

DOCUMENT RESUME

ED 383 181

FL 022 963

AUTHOR Mills, Jon
 TITLE Learner Autonomy through the Use of a Concordancer.
 PUB DATE 94
 NOTE 26p.; Paper presented at the Meeting of EUROCALL (Karlsruhe, Germany, 1994).
 PUB TYPE Reports - Evaluative/Feasibility (142) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
 DESCRIPTORS Computer Assisted Instruction; *Computer Software; Error Analysis (Language); Foreign Countries; *Indexes; *Indexing; *Language Patterns; Language Usage; Lexicology; Research Tools; Second Language Instruction; *Second Languages; Student Participation; *Student Research

ABSTRACT

Discussion of the use of computerized concordancers (computer software packages that enable large quantities of text to be searched for all occurrences of a particular lexical item) focuses on their potential as a tool for students to use in learning a second language. In considering the pedagogical value of such tools, three areas are considered. The first is the capability of the concordancer to scan text and make comparisons, isolate collocations, sort occurrences alphabetically, compile word lists, and count word occurrences. The second is the source of electronic text, its preparation for analysis, and selection of software. Several specific programs are compared. The third area for consideration is the type of activities students might undertake with a concordancer. It is recommended that such activities encourage the student to take control of his own learning through purposeful interaction with texts, with the teacher in the role of facilitator of student-initiated research. Possible activities include comparison of the student's errors in written work with examples from authentic text, analysis of collocations, differences in register, support for composition exercises, and investigation of an author's vocabulary usage patterns. A list of related addresses is included. Contains 35 references. (MSE)

 * Reproductions supplied by EDRS are the best that can be made *
 * from the original document. *

Learner Autonomy Through the Use of a Concordancer
Jon Mills

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
 This document has been reproduced as
received from the person or organization
originating it
 Minor changes have been made to improve
reproduction quality
• Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Jon Mills

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Fh 027953

Learner Autonomy through the Use of a Concordancer

1 Introduction

A concordancer is a computer software package that enables large quantities of text to be rapidly searched for all the occurrences of a particular lexical item. Each occurrence of that word is then displayed in its context, usually one complete line with the key word centred. In addition, many concordancers perform a number of other, related tasks such as producing wordlists, indices and frequency counts. The concordance is central to corpus linguistics, because it acts as an informant of linguistic usage. It facilitates rapid scanning and comparison, and thereby allows many important language patterns in texts to be accessed. Concordances thus provide evidence about a language that is not easily elicited by any other method. It is not surprising, therefore, that, with the availability of good easy-to-use software and sources of machine readable text, the use of concordance-generating computer software is also becoming increasingly popular in the field language teaching. A concordancer may, on the one hand, be used by the teacher for the preparation of course materials. However this discussion will limit itself to the student's direct employment of a concordancer as a learning resource because this brings about a learner centred approach involving purposeful interaction with texts and selective attention to linguistic features. In considering the pedagogical value of such tools, there are three main areas that need to be considered.

2 Automatic Concordance Generation

First it might be helpful to give a summary of what a concordancer can provide. Concordances can be produced in a variety of formats. KWIC, an acronym for Key Word In Context, is used to refer to a concordance in

which a whole line of text is printed for each occurrence of a word, with the word under examination in the middle. The item under investigation is known as the key word or node. A wide range of linguistic features can be the key word of a concordance. In the following concordance, made from a short newspaper article, the key word is a single item, the definite article.

5	e	Players promised to bring the house down with their annual pan
12	islodging a ceiling tile in the new village hall where Jack and	
13	village hall where Jack and the beanstalk opened last night. Pla	
20	re was no danger to anyone. The cannon was simply too highly cha	
26	cartridge but we've now got the right ones. We had dislodged som	
30	shifted an inch or two when the cannon went off, nothing more. C	
34	opher Ringrose, chairman of the village hall committee who is al	
36	ee who is also in charge of the pantomime lighting, denied the b	
37	pantomime lighting, denied the blast had caused any damage. No	
42	l Disco Services in Redruth the cannon was hired, said he always	
47	ves, I issue a message over the PA system. I consider this is a	

The numbers in the left hand margin, refer to line numbers in the text. By bringing these noun phrases together we get a list of items that serve as props to the story. Even without having read the account in its original form, this short concordance gives a very good idea of what the story is about.

Phrasal studies are among the most interesting opportunities for new research. A collocation of two items, for example, such as *village hall*, may, for example, be the subject of a concordance:

12	g	a ceiling tile in the new village hall where Jack and the bean
34	r	Ringrose, chairman of the village hall committee who is also i

Alternatively a search can be done for a morpheme. For example, a concordance of **ing* could be used to examine all the gerunds in an English language text.

4 ckhouse Players promised to **bring** the house down with their annu
 12 a finale song, dislodging a **ceiling** tile in the new village hall
 27 ones. We had dislodged some **ceiling** tiles to install microphones
 32 non went off, nothing more. **Confirming** Mr. Watson's statement, M
 11 t off during a finale song, **dislodging** a ceiling tile in the new
 36 in charge of the pantomime **lighting**, denied the blast had cause
 21 oo highly charged but we're **using** smaller cartridges now. Produc
 24 tson said We made a mistake **using** a wrong cartridge but we've no

Of course several words that are not gerunds, such as *bring* and *ceiling*, will also slip through, but they can easily be edited out.

A search can be made for all the inflected forms of a given lemma, such as *be, is, are, was, were, 're*.

48 PA system. I consider this **is** a good idea
 35 village hall committee who **is** also in charge of the pantomime l
 9 unday's technical rehearsal **was** brought to an abrupt halt when a
 42 vices in Redruth the cannon **was** hired, said he always issued len
 18 caused and certainly there **was** no danger to anyone. The cannon
 29 install microphones and it **was** one of these which shifted an in
 20 anger to anyone. The cannon **was** simply too highly charged but we
 16 s. Lynne Smith, said: There **was** very little damage caused and ce
 21 mply too highly charged but **we're** using smaller cartridges now.

Concordances can be sorted in a number of ways. They may be sorted in the order in which the examples occur in the text, as in the examples above. It has been suggested that sorting alphabetically by the right of the keyword is the form that is most generally helpful (Sinclair 1986 : 197). In other words, the words occurring immediately after the keyword are in alphabetical order, *beanstalk, blast, cannon, house*, etc..

13 village hall where Jack and **the** beanstalk opened last night. Pla
 37 pantomime lighting, denied **the** blast had caused any damage. No
 42 l Disco Services in Redruth **the** cannon was hired, said he always
 20 re was no danger to anyone. **The** cannon was simply too highly cha
 30 shifted an inch or two when **the** cannon went off, nothing more. C
 5 e Players promised to bring **the** house down with their annual pan
 12 islodging a ceiling tile in **the** new village hall where Jack and
 47 ves, I issue a message over **the** PA system. I consider this is a
 36 ee who is also in charge of **the** pantomime lighting, denied the b
 26 cartridge but we've now got **the** right ones. We had dislodged som
 34 opher Ringrose, chairman of **the** village hall committee who is a l

Notice how this arrangement brings the 3 occurrences of *the cannon* together; *the cannon was hired, the cannon was simply too highly charged, the cannon went off*. These provide a sort of summary of the whole article, and thereby demonstrate the centrality of *the cannon* to the story.

Alternatively a concordance may be sorted alphabetically by the left of the node. In other words, the words occurring immediately before the keyword are in alphabetical order, *and, anyone, bring, denied, etc.*

13 village hall where Jack and **the** beanstalk opened last night. Pla
 20 re was no danger to anyone. **The** cannon was simply too highly cha
 5 e Players promised to bring **the** house down with their annual pan
 37 pantomime lighting, denied **the** blast had caused any damage. No
 26 cartridge but we've now got **the** right ones. We had dislodged som
 12 islodging a ceiling tile in **the** new village hall where Jack and
 34 opher Ringrose, chairman of **the** village hall committee who is al
 36 ee who is also in charge of **the** pantomime lighting, denied the b
 47 ves, I issue a message over **the** PA system. I consider this is a
 42 l Disco Services in Redruth **the** cannon was hired, said he always
 30 shifted an inch or two when **the** cannon went off, nothing more. C

Many concordancing programs will also produce wordlists. Wordlists may be alphabetically arranged, arranged in reverse alphabetical order, or in descending order of frequency. By way of illustration, here are extracts from three wordlists prepared from the same short local newspaper article. The wordlist in descending order of frequency lists the most frequently occurring items first. It can be seen from this example that the articles *the* and *a* are the most frequently occurring items in this sample of text. Their

number of occurrences are listed as 11 times for the definite article and 8 times for the indefinite article. The first lexical item in the list is, however, *cannon*, which again indicates it as the central theme of this story. The wordlist in alphabetical order speaks for itself; but notice how the reverse alphabetical order list brings suffixes together. In particular we see here all the -ed verb endings brought together.

Descending Order of Frequency		Alphabetical Order		Reverse Alphabetical Order	
the	11	a	8	a	8
a	8	abrupt	1	idea	1
was	6	actually	1	PA	1
to	5	added	1	had	2
cannon	4	also	1	added	1
Mr	4	always	1	dislodged	1
of	4	an	2	charged	1
said	4	and	3	denied	1
and	3	annual	1	opened	1
He	3	any	1	hired	1
I	3	anyone	1	promised	1
in	3	bang	1	caused	2
it	3	beanstalk	1	shifted	1
no	3	blast	1	issued	1
When	3	bring	1	said	4
an	2	brought	1	and	3
but	2	but	2	kind	1
caused	2	cannon	4	good	1
ceiling	2	cartridge	1	made	1
damage	2	cartridges	1	committee	1
down	2	caused	2	damage	2
had	2	ceiling	2	message	1
hall	2	certainly	1	cartridge	1
is	2	chairman	1	charge	1
now	2	charge	1	he	3
off	2	charged	1	the	11
one	2	Christopher	1	mistake	1
pantomime	2	Clockhouse	1	finale	1
Players	2	committee	1	tile	1
rehearsal	2	confetti	1	little	1
there	2	Confirming	1	pantomime	2
these	2	consider	1	some	1
this	2	Cornwall	1	Lynne	1
tiles	2	damage	2	one	2
use	2	danger	1	anyone	1
using	2	denied	1	There	2
village	2	Disco	1	where	1
We	2	dislodged	1	we're	1
went	2	dislodging	1	more	1
with	2	down	2	these	2
abrupt	1	during	1	whose	1
actually	1	explosives	1	Ringrose	1
added	1	fell	1	use	2
also	1	finale	1	house	1
always	1	firm	1	Clockhouse	1
annual	1	from	1	issue	1
any	1	Gary	1	we've	1
anyone	1	goes	1	We	2
bang	1	good	1	off	2

3 Text sources and software

The second area to be considered concerns sources of electronic text and the software to analyse these texts. In order to use a concordancer, it is

necessary to have texts in machine readable form. There are a number of options regarding the preparation of texts. The keying in of texts manually is slow and laborious. However the conversion of printed matter to electronic form can be automated. An optical character reader (OCR) is a device that converts printed text into ASCII format electronic text. The process is rather like using a photocopier but much slower. Alternatively texts can sometimes be obtained already prepared in electronic form from certain publishers, often on CD-ROM. Other sources are the Oxford Text Archive in Britain and Project Gutenberg at Oregon State University in the United States. These serve as international co-ordinating sites for the endeavour to accumulate texts in machine readable form and include many literary texts. There are also a number of publicly available English language corpora, varying in size from around a hundred thousand to a million or more running words. The largest of these, the British National Corpus, consists of 100 million words of spoken and written text representing a wide variety of styles and genres. It comes with its own text analysis and retrieval software, SARA, and is available over the internet - free to the academic community.

The learner may work with an individual text, a general corpus or a specialised corpus (Tribble 1990 : 5; Tribble & Jones 1990 : 15). An individual text is likely to be the subject of a literature class. A general corpus supplies information about the global behaviour of the items under investigation. A specialised corpus, by contrast, provides the student with a picture of how the language is used within a particular genre or register. A collection of academic papers, for example, can provide valuable insight into usage of vocabulary and grammar appropriate to the genre of academic writing. The comparative study of different writers or

analysis of image and metaphor, on the other hand, is permitted by a collection of short stories or poems (see Kirk 1990; Mparutsa *et al.* 1991).

Many students prepare their own essays with a word processor. In this form they are easily adapted for use with a concordancer, so that students can learn directly from both their own and their fellow students' mistakes (Tribble 1990 : 5-6). Concordance analysis may be used to investigate transitivity, tense, order of adverbs, article usage, etc.. The learner's awareness of English is enhanced as s/he becomes involved in the process of exploring the corpus data.

In order to extract data from a corpus and put it to some sort of use, software tools are necessary. A number of applications packages have been specially developed for extracting information from a corpus. If software is to be suitable for use by language learners, it needs to be user friendly. It also needs to be interactive. In other words, it must respond to the user's commands rapidly. If the user has to wait for a long period, say half an hour or more, between entering commands and receiving output, then the concordancer is not really practicable in the classroom situation.

I will start with *OCP (Oxford Concordance Program)* and its PC version *Micro-OCP* because they have been widely used by language students (Burgess 1987 : 33; Dodd 1987 : 27; Davidson 1990; Kirk 1990). *Micro-OCP* is a flexible package that can be used to produce word-counts, word-lists, indices, KWIC concordances and statistical information from texts. It can sort word-lists in ascending or descending order of frequency, alphabetical or reverse-alphabetical order. However it is not the most user friendly of the software packages available, nor is it interactive. *WordCruncher* allows a set of parameters to be defined that enable the user to search using a phrase, a list of words, two or more words in a defined context, tag words

for text fields, or any logical combination of these. *MicroConcord* and the *Longman Mini Concordancer* are concordance programs designed with the language learner in mind. They offer the opportunity to study the uses, collocations and meanings of selected items, and the structure of language. Unlimited quantities of text may be investigated at speeds fast enough to make interactive classroom concordancing viable. *MicroConcord* and the *Longman Mini Concordancer* both contain their own selected corpora of texts but can, in addition, be used with other texts. *TACT* is a very easy-to-use interactive concordancer that was devised for literary analysis. It is especially suitable for use by students and also features a collocation generator program that lists all the maximal phrases in a text. For the Macintosh, *Conc 1.70* and *Free Text* are available as freeware.

4 Learner Activities

In the third and final area of this discussion the sort of activities that students might undertake with a concordancer, are surveyed. Faerch and Kasper (1983) suggest that the foreign language learner first forms hypotheses concerning target-language rules and then tests these. In line with this assumption, there have been a number of innovations and rediscoveries in recent years which come under the heading of what might be described as 'discovery learning'. According to this approach, the learner is equated with the researcher who having formed a hypothesis on the premise of intuition or slender evidence, goes on to test, reject or refine this in the light of further evidence (Johns 1988 : 14).

It has been suggested that it is as a learning resource to be used freely by students on their own initiative that the most important potential use of an interactive concordancer lies (Johns 1986 : 161). Electronic text analysis

offers the student the opportunity to take control of his/her own learning by means of purposeful interaction with text(s). Johns (1991) calls this approach 'Data Driven Learning' (DDL). The computer is, thus, not seen as a surrogate teacher but is instead regarded a special kind of informant, which is passive and silent until the learner poses a question. It then responds to the question by providing data that the learner tries to interpret. The higher level skills of inferencing, connecting, interpreting and evaluating are then brought into play and informal acquisition is facilitated in addition to selective attention to linguistic or literary features. Once students are familiar with a concordancer, they may use it as readily as a dictionary to find examples of usage from their chosen corpus of text. Their task, then, is to discover the rules from the examples.

The role of the teacher thus becomes that of director and coordinator of student-initiated research rather than transmitter of knowledge. The teacher is restricted to suggesting points at which it may help to solve learning difficulties. It has been observed that since open-ended uses of the computer utilise the computer as a facility or resource, the type of activity is not pre-determined (Phillips 1987 : 176; Johns 1988 : 11, 14; 1991 : 3). Students' use of a concordancer involves more than looking up facts. A single consultation has a tendency to raise other questions, requiring further concordances, which leads to a kind of conjectural learning. The teacher may feel that s/he is being placed at risk, since this sort of activity may be difficult for the teacher to control and therefore difficult to incorporate into a tightly planned lesson (Higgins 1988 : 43; Johns 1988 : 11). The teacher, therefore, must be prepared to stand back and hand autonomy over to the student.

Errors in students' written work can be dealt with by comparing the items which the students have misused with examples from authentic text. Johns (1986 : 161) describes how he used this method with his students.

One possibility with which we have experimented is its use in helping students to correct their written work, some mistakes being underlined and a 'C' placed in the margin signifying "You have used this word in a way which is different from how an English person would use it: if you get a concordance of the word you should be able to work out a suitable correction for yourself."

It has been observed that overseas students frequently have difficulty remembering word collocation (Fox 1987 : 146). Moreover teachers rarely find collocation errors easy to explain. Overt explanation of collocational rules is not practicable. Nevertheless students could gain an insight into word usage from the set of examples that a concordance provides (Levy 1990 : 178; Johns 1988 : 11-12). Concordances could, for example be obtained for the words *interest* and *depend* in order to ascertain which prepositions normally follow them.

tes of use; and, far from being e-cream van - children are more iane, when did you first become Diane Abbott:> I've always been mbridge, and umm I'm still very iewer:> One ... one thing which	interested in studying the possibi interested in ice-cream than in tr interested in politics? <Diane Abb interested in politics, as um, far interested . I'm just doing a serie interested me was. um, polite viol
--	---

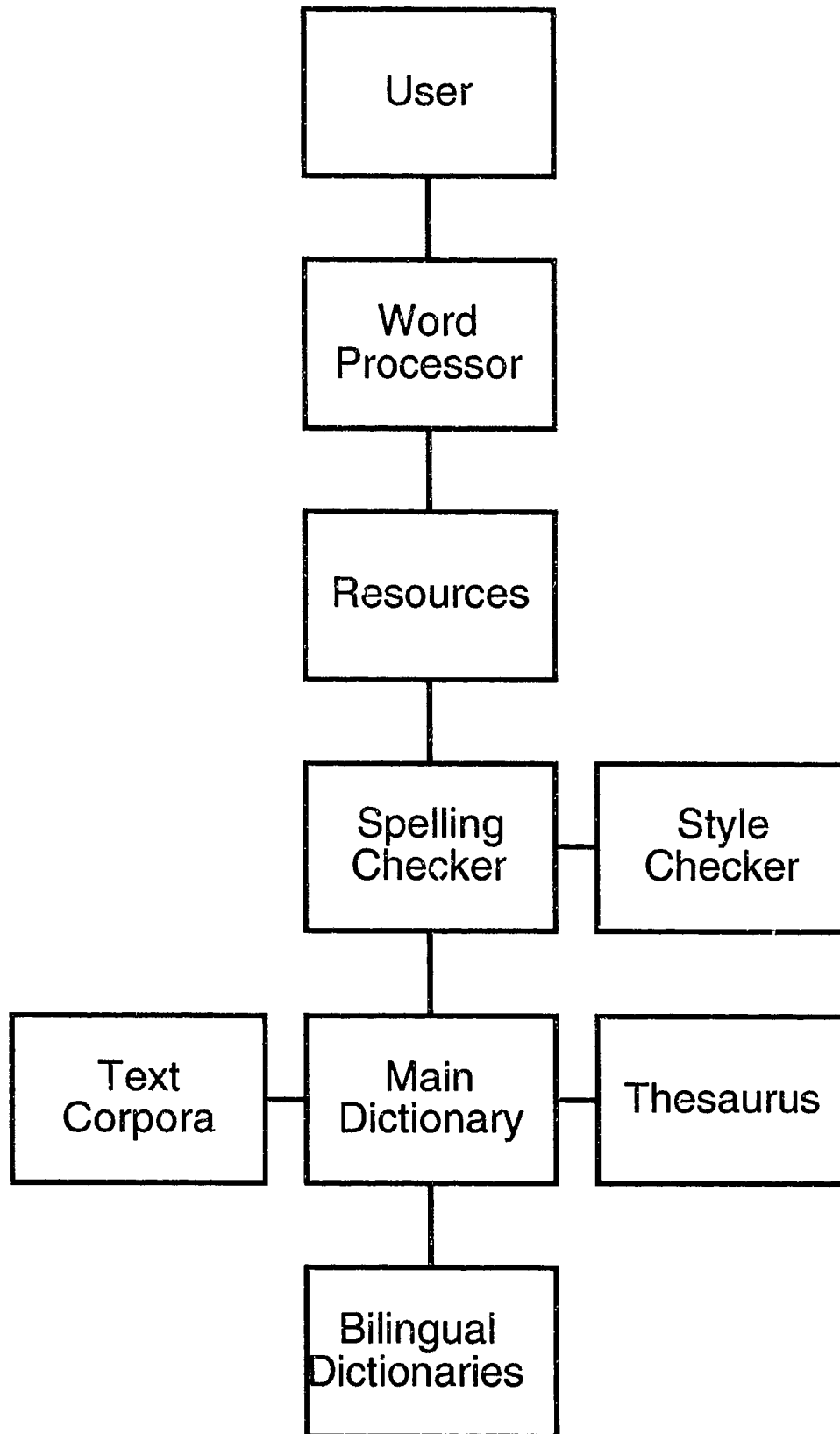
een to nineteen-year-old group, patterns of living which do not epend on fossil fuels at all or de egin to get cross or amused. It ge to pay this by direct debit. irst applications of fertilizer	depending on whether her birthday depend on fossil fuels at all or de depend on them only to a very sligh depends upon their temperament. <I Depending on when you use it, your depend on when the turf was laid. I
---	--

(Tribble & Jones 1990 : 38)

Differences in register are another area that students can investigate with text analysis and retrieval software. Kirk (1990) describes a project

undertaken by undergraduate students of English in which different varieties or registers of English were investigated for the frequency distribution of individual features or groups of features among their vocabulary and grammar. Amongst the varieties investigated were the language of reporting in national and provincial daily and Sunday newspapers, a comparison of learned and scientific writings with romantic fiction, 18th century prose, lyrics of contemporary popular song, and spoken and written humour. Kirk concludes that the students involved learnt both about the structure of the vocabulary and syntax of English on the one hand, and about the structure of individual texts and how these could be shown to differ systematically on the basis of frequency bundles on the other hand. Furthermore he found the activity to have been instrumental in constructive personal learning and observed a growth of proficiency in linguistic identification and of understanding of language use. The students got a feel for the nature of empirical enquiry and their understanding of the structure and relationship of texts was enriched.

A concordancer may be used as an accessory to writing. Levy (1990 : 184 ff.) sees one use of a concordancer as being integrated into a word processing environment with an on-line spelling checker, grammar checker and thesaurus. The whole system might then be combined in a hypertext environment with the word as the basic link. The following diagram illustrates the concept.



Levy (1990 : 185)

Working with this system students have a variety of options as they write or after they have completed a draft. For example, a student might first consult the thesaurus to find a synonym, secondly cross-check with the dictionary for the meaning and then consult a concordance of the item to observe its usage. The system may be either used to check the student's accuracy of usage or alternatively provide a broader approach to linguistic discovery.

In the field of literary studies, there are a number of approaches regarding the use of a concordancer. It has been suggested that the teaching of literature in ELT encourages personal response to text by increasing students' sensitivity to the linguistic means by which textual affects are achieved. A close focus on the linguistic or stylistic features of text is therefore latent. Within the field of literary studies, the application of electronic text analysis to stylistics is of value to the study of structure, style, prosody and content of texts. It is feasible to draw conclusions about *why* a writer uses words in a certain manner if it is accurately known *how* they use words. It then becomes possible to theorise about how texts achieve their effects. An empirical basis is essential if a theory is to be credible and the computer provides the means to collect data not only more accurately but also for much longer texts than would prove feasible by human endeavour (Phillips 1987 : 176, 181). Working with a group of students of German, Burgess (1987 : 35) observes that concordance work brought awareness of the complexity of the average literary text. The nature of the literary text as a pattern, a composite form made up of recurring elements, dependent for this effect on both content and form is made explicit by such work. Discussion of what can be done with text analysis software involves consideration of the reasons for making

concordances and wordlists, which leads to scrutiny of literary analysis methodology.

Word frequency analyses are well known in the field of authorship studies (Wisbey 1971; Hockey 1980). Electronic text analysis offers statistical investigation of, amongst other things, the size and diversity of an author's vocabulary, or detailed study of single words or small sets of words such as *and* or the use of *on* vs. *upon*. In the first paragraph of Hemmingway's short story *Cat in the Rain*, out of 93 word tokens, only some 8 adjectives, *big, green, good, bright, gravel, long* and *empty* are employed. This feature of Hemmingway's style may be easily discovered by students from a wordlist that they have generated and result in useful class debate of Hemmingway's reasons for deliberately adopting such an ascetic technique (Phillips 1987 : 177).

A descending frequency wordlist may be used to select likely candidates for concordancing. The first lexical item encountered in a descending frequency list is normally found to operate, in some way, at the level of the 'literary device' (Louw 1990 : 166). To illustrate, here is a list for Dylan Thomas' *Fern Hill*.

the	61	with	4	is	2
and	34	fields	3	let	2
i	13	happy	3	light	2
was	13	high	3	like	2
in	11	long	3	lovely	2
of	11	on	3	means	2
as	9	under	3	mercy	2
green	7	young	3	moon	2
to	7	a	2	night	2
it	6	about	2	nothing	2
my	6	apple	2	once	2
that	6	by	2	out	2
time	6	cared	2	over	2
his	5	easy	2	sang	2
all	4	foxes	2	simple	2
among	4	from	2	sky	2
farm	4	grass	2	sleep	2
golden	4	hay	2	so	2
house	4	him	2	white	2
me	4	honoured	2		
sun	4	horses	2		

Word frequency list for Dylan Thomas' *Fern Hill*

The first lexical item encountered is *green*. If a concordance is produced for this item, its metaphorical use becomes apparent.

e mercy of his means, And green and golden I was huntsman a
 songs Before the children green and golden Follow him out o
 lovely and watery And fire green as grass, And nightly under
 f his means, Time held me green and dying Though Isang in m
 f his means, Time held me green and dying Though Isang in m
 nd happy as the grass was green The night above the dingle
 warm Out of the whinnying green stable On the fields of pra

One approach requires literature students to examine an argument or set of arguments found in critical literature and use a concordancer to check their validity. The study of thematic patterns or recurrent images in literature may be aided by data concerning the distribution of selected words throughout a given text. For example, Humphreys (1984 : 48), in a discussion of the language of Shakespeare's *Julius Caesar*, maintains that "Blood likewise figures symbolically in many guises - the blood of noble

race, the life-stream of heroic figures, the guarantee of Roman quality ...". By means of a text analysis and retrieval program, a student could produce a concordance of the words *blood* and *bloody* to verify Humphreys' assertion (Davidson 1990 : 81, 84).

215 n triumph over Pompey's blood? Be gone! Run to your houses, fa
1161 ath; when every drop of blood That every Roman bears, and nobl
1205 irit of men there is no blood: O, that we then could come by C
1487 of war, Which drizzled blood upon the Capitol; The noise of b
1567 d spouts, Did run pure blood: and many lusty Romans Came smil
1575 : Your statue spouting blood in many pipes, In which so many
1578 me shall suck Reviving blood, and that great men shall press
1864 rtesies Might fire the blood of ordinary men, And turn pre-or
1867 Caesar bears such rebel blood That will be thaw'd from the tru
1900 And men are flesh and blood, and apprehensive; Yet in the nu
1973 e our hands in Caesar's blood Up to the elbows, and besmear ou
2043 , Who else must be let blood, who else is rank: If I myself,
2047 ch With the most noble blood of all this world. I do beseech
2097 s they stream forth thy blood, It would become me better than
2178 d that shed this costly blood! Over thy wounds now do I prophe
2185 ll the parts of Italy; Blood and destruction shall be so in us
2462 r napkins in his sacred blood, Yea, beg a hair of him for memo
2526 eel away, Mark how the blood of Caesar follow'd it, As rushin
2537 hich all the while ran blood, great Caesar fell. O, what a fa
2581 speech, To stir men's blood: I only speak right on; I tell y
3055 my heart, And drop my blood for drachmas, than to wring From
3112 rutus, When grief, and blood ill-temper'd, vexeth him? BRUTUS
3426 devil, That makest my blood cold and my hair to stare? Speak
3854 o-night, So in his red blood Cassius' day is set; The sun of
884 we have in hand, Most bloody, fiery, and most terrible. CASC
1199 ur course will seem too bloody, Caius Cassius, To cut the head
2057 ough now we must appear bloody and cruel, As, by our hands and
2080 each man render me his bloody hand: First, Marcus Brutus, wil
2094 his peace, Shaking the bloody fingers of thy foes, Most noble
2249 he cruel issue of these bloody men; According to the which, th
2540 f us fell down, Whilst bloody treason flourish'd over us. O,
2555 ! First Citizen O most bloody sight! Second Citizen We will b
2880 they should endure the bloody spur, They fall their crests, a
3531 in gallant show; Their bloody sign of battle is hung out, And

The development of a given type of imagery in, for instance, a Shakespeare play, could be traced in this manner. One could, for example, produce a concordance of all the examples of eye imagery in King Lear, with each occurrence cited according to its line number (Phillips 1987 : 181).

187 he matter; Dearer than eye-sight, space, and liberty; Beyond
 327 he true blank of thine eye. KING LEAR Now, by Apollo,-- KENT
 447 er, A still-soliciting eye, and such a tongue As I am glad I
 3046 nd the pin, squints the eye, and makes the hare-lip; mildews t
 3566 ! My lord, you have one eye left To see some mischief on him
 3856 ast not in thy brows an eye discerning Thine honour from thy s
 3886 g to put out The other eye of Gloucester. ALBANY Gloucester's
 3888 r. ALBANY Gloucester's eye! Messenger A servant that he bred,
 3900 ter! Lost he his other eye? Messenger Both, both, my lord. T
 4056 , And bring him to our eye. [Exit an Officer] What ca
 4068 e power Will close the eye of anguish. CORDELIA All blest sec
 5135 RIL Holla, holla! That eye that told you so look'd but a-squin
 500 our father, with wash'd eyes Cordelia leaves you: I know you w
 1249 eak thus? Where are his eyes? Either his notion weakens, his d
 1363 se about thee! Old fond eyes, Beweep this cause again, I'll pl
 1435 s. ALBANY How far your eyes may pierce I can not tell: Strivi
 1491 ol Why, to keep one's eyes of either side's nose; that what
 2032 d, Take vantage, heavy eyes, not to behold This shameful lodg
 2194 noses are led by their eyes but blind men; and there's not a
 2368 ames Into her scornful eyes! Infect her beauty, You fen-suck'
 2377 o'er to harshness: her eyes are fierce; but thine Do comfort
 3259 d glares! Wantest thou eyes at trial, madam? Come o'er the bo
 3423 GONERIL Pluck out his eyes. CORNWALL Leave him to my displea
 3525 Pluck out his poor old eyes; nor thy fierce sister In his ano
 3537 the chair. Upon these eyes of thine I'll set my foot. GLOUCE
 3656 , and therefore want no eyes; I stumbled when I saw: full oft
 3662 touch, I'd say I had eyes again! Old Man How now! Who's the
 3725 must.--Bless thy sweet eyes, they bleed. GLOUCESTER Know'st t
 3914 when they did take his eyes? Messenger Come with my lady hith
 3930 , And to revenge thine eyes. Come hither, friend: Tell me wha
 3979 hat guests were in her eyes; which parted thence, As pearls f
 3991 water from her heavenly eyes, And clamour moisten'd: then away
 4126 ignorance, Gloucester's eyes being out, To let him live: where
 4213 zzy 'tis, to cast one's eyes so low! The crows and choughs tha
 4282 CESTER Alack, I have no eyes. Is wretchedness deprived that be
 4299 re below, methought his eyes Were two full moons; he had a tho
 4387 G LEAR I remember thine eyes well enough. Dost thou squiny at
 4399 What, with the case of eyes? KING LEAR O, ho, are you there w
 4401 e you there with me? No eyes in your head, nor no money in you
 4402 ney in your purse? Your eyes are in a heavy case, your purse i
 4409 his world goes with no eyes. Look with thine ears: see how yon
 4430 's lips. Get thee glass eyes; And like a scurvy politician, se
 4437 ep my fortunes, take my eyes. I know thee well enough; thy nam
 4466 an of salt, To use his eyes for garden water-pots, Ay, and la
 5054 like foxes. Wipe thine eyes; The good-years shall devour them
 5101 impress'd lances in our eyes Which do command them. With him I
 5327 ee he got Cost him his eyes. EDMUND Thou ha
 5476 Had I your tongues and eyes, I'd use them so That heaven's v
 5512 me. Who are you? Mine eyes are not o' the best: I'll tell you

Certain themes throughout a particular play could be traced by calling up
 all the verses in which certain keywords crop up. Phillips (1987 : 181-2)
 shows how a KWIC concordance of the *-ing* form of the verb can be used

as a powerful tool in the stylistic analysis of Hemmingway's *Cat in the Rain*.

<p>had a momentary feeling of being an in a rubber cape was crossing touched under one of the dripping m was on the second floor facing ght colours of the hotels facing nt. She had a momentary feeling and looked out. It was getting sent her. With the maid holding heavy face and big hands. Liking cat'. George was not listening. the cafe a waiter stood looking wife stood at the window looking r of the dressing-table, looking ir grow out?' she asked, looking aid. 'I get so tired of looking ing again. His wife was looking e husband went on reading, lying get the cat?' he asked, putting ned in the rain. It was raining. and lookd out. It was raining was quite dark and still raining e'. The husband went on reading. George was on the bed reading. d, resting his eyes from reading. n the rain.' George was reading d,' George said. He was reading s not listening. He was reading . 'Oh shut up and get something t get wet', she smiled, speaking were only two Americans stopping reen tables. The cat was trying</p>	<p>of supreme importance. Sh the empty square to the d green tables. The cat was the sea. It also faced th the gardens and the sea. of being of supreme impor dark.'I want to pull my the umbrella over her, sh him she opened the door a He was reading his book. out at the empty square. out. Outside right under at herself with the hand at her profile again. Geo like a boy.' George shift out of the window. It was propped up with two pi the book down. 'It was go The rain driped from th harder. A man in a rubber in the palm trees. 'Anywa lying propped up with the 'Did you get the cat?' h Sge sat down on the bed. again. She went over and again. His wife was looki his book. His wife looked to read,' George said. He Italian. Of course, the h at the hotel. They did no to make herself so compac</p>
--	---

Together the words 'looking' and 'reading' account for 13 out of 31 citations or 42%. The word 'looking' has a marked association with the female character and 'reading' with the husband. Phillips suggests that this possibly indicates that the wife is confined to the passive role of observer of life because the husband is too involved in his reading and therefore pays too little attention to his wife.

In one final example, Misesk-Falkoff (1983 : 2-6) discusses the concordancing of theme words such as *love*, *hope* and *fear*. The following is a concordance of the word *love*, spoken by the character Eve, in Milton's *Paradise Lost*.

answering looks Of sympathy and love: There I had fixed Mine eyes	EVE	85
y in out mutual help And mutual love, the crown of all our bliss	AD&EVE	107
qual fear, that my firm faith and love Can by his fraud be shaken	EVE	340
n the event. And what is faith, love, virtue, unassayed Alone, wi	EVE	344
femal sex, the more to draw his love, And render me more equal; a	EVE	373
me in bliss or woe: So dear I love him, that with him all deaths	EVE	373
deprived Thy presence: agony of love till now Not felt, nor shal	EVE	375
May join us, equal joy, as equal love: Lest, thou not tasting, dif	EVE	375
O glorious trial of exceeding love, Illustrious evidence, examp	EVE	383
, Shall separate us, linked in love so dear, To undergo with me	EVE	383
esented This happy trial of thy love, which else So eminently nev	EVE	383
te of thy so true, So faithful, love unequalled: but I feel Far	EVE	383
us. Adam: witness Heaven What love sincere, and reverence in my	EVE	450
ceptance, hopeful to regain Thy love, the sole contentment of my heart	EVE	454

Misek-Falkoff (1983 : 6) observes that Eve's use of *love* alters rapidly after the fall, before which it is coupled with *faith* (stanza 340) and after which it pairs with *agony* (stanza 375).

5 Conclusion

The possibilities for increased learner autonomy that electronic text analysis provides have far reaching implications for language pedagogy. Old convictions, such as the centrality of the syllabus, begin to fade. In any given educational setting, a decision has to be made as to what extent students can take charge of their own learning.

BEST COPY AVAILABLE

Appendix Some Useful Addresses

British National Corpus Oxford University Press, Walton Street, Oxford OX2 6DP. Tel.: 0865 56767. Fax: 0865 56646. E-mail: natcorp@uk.ac.ox.vax.

Conc 1.71 is available as freeware from the International Academic Bookstore, Summer Institute of Linguistics, 7500 W. Camp Wisdom Road, Dallas, TX 75236, USA. Tel. 214-709-2404; Fax: 214-709-2433; E-mail: academic.books@sil.org. It can also be downloaded by anonymous ftp. Contact lexical@nmsu.edu for details.

Electronic Text Library Janet Caldwell Publishing, Oxford University Press, Walton Street, Oxford OX2 6DP. Tel.: 0865 56767.

English Poetry Full Text Database on CD-ROM Chadwyck-Healet Ltd., Cambridge Place, Cambridge CB2 1NR. Tel.: 0223 311479.

International Corpus of English Project Professor Sidney Greenbaum, Director, Department of English, University College London, Gower Street, London WC1E 6BT. Tel.: 071 387 7050 ext 3121. E-mail: uclseu@uk.ac.ucl.

Machine Readable Spoken English Corpus Gerry Knowles, Dept. of Linguistics and Modern English Language, Lancaster University, Lancaster LA1 4YT. Tel.: 0524 65201 ext 3023. Fax: 0524 843085. E-mail: eia008@uk.ac.lancaster.central.

Oxford Text Archive contact Lou Burnard, Oxford University Computing Services, 13 Banbury Road, Oxford OX2 6NN. Tel.: 0865 273238. Fax: 0865 273275. E-mail: archive@uk.ac.ox.vax.

Project Gutenberg general enquiries to Project Gutenberg Director of Communication, E-mail: dircomp@ux1.cso.uiuc.edu

TACT text-retrieval and concordance application is available by FTP as /pub/cch/tact/tact2.1gamma on <epas@utoronto.ca>. Disks with an obsolete printed manual are about \$22 from the Centre for Computing in the Humanities, Robarts Library, Room 14297A, 4 Bancroft Ave., Toronto, ON M5S 1A5, Canada <cch@epas.utoronto.ca>. Ask Ian Lancashire (ian@epas.utoronto.ca) about the TACT-L@utoronto.bitnet discussion group.

Text Encoding Initiative contact Lou Burnard, Oxford University Computing Services, 13 Banbury Road, Oxford OX2 6NN. Tel.: 0865 273238. Fax: 0865 273275. E-mail: lou@uk.ac.ox.vax.

Bibliography

- Bongaerts, T., P. de Haan, H. Wekker & S. Lobbe** eds.(1988) *Computers in English Language Learning* Dordrecht: Foris.
- Bradley, J. & L. Presutti** (1993)*TACT 1.2* Computer software. Toronto: Univ. of Toronto, Freeware. IBM PC or compatible, MS-DOS.
- Burgess, G.** (1987) 'A Course in Humanities Computing Students of German' *Use of Computers in the Teaching of Language and Languages* Bath: CTISS.
- British National Corpus* OUP, Longman, W. & R. Chambers, Lancaster University Unit for Computer Research in the English Language, Oxford University Computing Services, British Library (1994).
- Dodd, W.** (1987) 'Language Departments and Project PALLAS' *Use of Computers in the Teaching of Language and Languages* Bath: CTISS.
- Faerch, C. & G. Kasper** (1983) 'Procedural Knowledge as a Component of Foreign Language Learners' Communicative Competence' in H. Boete & W. Herrlitz eds. *Kommunikation im (Sprach-) Unterricht* Utrecht.
- Fox, G.** (1987) 'The Case for Examples' in Sinclair ed. (1987).
- Gardner, J. & F. McBride** eds. (1990) *Computing Across the Curriculum* Oxford: CTISS, Univ. of Oxford.
- Higgins, J.** (1988) *Language Learners and Computers* London: Longman.
- Hockey, S.** (1980) *A Guide to Computer Applications in the Humanities* Duckworth.
- Humphreys, A.** (1984) *Julius Caesar: the Oxford Shakespeare* Oxford: Clarendon Press.
- Johns, T.** (1986) 'Micro-concord: a Language Learners' Research Tool' *System* XIV.2 151-62.
- Johns, T.** (1988) 'Whence and Whither Classroom Concordancing' in T. Bongaerts et al. *Computers in English Language Learning* Foris.
- Johns, T.** (1990) 'From Print-out to Handout: Grammar and Vocabulary Teaching in the Context of Data Driven Learning' *English Language Research Journal* University of Birmingham.
- Johns, T.** (1991) 'Should You Be Persuaded: Two Examples of Data-Driven Learning Materials' *English Language Research Journal* IV.

- Kirk, J.** (1990) 'The Study of Texts by Computer' in Gardner & McBride eds. (1990).
- Kowitz, J.** (1990) 'Using Computer Concordancers for Literary Analysis' *English Language Research Journal* University of Birmingham.
- Leech, G. & C. Candlin** eds. (1986) *Computers in English Language Teaching and Research* London: Longman.
- Levy, M.** (1990) 'Concordances and their Integration into a Word-processing Environment for Language Learners' *System* XVIII.2 177-88.
- Longman Mini Concordancer* Computer software. Harlow: Longman Group Ltd. . IBM PC or compatible.
- Louw, B.** (1990) 'Classroom Concordancing of Dilexical Forms and the Case for Integrating Language and Literature' *English Language Research Journal* Birmingham: Univ. of Birmingham.
- Micro OCP* Computer software. Oxford: Oxford Electronic Publishing. IBM PC, XT, AT or PS/2 or compatible with minimum 512K RAM and hard disk.
- MicroConcord* Computer software. Oxford: OUP. IBM PC, XT, AT or PS/2 or compatible with minimum 175K RAM, hard disk and MS-DOS 2.11 or higher.
- Mills, J.** (forthcoming) 'Computers in Applied Linguistics' *Applied Linguistics: State of the Art* Exeter: Exeter University Press.
- Misek-Falkoff, L.** (1983) 'Data-base and Query Systems: New and Simple Ways to Gain Multiple Views of the Patterns in Texts' *Association of Literary and Linguistic Computing Journal* IV.1 1-30.
- Mparutsa, C., A. Love & A. Morrison** (1991) 'Bringing Concord to the ESP Classroom' *English Language Research Journal* Birmingham: Univ. of Birmingham.
- OCP (Oxford Concordance Program)* Computer software. Oxford: Oxford Electronic Publishing. Any mainframe; operating systems include VM/CMS, VMS, Unix.
- Phillips, M.** (1987) 'Microcomputers and the Teaching of Literature' *Literary and Linguistic Computing* II.3 176-83.
- Sinclair, J.** (1986) 'Basic Computer Processing of Long Texts' in Leech & Candlin eds. (1986).
- Sinclair, J.** ed. (1987) *Looking Up* London: Collins ELT.

- Thompson, J.** *Conc 1.71* Computer software. Dallas: Summer Institute of Linguistics, Freeware. Mac SE/30 or higher.
- Tribble, C.** (1990) *Concordancing in an EAP Writing Programme* Cambridge: Bell Educational Trust.
- Tribble, C. & G. Jones** (1990) *Concordances in the Classroom* London: Longman.
- Wisbey, R.** ed. (1971) *The Computer in Literary and Linguistic Research* Cambridge: CUP.
- WordCruncher* Computer software. Provo, Utah, USA: Electronic Text Corporation.