled by the correct form of the modal verb whose infinitive was given at the end of the sentence. Unlike ART1 and ART2, the feedback was in French and accompanied both exercises.

As for the pretest and the posttest, they were similar in form to the pretest and posttest for OLLCALLQUEST2.[19] Both were cloze exercises. There were, in each case, ten sentences in French with one blank per sentence. An English translation was provided for which the French equivalent had to be found. In collating the scores for both the pretest and the posttest I decided to count the number of correct answers and not the number of incorrect answers as I had done in

[19]see Appendix 1.

the case of OLLCALLQUEST2. This made for simpler calculations, and as there were ten blanks in each test I did not have to work with fractions.

As with OLLCALLQUEST2, I created two subsamples, A and B. Since the mean score for the whole sample in the pretest was 6.23, subsample A was made up of those students who scored eight or more, whilst subsample B contained those who scored four or less. This gave a subsample A of nineteen students and a subsample B of fifteen students. The next step was to calculate the difference between the pretest and posttest performances, and then to make the comparison between the two subsamples. Here, as with OLLCALLQUEST2, there was a significant difference between subsample A and subsample B.

Looking at the raw scores for each subsample, it was clear that subsample A students had not improved dramatically on their pretest scores. Subsample B students had performed much better in the posttest than in the pretest, their scores having increased by an average of 1.8 points. On average, the scores of subsample A students stayed the same. It must be admitted, however, that, as in the case of OLLCALLQUEST2, the stronger pretest performers had less room for improvement than the weaker ones. Almost half of the students in subsample A scored nine or ten in the pretest, so their posttest score could only show a very slight increase on this. Subsample B students had, in some cases, a possible eight points gain to make in the posttest. Given these statistical facts, any conclusions drawn from the results of OLLCALLQUEST3 must be tentative.

Each of the above investigations affords some interesting insights into computer-assisted language learning. To begin with, CALLQUEST1 highlighted the fact that before attempting any exercises on the computer, students did not have much confidence in its teaching powers. In fact, this wariness persisted even after the learners had completed some of the exercises and had become quite familiar with the computer as a learning tool. The consequences of this attitude for computer-assisted language learning are potentially far-reaching. Were this attitude to persist, then CALL may not be able to hold its own as a teaching medium, never gaining the learners' confidence and failing to play the vital supplementary role it can indeed fulfil. It would appear, from CALLQUEST1, that even the traditional grammar book commands much more respect than the computer. Much of this distrust may be due to a lack of familiarity with the computer or to an

association in the minds of students between computer-based exercises and computer games. It is true that any unfamiliar method will be greeted with some suspicion at the outset, and most learners in this study were used to a more book-based approach to learning French grammar. In addition, certain features of the CALL exercises, such as the awarding of points and the informal language used to address the learners, may have contributed to these results.

Conclusion

The central investigations into the use of text-based exercises and into feedback provided some surprising results. None of the procedures, OLLCALLQUEST2, HOCALLQUEST2 and OLLCALLQUEST3 upheld the view that these two features of CALL were of significant benefit to the learner. Despite the combination of text and extensive feedback in exercise ART2, the students who completed the exercise displayed no greater gain in their knowledge than those who completed ART1, an exercise based on sentences and without feedback.

On the use of text-based exercises to teach grammar, experts are divided over whether text does afford serious advantages. Within the context of cloze procedures, they disagree over the best way to construct these tests. Linguistic reasons and empirical evidence can be found to justify the use of both text and sentences. The sentence is said to focus the learner's attention on the specific grammar point in question, whereas the use of text is advocated on the grounds that it provides the learner with meaningful language. In this study, the text-based cloze procedure did not prove to have any significant advantages over a sentence-based cloze procedure.

Feedback also emerged as a seemingly lacklustre addition to the CALL armory. The lack of firm evidence to support the use of extended feedback, such as that used in exercise ART2, may be due to certain psychological aspects of CALL and to the metalanguage, to the students' antipathy towards computers and to the integral rapidity of some of the exercises. Telling the learners simply whether they were right or wrong proved to be as successful as providing extensive remedial feedback. However, a much more extended study would be required to measure fully the role of feedback and its effect on long-term learning.

The most interesting results to emerge from the test procedures were those pertaining to the performance of students who showed an initial greater knowledge. Despite their apparent

headstart as displayed in the pretest, these students emerged from the computer-based exercises often having gained very little from them and sometimes with their knowledge apparently impaired. The reasons for this are not clear, nor are the reasons for the often striking improvements made by those learners who did less well on the pretest. Previous learning methods and different learning strategies may account for these findings, but why improvements did not occur across the spectrum of learners can only be a matter for speculation.

What the procedures did highlight without question were that some of the claims made on behalf of CALL were overinflated. Features taken for granted as being advantageous such as the provision of remedial feedback and the use of text-based exercises would seem to require re-examination in the light of the above investigations. It would be naive and foolish to suppose that these aspects of CALL are beneficial per se, and they may indeed have a negative effect for some foreign language learners.

CONCLUSION

In all the various analyses of foreign and second language learning two different views of language clearly emerge. The first view sees language as a rule-based phenomenon, and involves what is commonly known as grammar. The second view is of a means to communication, and of a complex aspect of human behaviour. For most writers one view does not preclude the existence of the other, although more often than not one view tends to dominate.

These two views underpin most of the theories and methods associated with second and foreign language learning. Krashen at one point states that, 'we teach language best when we use it for what it was designed: communication'.[1] It is this belief which has largely led to the development of ideas such as communicative competence, and of methods such as the situational approach which are behind so much of the modern foreign language syllabus. One pioneer of the modern syllabus, Wilkins, upholds the importance of the rule-governed side of language, however, when he argues that communication itself would be limited without a good knowledge of grammar.[2] Most of his contemporaries have chosen to ignore this aspect of language altogether, or to relegate it to a secondary role, where it is often seen as an obstacle to learning.

However, as far as computer-assisted language learning is concerned, it seems that it is the rule-governed side which has had the upper hand. The majority of programs deal with grammatical or lexical items. Cloze procedures of one form or another account for a large number of the computer-based exercises available for the learning of French. There are programs which incorporate a communicative approach to language learning. Yet the general consensus seems to be that the role the computer can play in developing communicative competence is restricted unless it can be combined with other tools. Developments in the field of interactive video and in artificial intelligence seem to offer the best hopes for the computer in this area of language learning.

The most common application of CALL is in the rule-governed sphere of language, and it was within this sphere that the investigation described above took place. Two aspects of CALL

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[1] Krashen ,*Second Language and Second Language Learning*, p.11.
[2] Wilkins, *Notional Syllabuses*.

which were very much in vogue were evaluated: the use of text-based exercises, strongly advocated by proponents of discourse analysis, and the use of remedial feedback. The statistical analysis appeared to show that text-based exercises provided the learner with no advantages over sentence-based exercises. Indeed, the experts on cloze procedure were themselves divided over the point at which context became an advantage in comprehension. As for the question of remedial feedback, the test procedures OLLCALLQUEST2, OLLCALLQUEST3 and HOCALLQUEST2 appeared to indicate that the presence of feedback is not necessarily beneficial to the learner.

Additional analysis of the statistics seemed to bear out a point made by Farrington, that formal learning can sometimes undo the effects of informal learning.[3] The stronger learners appeared not to benefit greatly from the computer-based exercises, and in some cases their posttest performance indicated that a degree of interference had taken place by the exercises on what they already knew. Weaker learners, on the other hand, appeared to increase their linguistic knowledge significantly. Given the possibility that intuitive knowledge may have become clouded by rules, it would seem reasonable to suggest that computer-based exercises of this sort, which are widely used, are not necessarily beneficial for all learners.

Much of the enthusiasm for computer-assisted language learning must be tempered with a certain amount of caution. Admittedly only limited aspects of it have been examined here, but the findings cannot be ignored. Much-vaunted features of CALL such as remedial feedback and text-based exercises have proven to be less than entirely advantageous. The type of feedback learners are provided with must be carefully thought out, since not all benefit from classic grammatical explanations, and the needs of individual learners must be taken into account.

It is to be hoped that the attitude of learners to computer-assisted language learning will be different from that revealed in OLLCALLQUEST1. Such reluctance to accept the computer as a useful tool in the learning of a foreign language is perhaps the single biggest obstacle to be overcome.

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[3] B. Farrington, 'Computer Assisted Learning or Computer Inhibited Acquisition?', in K.C. Cameron, W.S. Dodds and S.P.Q. Rahtz, pp.85-92.

Expensive systems have been installed and costly programs bought on the basis of their colourful design, the complexity of their construction, or their glossy packaging, rather than on the basis of linguistic benefits or pedagogical rigour. This imbalance, it seems, must be corrected, otherwise much money will be wasted, and the cause of foreign language teaching will suffer a serious setback. Indeed CALL itself might fall into disrepute, not so much in the eyes of the experts, but in the eyes of the learners.

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Appendix 1

OLLCALLQUEST2 and HOCALLQUEST2
Pretest

In the following sentences, fill in the blanks with the appropriate article, if an article is required (e.g. le, la, de l', une, un etc.).

1. La plupart ____livres pour____ enfants sont pleins ____ belles images.

2. Il a commencé à apprendre ____ allemand à ____ âge de six ans.

3. L'équipe a fait face à la situation avec____ grand courage.

4. ____ enfants français vont à l'école ____mercredi, et ____ étudiants français rentrent chez eux____ weekend.

5. Je ne me suis pas rendu compte qu'elle était ____ infirmière, même quand elle a commencé de parler _____ santé.

6. Récemment ____argent se vendait à moins de 10 francs ____ kilo, et ___ or à $12 ___ gramme.

7. Ils n'ont pas pris ____ vacances, bien qu'ils adoraient visiter ___ Espagne.

8. L'homme ____ yeux bleus est certainement___ médecin.

9. Tu as ____ beaux yeux, tu sais.

10. Une grande partie____ invités qui sont restés après ____ dîner sont étrangers?

Appendix 1

OLLCALLQUEST2 and HOCALLQUEST2
Posttest

Which exercise have you completed? ART1/ ARTII

Was there too much text on the screen? YES/ NO

Would you have liked more / less feedback?

Do you think you have learned anything? YES/ NO

In the following sentences, fill in the blanks with the appropriate article, if an article is required (e.g. le, la, de l', une, un etc.).

1. C'était un homme de ____ grande sensibilité.

2. ___ dîner est servi à 17h ____ dimanche.

3. Beaucoup ____ délégués étaient ____ professeurs qui parlait ___ russe couramment.

4.____ femmes représentent plus de ____ moitié de la population _____ Grande-Bretagne.

5. Est-ce que ça t'intéresse vraiment ____ histoire française, ou as-tu simplement besoin ___ bonnes notes?

6. A 100F ___ litre il n'a pas vendu trop ____ bouteilles.

7. La plupart ____ étudiants avaient plus de 25 ans.

8. C'est celui ____ cheveux noirs qui n'a pas ____ billets.

9. Selon les dernièrs indices économiques ___ Italie a dépassé ___ Danemark.

10. Elle n'aime pas ____ musique classique, donc elle n'a pas reçu ____ disques.

Appendix 1

OLLCALLQUEST3
Pretest

In the sentences below, give the French equivalent using one of the following modal verbs: falloir, devoir, pouvoir, savoir, or vouloir.

1. (Could you) m'acheter des livres à Paris?

2. Le gouvernement (should) faire face aux opinions des Écossais.

3. Il (might) être reçu en juin s'il travaille assez.

4. Il me (need) cinquante francs pour pouvoir aller au cinéma ce soir.

5. En janvier nous (will owe) quatre mois de loyer.

6. M. Bernard Tapie (is supposed to) être nommé ministre de la ville ce soir.

7. (May I) parler au directeur tout de suite, s'il vous plaît?

8. Elle (must have) beaucoup l'aimer si elle l'a accompagné en Italie.

9. Chaque fois ils ne (could) pas atteindre le sommet.

10. (Would you please) vous asseoir là-bas?

Appendix 1

OLLCALLQUEST3
Posttest

In the sentences below, give the French equivalent using one of the following modal verbs: falloir, devoir, pouvoir, savoir, or vouloir.

1.On (should) donner plus d'aide aux pays du Tiers Monde.

2. Son mari (might have) arrêter de chanter pendant qu'elle parlait.

3. Il lui (needed) cinq points pour avoir son bac.

4. (Am I to) l'accompagner à l'aéroport cet après-midi?

5. Cela (may) être vrai.

6. A mon avis, elle (ought to) déménager avant la fin du mois.

7. (Would you please) répondre à ma lettre dans les plus brefs délais?

8. C'était son fils qui nous (owed) les deux milles francs.

9. Le chauffeur ne (could) pas voir les autres voitures à cause du brouillard.

10. (Could you) m'aider à porter ces valises?

Appendix 2

CALLQUEST1

Name

1. Is your attitude to computers
   - positive
   - negative
   - indifferent

2. Have you used a computer before? Y/N
   If yes, for what purpose?
   - word
   - processing
   - games
   - maths
   - programming
   - reference
   - other

3. Do you think that a computer could help you in learning French? Y/N /maybe

4. The best way to learn grammar is
   - a grammar
   - book
   - a teacher
   - a computer
   - program
   - a combination
   - of the above

5. Have you found the CALL exercises useful? Y/N
   If yes, in what respect?

6. Do you feel you have fully mastered the grammar points in question? Y/N

7. In your opinion can CALL exercises supplement/replace
   - a grammar book
   - a teacher

8. Is your attitude to CALL
   - more positive
   - more negative
   - the same

Appendix 3

The Statistical Results

A OLLCALLQUEST1 and HOCALLQUEST1

1 OLLCALLQUEST1

Number of respondents	23
had used a computer before	20
thought computer would aid learning	3
thought computer would not aid learning	1
thought computer might aid learning	19
positive attitude towards computers	8
negative attitude towards computers	0
indifferent	15
found CALL exercises useful	20

2 HOCALLQUEST1

Number of respondents	28
had used a computer before	25
thought computer would aid learning	5
thought computer would not aid learning	1
thought computer might aid learning	22
positive attitude towards computers	12
negative attitude towards computers	5
indifferent	10
found CALL exercises useful	28

Appendix 3

B **OLLCALLQUEST2 and HOCALLQUEST2**

1 OLLCALLQUEST2

Number of respondents	98
mean no. pretest mistakes	3.01
mean no. posttest mistakes	2.65
No. who completed ART1	58
mean no. pretest mistakes	3.18
mean no. posttest mistakes	2.74
No. who completed ART2	40
mean no. pretest mistakes	2.76
mean no. posttest mistakes	2.51
No. in Subsample A	24
who completed ART1	10
who completed ART2	14
mean no. pretest mistakes	1.33
mean no. posttest mistakes	2.02
No. in Subsample B	21
who completed ART1	13
who completed ART2	8
mean no. pretest mistakes	5.07
mean no. posttest mistakes	3.5

2 HOCALLQUEST2

Number of respondents	38
mean no. pretest mistakes	1.95
mean no. posttest mistakes	1.89
No. who completed ART1	18
mean no. pretest mistakes	1.92
mean no. posttest mistakes	1.81
No. who completed ART2	18
mean no. pretest mistakes	2.04
mean no. posttest mistakes	2.03

Appendix 3

C OLLCALLQUEST3

Number of respondents	74
mean pretest score	6.23
mean posttest score	7.11
No. in Subsample A	19
mean pretset score	8.42
mean posttest score	8.42
No. in Subsample B	16
mean pretest score	3.63
mean posttest score	5.06

Appendix 4
Printout of test program art 1

```
The Article
ARTI-Exercise 1
@<NOCAPS>
@<BLANK>
#0
!
!
!
!
!
!                    <RV>THE ARTICLE<RV>
!
!
!
!        In this exercise you need to fill in the blanks with the
!      appropriate article (le,la,du,une,des etc.) or type <RV>0<RV>
!                  if no article is required.
!            When you have typed your answer, press ENTER.
#1
/<BLANK>
/              Put the appropriate article in the blank,
/                 or <RV>0<RV> if none is required.
?
?
?
?
?
?1.Je voulais acheter les bananes à 6,50 <MARK:Q1>  kilo.
?<CUR:Q1>
+le
#2
/<BLANK>
/              Put the appropriate article in the blank,
/                 or <RV>0<RV> if none is required.
?
?
?
?
?
?2.Ils ne sortaient jamais <MARK:Q2>  dimanche.
?<CUR:Q2>
+le
#3
/<BLANK>
/              Put the appropriate article in the blank,
/                 or <RV>0<RV> if none is required.
?
?
?
?
?
?Les mineurs n'ont pas eu <MARK:Q3>  salaire à cause de la grève.
?<CUR:Q3>
+de
#4
```

/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?4. <MARK:Q4> Anglais ne mangent pas beaucoup de tripes.
?<CUR:Q4>
+les
#5
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?5. La plupart <MARK:Q5> délégués sont partis après son discours.
?<CUR:Q5>
+des
#6
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?6. Parlez-vous <MARK:Q6> espagnol?
?<CUR:Q6>
+0
#7
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?7. Les Ecossais apprécient <MARK:Q7> vin de plus en plus.
?<CUR:Q7>
+le
#8
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?8. Est-ce que ce prix comprend <MARK:Q8> petit déjeuner?
?<CUR:Q8>

+le
#9
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?9. Je leur ai dit que mon frère était <MARK:Q9> comptable.
?<CUR:Q9>
+0
#10
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?10. C'était avec <MARK:Q10> grande sensibilité qu'il lui parlait.
?<CUR:Q10>
+une
#11
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?11. Il y a moins de monde à la piscine <MARK:Q11> weekend.
?<CUR:Q11>
+le
#12
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?12. Apprendre <MARK:Q12> suédois, ce n'est pas facile!
?<CUR:Q12>
+le
#13
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?

?13. <MARK:Q13> Bangladesh reçoit de l'aide financier des USA.
?<CUR:Q13>
+le
#14
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?14. Il marchait <MARK:Q14> tête en l'air.
?<CUR:Q14>
+la
#15
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?15. Avez-vous passé <MARK:Q15> bonnes vacances?
?<CUR:Q15>
+de
#16
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?16. C'est la loi qui assure <MARK:Q16> sécurité pour tous.
?<CUR:Q16>
+la
#17
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?17. A ton avis, est-ce qu'elle aime <MARK:Q17> café?
?<CUR:Q17>
+le
#18
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?

?
?
?18. Non, elle n'est pas <MARK:Q18> allemande.
?<CUR:Q18>
+0
#19
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?19. Les entreprises n'offraient plus <MARK:Q19> réductions aux clients.
?<CUR:Q19>
+de
#20
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?20. On l'a vu <MARK:Q20> semaine dernière.
?<CUR:Q20>
+la
#21
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?21. Bien <MARK:Q21> réponses sont fausses.
?<CUR:Q21>
+des
#22
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?22. Pour une bonne ratatouille, il avait assez <MARK:Q22> tomates.
?<CUR:Q22>
+de
#23
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?

?
?
?
?
?23. <MARK:Q23> désarmement nucléaire n'est plus possible.
?<CUR:Q23>
+le
#24
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?24. Combien <MARK:Q24> verres que j'ai achetés sont cassés?
?<CUR:Q24>
+des
#25
/<BLANK>
/ Put the appropriate article in the blank,
/ or <RV>0<RV> if none is required.
?
?
?
?
?
?25. Ce livre-là a autant <MARK:Q25> pages que celui-là.
?<CUR:Q25>
+de
#end

Appendix 4
Printout of test program on articles (art2)

Article2
Calis tools program version 3.78
Existing text file is A:artII.cal

Fill in the blanks with the appropriate article un,une,du,des,le,la etc.
or with 0 if no article is required.

#1
\<BLANK1>Le\ weekend, ils ne sortaient pas souvent. Mais ce samedi-là,
Jean-Pierre n'avait plus \<BLANK2>de\ travail à faire, et il voulait
prendre \<BLANK3>l'\air.Sa femme Géraldine, \<BLANK4>0\
professeur, n'avait pas vraiment envie d'aller en ville,
et lui dit que \<BLANK5>l'\air frais la fatiguait.
Son mari, qui adorait flâner au marché, la persuada et ils partirent
tout de suite après \<BLANK6>le\ petit déjeuner.
C'était donc avec \<BLANK7>une\ vive inquiétude que Géraldine
prit le chéquier, sachant très bien que Jean-Pierre aimait ses petites
gâteries \<BLANK8>le\ weekend. Le samedi, il achetait le journal
anglais The Times , puisqu'il prenait \<BLANK9>0\ plaisir à
lire la liste des rendez-vous de la reine. Pour lui, la reine
Elisabeth \<BLANK10>0\deux représentait tout ce qu'il admirait
chez les Anglais.
A l'âge de dix-neuf ans, il avait visité \<BLANK11>la\ Grande-Bretagne
pour la première fois avec Géraldine. Ils s'y étaient faits \<BLANK12>de\
très bons amis, qu'ils essayaient de voir chaque fois qu'ils
allaient à Londres. Comme la plupart \<BLANK13>des\ amis
habitaient dans le Kent, cela ne posait pas \<BLANK14>de\ problème.
Lors d'un de leurs séjours à Londres, ils rencontrèrent dans un pub
\<BLANK15>des\ Ecossais qui avaient appris \<BLANK16>le\ français et,
dans la conversation, ils se mirent à parler \<BLANK17>de la\ reine.
Selon les Ecossais, c'était une femme qui n'avait pas
\<BLANK18>de\ personnalité, et qui volait une grande partie
\<BLANK19>de l'\ argent qui pourrait aider à résoudre bien \<BLANK20>des\
problèmes économiques de leur pays. Jean-Pierre,
prêt à défendre sans \<BLANK21>0\ hésitation sa préférence

pour \<BLANK22>l'\ Angleterre, leur dit qu'il s'intéressait
beaucoup \<BLANK23>à la\ reine et qu'il admirait
énormément les Anglais. Les Ecossais furent surpris \<BLANK24>d'une\
telle opinion, surtout de la part d'un Français, un peuple pour lequel
ils avaient \<BLANK25>la\ plus grande admiration.

Current date and time are Tue Jan 28 12:39:59 1992

@<NOPRAISE>
#0
! CLOZE PROCEDURE
!
!
! Please fill in each blank in the following text. Every blank is
! recoverable through contextual clues. First, read through the text,
! then begin to fill in the blanks. You may use the white arrow keys
! to scroll through the text if necessary.
!
! Type the correct word or phrase into the blank where the cursor appears,
! then type [ENTER]. Your answer may be larger or smaller than the blank.
!
? Fill in the blanks with the appropriate article un,une,du,des,le,la etc.
? or with 0 if no article is required.
?
? #1
? <UL>1 <UL> weekend, ils ne sortaient pas souvent. Mais ce samedi-là,
? Jean-Pierre n'avait plus <UL>2 <UL> travail à faire, et il voulait
? prendre <UL>3 <UL>air.Sa femme Géraldine, <UL>4<UL>
? professeur, n'avait pas vraiment envie d'aller en ville,
? et lui dit que <UL>5 <UL>air frais la fatiguait.
? Son mari, qui adorait flâner au marché, la persuada et ils partirent
? tout de suite après <UL>6 <UL> petit déjeuner.
? C'était donc avec <UL> 7 <UL> vive inquiétude que Géraldine
? prit le chéquier, sachant très bien que Jean-Pierre aimait ses petites
? gâteries <UL>8 <UL> weekend. Le samedi, il achetait le journal
? anglais The Times , puisqu'il prenait <UL>9<UL> plaisir à

? lire la liste des rendez-vous de la reine. Pour lui, la reine
? Elisabeth <UL>10<UL>deux représentait tout ce qu'il admirait
? chez les Anglais.
? A l'âge de dix-neuf ans, il avait visité <UL>11<UL> Grande-Bretagne
? pour la première fois avec Géraldine. Ils s'y étaient faits <UL>12<UL>
? très bons amis, qu'ils essayaient de voir chaque fois qu'ils
? allaient à Londres. Comme la plupart <UL>13 <UL> amis
? habitaient dans le Kent, cela ne posait pas <UL>14<UL> problème.
? Lors d'un de leurs séjours à Londres, ils rencontrèrent dans un pub
? <UL>15 <UL> Ecossais qui avaient appris <UL>16<UL> français et,
? dans la conversation, ils se mirent à parler <UL> 17 <UL> reine.
? Selon les Ecossais, c'était une femme qui n'avait pas
? <UL>18<UL> personnalité, et qui volait une grande partie
? <UL> 19 <UL> argent qui pourrait aider à résoudre bien <UL>20 <UL>
? problèmes économiques de leur pays. Jean-Pierre,
? prêt à défendre sans <UL>21<UL> hésitation sa préférence
? pour <UL>22<UL> Angleterre, leur dit qu'il s'intéressait
? beaucoup <UL> 23 <UL> reine et qu'il admirait
? énormément les Anglais. Les Ecossais furent surpris <UL> 24 <UL>
? telle opinion, surtout de la part d'un Français, un peuple pour lequel
? ils avaient <UL>25<UL> plus grande admiration.
?

#1
?<Q><CUR: 1;1>
?<Q><CUR: 5;3> weekend, ils ne sor <CUR: 5;3>
+Le;<Q><CUR: 5;3><BO>Le<BO> weekend, ils ne sor
+le;<Q><CUR: 5;3><BO>Le<BO> weekend, ils ne sor
&<D> Yes. This indicates the repetitive at weekends .
-un;
&<D> No. You want to use the definite article to indicate
& the repetitive at the weekend .
-les;
&<D> To indicate the regularity expressed in the English
& at weekends , French uses the definite article in the singular.
-en;
&<D> This would mean for the weekend and does not convey
& the regular nature of the action.

-<PASS>;<Q><CUR: 5;3><UL>1 <UL> weekend, ils ne sor
-<GIVEUP>;<Q><CUR: 5;3><BO>Le<BO> weekend, ils ne sor
&<D> The Correct Answer is: Le

#2
?<Q><CUR: 6;27> travail à faire, et <CUR: 6;27>
+de;<Q><CUR: 6;27><BO>de<BO> travail à faire, et
&<D> Good.After the negative the indefinite article and partitive
& articles are replaced by de .
-du;
&<D> No.After the negative the indefinite article and partitive
& articles are replaced by de .
-le;
&<D> No. This would indicate a specific piece of work.
-<PASS>;<Q><CUR: 6;27><UL>2 <UL> travail à faire, et
-<GIVEUP>;<Q><CUR: 6;27><BO>de<BO> travail à faire, et
&<D> The Correct Answer is: de

#3
?<Q><CUR: 7;10> air.Sa femme Géraldi <CUR: 7;10>
+l';<Q><CUR: 7;10><BO>l'<BO>air.Sa femme Géraldi
&<D> Good.
-de l';
&<D> No. The verb is prendre l'air .
-un;
&<D> No. The verb is prendre l'air .
-<PASS>;<Q><CUR: 7;10><UL>3 <UL>air.Sa femme Géraldi
-<GIVEUP>;<Q><CUR: 7;10><BO>l'<BO>air.Sa femme Géraldi
&<D> The Correct Answer is: l'

#4
?<Q><CUR: 7;36> <CUR: 7;36>
+0;<Q><CUR: 7;36><BO>0<BO>
&<D> Good. The article is not used with a profession.
-un*;
&<D> No. The article is not needed before a profession.
-l*;
&<D> No. This would suggest that she were the only teacher in the school.

-<PASS>;<Q><CUR: 7;36><UL>4<UL>
-<GIVEUP>;<Q><CUR: 7;36><BO>0<BO>
&<D> The Correct Answer is: 0

#5
?<Q><CUR: 9;18> air frais la fatigua <CUR: 9;18>
+l';<Q><CUR: 9;18><BO>l'<BO>air frais la fatigua
&<D> Yes. The article is required to indicate fresh air in general.
-0;
&<D> No. To indicate fresh air in general, the definite article is required.
-un;
&<D> No. You want to use the definite article to indicate
& fresh air in general.
-<PASS>;<Q><CUR: 9;18><UL>5 <UL>air frais la fatigua
-<GIVEUP>;<Q><CUR: 9;18><BO>l'<BO>air frais la fatigua
&<D> The Correct Answer is: l'

#6
?<Q><CUR: 11;22> petit déjeuner. <CUR: 11;22>
+le;<Q><CUR: 11;22><BO>le<BO> petit déjeuner.
&<D> Yes. Names of meals are always preceded by the article.
-le*;
&<D> No. This is not the article.
-0;
&<D> No. The article is required before the names of meals.
-un;
&<D> No. The indefinite article would only be used if
& the noun were qualified, for example by an adjective or
& a relative clause.
-<PASS>;<Q><CUR: 11;22><UL>6 <UL> petit déjeuner.
-<GIVEUP>;<Q><CUR: 11;22><BO>le<BO> petit déjeuner.
&<D> The Correct Answer is: le

#7
?<Q><CUR: 12;21> vive inquiétude que <CUR: 12;21>
+une;<Q><CUR: 12;21><BO>une<BO> vive inquiétude que
&<D> Good. The preceding adjective vive means that
& the indefinite article is needed.

-0;
&<D> No. With a preceding adjective an indefinite article is required.
-d*;
&<D> The indefinite article, not the partitive article is required.
-<PASS>;<Q><CUR: 12;21><UL> 7 <UL> vive inquiétude que
-<GIVEUP>;<Q><CUR: 12;21><BO>une<BO> vive inquiétude que
&<D> The Correct Answer is: une

#8
?<Q><CUR: 14;11> weekend. Le samedi, <CUR: 14;11>
+le;<Q><CUR: 14;11><BO>le<BO> weekend. Le samedi,
&<D> Correct. The indefinite article shows that this takes place
& every weekend.
-les;
&<D> No. The singular indicates that it is something which happens
& regularly at weekends .
-d*;
&<D> No. To indicate the regular nature of the action,
& the definite article is used.
-<PASS>;<Q><CUR: 14;11><UL>8 <UL> weekend. Le samedi,
-<GIVEUP>;<Q><CUR: 14;11><BO>le<BO> weekend. Le samedi,
&<D> The Correct Answer is: le

#9
?<Q><CUR: 15;41> plaisir à <CUR: 15;41>
+0;<Q><CUR: 15;41><BO>0<BO> plaisir à
&<D> Correct. The verb is prendre plaisir à faire qc.
-d*;
&<D> No. The verb is prendre plaisir à faire qc.
-l*;
&<D> No article is required between prendre and plaisir .
& The verb is simply prendre plaisir à faire qc.
-<PASS>;<Q><CUR: 15;41><UL>9<UL> plaisir à
-<GIVEUP>;<Q><CUR: 15;41><BO>0<BO> plaisir à
&<D> The Correct Answer is: 0

#10
?<Q><CUR: 17;12> deux représentait to <CUR: 17;12>

+0 ;<Q><CUR: 17;12><BO>0<BO>deux représentait to
&<D> Excellent. With a series of monarchs no article is
& used in French.
-l*;
&<D> No. French doesn't need an article to say Elizabeth the
& Second, Louis the fourteenth etc.
-<PASS>;<Q><CUR: 17;12><UL>10<UL>deux représentait to
-<GIVEUP>;<Q><CUR: 17;12><BO>0<BO>deux représentait to
&<D> The Correct Answer is: 0

#11
?<Q><CUR: 19;44> Grande-Bretagne <CUR: 19;44>
+la;<Q><CUR: 19;44><BO>la<BO> Grande-Bretagne
&<CUR: +4><D> Good. Names of countries are always preceded by the article.
-0;
&<CUR: +4><D> No. Names of countries must be preceded by the article.
-en;
&<CUR: +4><D> No preposition is required after visiter , just the article.
-une;
&<CUR: +4><D> No. The definite article is required.
-<PASS>;<Q><CUR: 19;44><UL>11<UL> Grande-Bretagne
-<GIVEUP>;<Q><CUR: 19;44><BO>la<BO> Grande-Bretagne
&<D> The Correct Answer is: la

#12
?<Q><CUR: 20;62> <CUR: 20;62>
+de;<Q><CUR: 20;62><BO>de<BO>
&<CUR: +4><D> Good. The partitive article is contracted before the plural
adjective.
-des;
&<CUR: +4><D> No.With a plural adjective the partitive article
& needs to be contracted to de .
-d*;
&<CUR: +4><D> No. The partitive article needs to be contracted to de
& before the preceding plural adjective bons .
-l*;
&<CUR: +4><D> No. The partitive article is required here.
-<PASS>;<Q><CUR: 20;62><UL>12<UL>

-<GIVEUP>;<Q><CUR: 20;62><BO>de<BO>
&<D> The Correct Answer is: de

#13
?<Q><CUR: 22;39> amis <CUR: 22;39>
+des;<Q><CUR: 22;39><BO>des<BO> amis
&<CUR: +4><D> Yes. The partitive article, usually contracted to de
& after expressions of quantity, doesn't change after la plupart .
-d';
&<CUR: +4><D> No. You don't need to contract the article after la plupart ,
& as you do after other expressions of quantity.
-de;
&<CUR: +4><D> No. You don't need to contract the article after la plupart ,
& as you do after other expressions of quantity.
-l*;
&<CUR: +4><D> No. The partitive article is required here.
-<PASS>;<Q><CUR: 22;39><UL>13 <UL> amis
-<GIVEUP>;<Q><CUR: 22;39><BO>des<BO> amis
&<D> The Correct Answer is: des

#14
?<Q><CUR: 23;46> problème. <CUR: 23;46>
+de;<Q><CUR: 23;46><BO>de<BO> problème.
&<CUR: +4><D> Good. After the negative de is required.
-d*;
&<CUR: +4><D> No. After the negative de is used.
-l*;
&<CUR: +4><D> No. You want a form of the partitive article.
-un;
&<CUR: +4><D> No. You want to use a form of the partitive article.
-<PASS>;<Q><CUR: 23;46><UL>14<UL> problème.
-<GIVEUP>;<Q><CUR: 23;46><BO>de<BO> problème.
&<D> The Correct Answer is: de

#15
?<Q><CUR: 25;2> Ecossais qui avaien <CUR: 25;2>
+des;<Q><CUR: 25;2><BO>des<BO> Ecossais qui avaien
&<CUR: +4><D> Yes. Just the plural of the partitive article.

-les;
&<CUR: +4><D> No. You require the partitive article de etc.
& to indicate some Scots.
-un;
&<CUR: +4><D> No. The verb is plural.
-<PASS>;<Q><CUR: 25;2><UL>15 <UL> Ecossais qui avaien
-<GIVEUP>;<Q><CUR: 25;2><BO>des<BO> Ecossais qui avaien
&<D> The Correct Answer is: des

#16
?<Q><CUR: 25;34> français et, <CUR: 25;34>
+le;<Q><CUR: 25;34><BO>le<BO> français et,
&<CUR: +4><D> Good. The article is needed with the language except
& after the verb parler .
-0;
&<CUR: +4><D> No. The article can only be left out after the verb parler .
-un*;
&<CUR: +4><D> No. The use of the indefinite article means that the
& noun has to be qualified either by an adjective or by
& a relative clause e.g Il parlait un français impécable .
-<PASS>;<Q><CUR: 25;34><UL>16<UL> français et,
-<GIVEUP>;<Q><CUR: 25;34><BO>le<BO> français et,
&<D> The Correct Answer is: le

#17
?<Q><CUR: 26;47> reine. <CUR: 26;47>
+de la;<Q><CUR: 26;47><BO>de la<BO> reine.
&<CUR: +4><D> Yes. parler de :to speak about.
-d*;
&<CUR: +4><D> No. Check the gender/number.
-&;
&<CUR: +4><D> No. parler de is "to talk about".
-<PASS>;<Q><CUR: 26;47><UL> 17 <UL> reine.
-<GIVEUP>;<Q><CUR: 26;47><BO>de la<BO> reine.
&<D> The Correct Answer is: de la

#18
?<Q><CUR: 28;2> personnalité, et qu <CUR: 28;2>

+de;<Q><CUR: 28;2><BO>de<BO> personnalité, et qu
&<CUR: +4><D> Good. After the negative the indefinite article is replaced
& by de as are any other forms of the partitive article du,de la etc.
-une;
&<CUR: +4><D> No. After a negative all forms of the indefinite article and
& of the partitive article are contracted to de .
-<PASS>;<Q><CUR: 28;2><UL>18<UL> personnalité, et qu
-<GIVEUP>;<Q><CUR: 28;2><BO>de<BO> personnalité, et qu
&<D> The Correct Answer is: de

#19
?<Q><CUR: 29;2> argent qui pourrait <CUR: 29;2>
+de l';<Q><CUR: 29;2><BO>de l'<BO> argent qui pourrait
&<CUR: +4><D> Good. In this case, because argent is qualified by a relative
& clause qui... , the article can be used even after an expression of
& quantity:"a lot of the money which...".
-du;
&<CUR: +4><D> No. Not before a vowel.
-d*;
&<CUR: +4><D> No. Despite there being an expression of quantity, the article
& must be used to indicate the specific case. This is shown
& by the relative clause: "the money which ...".
-l*;
&<CUR: +4><D> No. You need to use the partitive article.
-<PASS>;<Q><CUR: 29;2><UL> 19 <UL> argent qui pourrait
-<GIVEUP>;<Q><CUR: 29;2><BO>de l'<BO> argent qui pourrait
&<D> The Correct Answer is: de l'

#20
?<Q><CUR: 29;50> <CUR: 29;50>
+des;<Q><CUR: 29;50><BO>des<BO>
&<CUR: +4><D> Excellent. After la plupart and bien you don't
& contract the article to de , as you do after
& other expressions of quantity.
-de;
&<CUR: +4><D> No.After la plupart and bien you don't
& contract the article to de , as you do after
& other expressions of quantity.

& e.g Plein d'idées
-<PASS>;<Q><CUR: 29;50><UL>20 <UL>
-<GIVEUP>;<Q><CUR: 29;50><BO>des<BO>
&<D> The Correct Answer is: des

#21
?<Q><CUR: 31;23> hésitation sa préfé <CUR: 31;23>
+0 ;<Q><CUR: 31;23><BO>0<BO> hésitation sa préfé
&<CUR: +4><D> Good. No article is required in such prepositional
& constructions:
& e.g. Elle l'a dit avec certitude
-l*;
&<CUR: +4><D> No. Where a preposition is used in an adverbial
& construction like sans hésitation the article is
& ommitted, unless there is an adjective involved.
-un*;
&<CUR: +4><D> No. The article is only required if an adjective precedes
& the noun:
& e.g. avec certitude BUT
& avec une grande certitude
-<PASS>;<Q><CUR: 31;23><UL>21<UL> hésitation sa préfé
-<GIVEUP>;<Q><CUR: 31;23><BO>0<BO> hésitation sa préfé
&<D> The Correct Answer is: 0

#22
?<Q><CUR: 32;7> Angleterre, leur di <CUR: 32;7>
+l';<Q><CUR: 32;7><BO>l'<BO> Angleterre, leur di
&<CUR: +4><D> Good. Names of countries must be preceded by the
& article.
-0;
&<CUR: +4><D> No. The article is required before the names of countries.
-l*;
&<CUR: +4><D> This is the correct article, but check the form.
-un*;
&<CUR: +4><D> No. You want to use the definite article here.
-<PASS>;<Q><CUR: 32;7><UL>22<UL> Angleterre, leur di
-<GIVEUP>;<Q><CUR: 32;7><BO>l'<BO> Angleterre, leur di
&<D> The Correct Answer is: l'

#23
?<Q><CUR: 33;11> reine et qu'il admi <CUR: 33;11>
+à la;<Q><CUR: 33;11><BO>à la<BO> reine et qu'il admi
&<CUR: +4><D> Good. The verb is s'intéresser à qc.
-l*;
&<CUR: +4><D> No. This verb takes a preposition before the object.
-dans;
&<CUR: +4><D> Yes, there is a preposition, but this is not the
& right one.
-<PASS>;<Q><CUR: 33;11><UL> 23 <UL> reine et qu'il admi
-<GIVEUP>;<Q><CUR: 33;11><BO>à la<BO> reine et qu'il admi
&<D> The Correct Answer is: à la

#24
?<Q><CUR: 34;54> <CUR: 34;54>
+d'une;<Q><CUR: 34;54><BO>d'une<BO>
&<CUR: +4><D> Good. The preposition is de , and the indefinite article
& is required with tel,telle etc.
-par&;
&<CUR: +4><D> No. This is not the correct preposition.
-de&;
&<CUR: +4><D> No. With tel etc. and a noun, the indefinite article
& is required.
-<PASS>;<Q><CUR: 34;54><UL> 24 <UL>
-<GIVEUP>;<Q><CUR: 34;54><BO>d'une<BO>
&<D> The Correct Answer is: d'une

#25
?<Q><CUR: 36;14> plus grande admirat <CUR: 36;14>
+la;<Q><CUR: 36;14><BO>la<BO> plus grande admirat
&<CUR: +4><D> Good.
-une;
&<CUR: +4><D> No. The indefinite article is required with the superlative.
-0;
&<CUR: +4><D> No. The indefinite article is required with the superlative.
-<PASS>;<Q><CUR: 36;14><UL>25<UL> plus grande admirat
-<GIVEUP>;<Q><CUR: 36;14><BO>la<BO> plus grande admirat

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&<D> The Correct Answer is: la

#end