6. Concordances, Collocations and Lexical-based Language Analysis: Implications for Computer-aided Pedagogy

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Abstract

Current personal-computer technology allows every computer user to perform statistical and concordance-type studies of written documents. How can teachers best benefit from such technology? What methods and hypotheses appear the most useful to develop educational materials using these techniques? Will they bring about an overall improvement in foreign language teaching? Such will be the object of consideration of this paper. The fundamental role played by a "collocation" will be illustrated through a wide variety of examples. The contextual study of words will draw our attention to their often unpredictable behavior and shed light on the weaknesses besetting "standard grammars" and their associated pedagogies.

Preamble

How often has a student asked about the meaning of a given word – let's say "welfare"? Without hesitation the teacher will reply, "it depends on the context." This contextual dependence raises pedagogical questions to which modern technology — in the even modest form of personal computers — might be of some avail. Personal computers offer the potential for enormous change in both classroom teaching strategies and student apprenticeship techniques. The most appropriate use for our high-tech tools awaits discovery and development. Herein I merely seek to display the range of present-day possibilities. For my own research I have used a Macintosh Duo 280c but kindred software exists for systems running DOS Windows. The lexical analysis examples presented here have all been produced by the software application Hyperbase© available from Professor Étienne Brunet, at the UFR Lettres 98 bd Herriot 06204 Nice. A version for DOS exists as well.

Several hypotheses concerning language learning and language teaching have recently come to the fore: first, the study of disembodied sentences, and *a fortiori*

words, torn from context, provides little means of advancing a learner's use (and not mere knowledge) of language which is inherently context dependent.[1] Thus, the need arises for a coherent way of reconstructing context while at the same time analyzing some particular linguistic phenomenon, so as to discern regularities in usage.

Moreover, the very idea of a word might well merit reconsideration when we take into account several facts concerning both speech and writing[2]. To dodge the problem of specifying a definition for "word", researchers use the term "lexie" or "lexeme" to describe the functional unit of language "memorized in competence[3]" that is, the base unit used by native speakers. Without begging any questions, it seems reasonable to accord credence to the idea that people do not systematically reconstruct all they say or write from a mass of items commonly referred to as words[4]. There exist larger blocks of language, learnt as wholes, knit together by hidebound convention. And while the productive features of language allow us to create novel utterances from our linguistic inventory, *both the inventory and these same features must first be acquired through contextual familiarity*. Finally, a large part of our commonplace intuitions about words derives from a skill we all take so much for granted we are no longer aware that it is acquired: I refer to literacy, our ability to read[5].

My goal, when bringing to bear computer-aided lexical analysis, is to develop a general approach (I avoid saying method) which will allow us, as teachers, to analyze texts written for specific purposes and thus create classroom materials while simultaneously coming to grips with the lexical niceties of English, in particular collocational unity.

If faithfully presenting realistic context to our students is our primary concern, then we must draw on true-life materials. From these materials we must extract the essential lexical structures to teach the students in the given time frame which is allotted to us. We must go for the essential. Thus, we must find the essential. First, I wish to introduce a technical term ***"vocable"*** which may appear at first superfluous, but will (I hope) little by little gain plausibility: by "vocable" I mean any series of letters separated by blanks or punctuation marks in a text. Obviously, this concerns the written or transcribed language. The word "word", I insist, hides a lush undergrowth of references and I wish to by-pass these for a moment.
What we need to establish within the framework of a given text or discursive domain, are the most commonly-used expressions whether we consider them to be institutionalized utterances, functional blocks (called "polywords" by Michael

Lewis), or merely compounds formed from sequences of vocables.
More importantly, and more generally, we need to establish a high-fidelity sample of what is written and said. And we need to display this to the students who will observe, formulate interpretations and implement their hypotheses through application to other situations and contexts. But first and foremost, to understand some particular segment of the language, the learners must see the segment in context, at work, in a real linguistic situation. If we can exhibit a certain number of situations the learner will all the more readily generalize from each occurrence. We must forever bear in mind this fact. *No one sentence can confirm and refute an interpretation of the various uses its component parts might have.* But when you display a larger array of possibilities to the learners, the learners themselves are ideally placed to appreciate the nuances and possible variations to which a given vocable might be subject. We appeal to an inductive approach to language learning rather than merely a deductive approach wherein either the teacher or a dictionary provides a rule which is then exemplified and finally practiced only to be embarrassingly (for the teacher) overturned by some example further on. A final remark should also guide us: the actual language appears more chaotic and unpredictable than the simplified structures we all tendentiously teach in the classroom. Yet students must learn to structure that chaos.

Some examples

Consider a text. Most of what follows applies to limited corpora. In fact, it seems all the more reasonable to limit the scope of lexical analysis to texts or conversations chosen for some specific purpose. We must stress the importance of context and the context may well be the text itself (the expression "cotext" applies here) or a given conversation whose intentional circumstances are fully explored. First, we shall seek to extract those vocables which occur the most frequently in a text and which allow us to predict something of the overall information context of the text. The larger the sample or corpus, the greater the risk that the most frequent vocables be those with the lowest informative value precisely because they occur in such diverse contexts. Recall Lewis's law: the greater the number of contexts in which a vocable is found, the greater the need for a context to understand that vocable. *Figure 1* (below) displays a typical exercise based on the extraction of a low-information value vocable from a text. We have made a concordance of "how". By ***concordance*** is meant the simultaneous listing of all occurrences of a given vocable or series of vocables in a specified corpus.

Figure 1

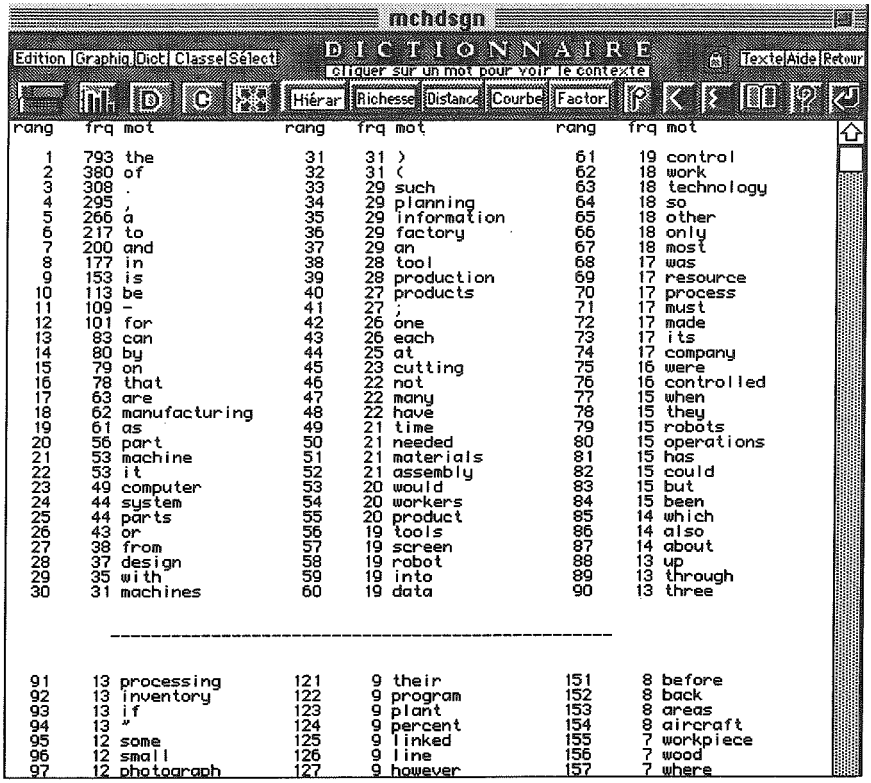
Consider the use of "how" in the following sentences. "How" is often given as the English equivalent for the French "comment"; but what does this vocable mean in a given context? Are "how" and "comment" merely used in questions? In what other contexts do they occur?

P2	3a	raises the question of **how** any society can function
P2	3c	a limited number of themes : **how** the mechanization of work has been
P3	5b	of machines determines **how** men think , act and dream . ¶ In
P3	5c	with ever greater subtlety **how** demand , supply and price interact
P4	8h	had not left their mark on **how** workers behave both on the job and
P9	18b	them to decide what work to do , how to do it and even when to do it .
P9	18d	greater autonomy in their work . How these demands will be reconciled

"*How*", thus, replaces the relative expression "*the way in which*" in the above contexts.

Figure 2, a window from the application Hypertext®, lists the most frequently occurring vocables in a given text by order of frequency. What is the subject of the text and by what chain of thought do you reach your conclusions? The reader can make an educated guess on the basis of the primarily nominal clues provided. The ***lexical base*** of a text is composed of the most frequently occurring informative vocables. Obviously, frequency must be interpreted as being relative to the size of the text. The text under study contains approximately 8924 separate vocable occurrences (certain of these are punctuation marks) with only 1754 vocable forms of which some 900 occur only once (the latter are called, in linguistic jargon, the text's hapax).

Figure 2



rang	frq	mot	rang	frq	mot	rang	frq	mot
1	793	the	31	31	)	61	19	control
2	380	of	32	31	(	62	18	work
3	308	.	33	29	such	63	18	technology
4	295	,	34	29	planning	64	18	so
5	266	a	35	29	information	65	18	other
6	217	to	36	29	factory	66	18	only
7	200	and	37	29	an	67	18	most
8	177	in	38	28	tool	68	17	was
9	153	is	39	28	production	69	17	resource
10	113	be	40	27	products	70	17	process
11	109	-	41	27	;	71	17	must
12	101	for	42	26	one	72	17	made
13	83	can	43	26	each	73	17	its
14	80	by	44	25	at	74	17	company
15	79	on	45	23	cutting	75	16	were
16	78	that	46	22	not	76	16	controlled
17	63	are	47	22	many	77	15	when
18	62	manufacturing	48	22	have	78	15	they
19	61	as	49	21	time	79	15	robots
20	56	part	50	21	needed	80	15	operations
21	53	machine	51	21	materials	81	15	has
22	53	it	52	21	assembly	82	15	could
23	49	computer	53	20	would	83	15	but
24	44	system	54	20	workers	84	15	been
25	44	parts	55	20	product	85	14	which
26	43	or	56	19	tools	86	14	also
27	38	from	57	19	screen	87	14	about
28	37	design	58	19	robot	88	13	up
29	35	with	59	19	into	89	13	through
30	31	machines	60	19	data	90	13	three
91	13	processing	121	9	their	151	8	before
92	13	inventory	122	9	program	152	8	back
93	13	if	123	9	plant	153	8	areas
94	13	"	124	9	percent	154	8	aircraft
95	12	some	125	9	linked	155	7	workpiece
96	12	small	126	9	line	156	7	wood
97	12	photograph	127	9	however	157	7	where

Lexical analysis provides a rapid insight into not so much the precise argumentation used in a text, but a skeletal representation of its language. The essential lies therein. The analysis helps both the student and the teacher. In a classroom situation, whereas the initial study of a text or discipline will embrace the nominal structures of the thematic language, the teacher's fundamental ambition must be to find a suitable number of verbs associated with these nominal structures. Let's say that the nominal structures form the abstract description of the discipline and the verbs put these abstractions into specific situations. The verbs, in a sense, rely on the intentional context of the speakers and listeners. When designing a course syllabus most of the language-based exercise material will be found within the text corpora furnished by the students or clients.

Figure 3 provides a good example of text-specific collocation: What nominal structures co-occur with "assess"? What compounds are formed? "Assessing" and "risk" co-occur as do "assessment" and "information". The trainees will be called upon to note the compound structures such as "supervisory assessment" as well as "assessing the impact of..." In this example, readers should notice that the concordance is based on a form "assess" whose morphology varies. The verb, noun and participle are all used. Can the student and teacher apply their skills to draw general conclusions concerning the uses of the different forms?

Figure 3

P1	1a	a framework for supervisors to **assess** information about the
P1	2a	, the framework provides for the **assessment** of supervisory information
P1	3a	(e.g. for the purpose of **assessing** market risks and amines) .
P1	3c	derivatives should therefore be **assessed** with sufficient frequency to
P1	4a	have identified as important for **assessing** the risks arising from firms'
P1	4b	conceptual methods for **assessing** the risk exposures related to
P2	5a	the framework discusses ways to **assess** the concentration of credit risk
P2	5d	covers row approaches for **assessing** market risks . ¶One is to
P2	5d	allow independent supervisory **assessment** of an institution' s market
P2	6a	of information important for **assessing** the impact of derivatives on
P2	6b	discusses the importance of **assessing** information on both
P2	6d	for supervisors to begin **assessing** the nature and scope of an
P2	8c	consultations have led to an **assessment** of the information necessary
P3	9b	be accessible to supervisors to **assess** the risks of derivatives and
P3	10g	conceptual methods for **assessing** the risk exposures related to
P3	10j	that supervisors can use in **assessing** the impact of derivatives on
P3	11g	not specified , allowing for the **assessment** of information obtained
P3	11g	information may be obtained and **assessed** through on - site examination
P3	12c	example , that for purposes of **assessing** an institution' s market risk
P3	12e	aggregation , consolidation and **assessment** of information across a
P3	12f	with regulated firms how best to **assess** information that provides a
P3	12g	¶ Data on derivatives should be **assessed** with sufficient frequency and

P3	12l	, where appropriate , for **assessing** the impact of derivatives on
P4	13a	with the aim of achieving the **assessment** of understandable and
P4	13f	needed for supervisory **assessment** . ¶Each of the four broad
P4	13g	risks , supervisors should **assess** qualitative information about
P5	17a	to an effective supervisory **assessment** of the credit risk inherent
P6	22e	may also be necessary for **assessing** liquidity risk . ¶In addition
P6	22e	intervals would be helpful in **assessing** funding risk . ¶37.
P6	23e	positions . Supervisors should **assess** information on market risk by

Here, in *figure 4*, we return to the text whose lexical frequency hierarchy was given in figure 1. Note the compounds in which machine occurs.

Figure 4

P1	1d	by the industrial robot , a **machine** designed to replace the
P1	3d	, building materials and **machine** tools . ¶It is in these
P2	4a	shall frequently refer to is the **machine** shop . There metal parts are
P2	4a	on a lathe . ¶The same set of **machine** tools can serve to make a great
P2	4b	the efficient organisation of **machine** - shop operations difficult .
P2	4c	or numerically controlling , the **machine** tools themselves were
P3	7a	to determine how a cutting **machine** , such as a lathe , must be
P3	7a	the capacity of the cutting **machine** , the material from which the
P3	7b	the machinist set up his **machine** according to drawings supplied
P3	7b	; when numerically controlled **machine** tools were introduced , the
P3	8a	a part and in programming a **machine** tool to make it illustrates
P3	8c	for processing on a particular **machine** were kept only by the
P3	8e	of materials , the control of **machine** tools and other single -
P5	14c	of labor , materials , **machine** time and other resource
P6	18b	card can be imprinted with a **machine** - readable code such as the
P7	20c	earliest numerically controlled **machine** tools were programmed by means
P7	20c	tape . Each instruction to the **machine** was represented by a pattern of

P7	20d	digital computer mounted on the **machine** . ¶A modern computer -
P7	20e	the computer control enables the **machine** to cut metal automatically to
P7	20e	, the program can prevent the **machine** from cutting too deep into the
P7	20f	in some cases it can signal the **machine** operator to change or sharpen
P7	21a	- numerically controlled **machine** tools are linked by a hierarchy
P7	21a	direct - numerically controlled **machine** tools . Typically each machine
P7	21a	machine tools . Typically each **machine** is controlled by a
P7	21b	mainframe computer to any of the **machine** tools in the network . ¶In
P7	21c	about the status of each **machine** , the volume of its production
P7	21c	controllers . As many as 100 **machine** tools can be connected in such
P7	21d	must still be moved from one **machine** to another by manual methods .
P7	21d	direct - numerically controlled **machine** tools are further linked by a
P7	21f	, the fraction of each shift a **machine** spends cutting metal can be as
P7	21g	- numerically controlled **machine** tool standing alone the cutting
P8	22a	products . A worker operating a **machine** tool manually can note a defect

Here in *figure 5* we have an exercise using a more grammatical vocable "one". Find the fixed expressions using "one". The idea of grammaticalized lexis gains currency through the use of such methods: it is not by merely learning the formal grammar of the vocable "one", that a learner may acquire the vocable's bewildering uses: disembodied analysis daunts more than it describes.

Figure 5

How do we use the vocable "one"? Does any expression come to mind? Consider the following concordance of "one". What can be said about the lexical unit in which it occurs? Are there sentence frames involved or polywords?

P1	1c	turns out that manufacturing is **one** of the most difficult sectors of
P1	1d	to replace the production worker **one** for one . ¶Actually the direct work
P1	1d	the production worker one for one . ¶Actually the direct work of
P2	5a	as it passes from **one** person to another . ¶The time
P2	5e	and the routing of a part from **one** process to another on the factory

P3	8e	. ¶By linking the six areas one can achieve what Joseph Harrington
P4	10b	- view drawing . ¶In return **one** of the most important benefits to
P4	10c	- - ray - tube terminal . In one method , called finite - element
P4	11b	custom valves from six months to one month . A manufacturer of molds for
P5	15e	, for moving the part from **one** operation to the next
P6	P7	**One** of the most important benefits of a
P7	21d	must still be moved from **one** machine to another by manual
P8	22d	by hand , with each worker doing **one** small step of the job and passing
P8	24a	with other machines . ¶**One** of the most important applications
P9	25d	¶Computers can then be linked to **one** another and to the central data
P9	27b	workers on the first shift , **one** worker on the second shift and
P9	27b	worker on the second shift and **one** on the third . ¶Such small
P0	28a	technology , why would **one** expect the technology ever to be
P0	29d	force on a collar , the axle and **one** of the collars are enlarged (c)
P0	31c	bulkheads can be machined at **one** time . Each cutting head of the
P0	32a	a later stage in the assembly . **One** advantage of the computer
P0	32b	that carries workpieces from **one** machine to the next. The
P0	33c	is represented schematically in **one** of the positions it assumes

Figure 6 provides the teacher with the raw material for various exercises — exercises which one might not have otherwise contrived, had we not performed the correspondence for "time(s)". What verbs collocate with "time"? Which multi-vocable blocks appear useful for expressing time relations between the present and past? What compound nouns are formed from "time"? Students can be led to discern the difference between "time" used as a nominal base in compound nouns and when used as a modifier in such compounds. Finally, the learners (and teachers) can compare the plural and singular forms of "time". How often do we teach "time" with an "s" attached? — as a verb? Or in fixed expressions such "as many times as you like"? Does this list exhaust the manifold potential of the vocable "times"?

Figure 6

P1	1g	part to spend 95 percent of the **time** required for its manufacture
P2	4c	themselves were introduced some **time** ago and have been widely adopted
P2	5a	one person to another . ¶The **time** required for a memorandum to
P2	6d	it could be recalled at any **time** . ¶
P4	11b	. ¶Another company - reduced the **time** needed to design custom valves
P4	12b	- process characteristics as the **time** required for the setup of the
P5	14a	manufacturing process at a given **time** . ¶For example , a manufacturing
P5	14c	of labor , materials , machine **time** and other resource elements that
P5	15d	assembly of a product , on the **time** needed for manufacturing each part
P5	15d	part (including not only the **time** spent actually working on the part
P5	15e	working on the part but also the **time** needed for setting up machines ,
P5	15e	at each station) , on the lead **time** needed for purchasing parts from
P6	17c	it must take into account the **time** needed for shipment . It can , be
P6	18a	. ¶For example , a worker's **time** card can be imprinted with a
P6	18b	working hours recorded by the **time** clock are automatically assigned
P7	19b	workers rather than spending his **time** in efforts to relieve shortages of
P7	20e	around several axes at the same **time** ; the computer control enables the
P7	21g	tool standing alone the cutting **time** may be as low as 10 to 30 percent
P0	31c	bulkheads can be machined at one **time** . Each cutting head of the machine
P0	35c	on careful analysis of the lead **time** and manufacturing time for each
P0	35c	the lead time and manufacturing **time** for each part and on an accurate
		———
P3	9d	form it can be changed as many **times** as necessary without the major
P5	13e	can cut down on long waiting **times** and eliminate most of the costs
P0	29f	along the applied force is 100 **times** the distortion in other
P0	33a	Setup **times** are so reduced that such a system

Figure 7 provides an example of a multiple context cloze, easily constructed with concordancing software. Such exercises, often used in the past to draw on students' memories so as to test and reinforce prior material, can be adjusted to actually teach new contexts and new applications for well-known vocables. Multiple context clozes remove the same form from diverse contexts and thus stress the range of application a given vocable or group of vocables (polyword or even an institutionalized utterance) might have. In the following example the missing vocable "order" has an overwhelming frequency in the polyword "in order to" but that frequency does not exclude other types of occurrence such as "a single order for".

Figure 7

P2	5c	concerns had become onerous . **In** ___ to get work done on time the
P2	6c	of a cathode - ray tube **in** ___ to " draw , " or enter geometric
P4	11d	it was originally intended . **In** ___ to design a new part and plan how
P5	15b	automatically generates an ___ for the wood on August 4 , four
P5	15d	uncertainties **in** demand . ¶**In** ___ to introduce manufacturing
P6	16c	. **In** the Kanban system the ___ for a part to be made at one
P6	16d	set **in** motion by a single ___ for finished products at the
P7	19b	relieve shortages of parts , to ___ repairs for machines and to
P0	33d	precise geometry of the part **in** ___ to program the cutting tool , can
P0	35a	is needed must be done **in** ___ to determine when the component
P0	35e	back - scheduled deadlines **in** ___ to conform to the master schedule

Figure 8 furnishes a highly informative example of one of the most common ways to express logical consequence: by means of the three vocable unit (polyword) "as a result". Students will probably notice the presence of the comma after the polyword, providing further proof of the polyword's innate independence. As well, note the cases where "of" links the polyword to a complex noun group which expresses the cause. The examples have been taken from two different texts.

Figure 8

dw 7d	agricultural sector . ¶**As a result** , prices for these products shot
dw 8b	Israel devoid of anything . **As a result** they probably had negative
dw 9f	rather than the usual two . ¶The results have not been long to
dw 11a	The result of these conflicting trends in
dw 14a	this situation and that , **as a result** , the account deficit is
mg 17a	of 1997 and into 1998 . **As a result** , we expect the yield curve to
mg 21d	income during 1996) . ¶**As a result** , we are sceptical regarding the
mg 25c	by the markets . ¶**As a result** , Steve also remains relatively
mg 26d	fully discounted , and , **as a result** , sees German bond yields rising
mg 26e	for some months yet , and , **as a result** , sees official interest rates
mg 31a	in corporate issuance . ¶**As a result** , the flow of funds is likely to
mg 31c	in corporate cash flow . ¶**As a result** , we still expect a balance of
mg 32b	— in both cases , and , **as a result** , expect yields to rise (in the
mg 37c	(especially) the banks . ¶**As a result** , it is difficult to find
mg 39c	a dramatic profit recovery **as a result** of its recent investment in new
mg 40b	of at least 15% , mainly **as a result** of the continued recovery of B&Q
mg 42a	where growth is strongest . **As a result** , we think it has a higher share
mg 48a	unlikely to deteriorate on the result of the US election . It was less

Figure 9, a simple listing of the occurrences of "it" within two successive paragraphs, serves as an example for students to demonstrate that "it" seldom changes reference within a single paragraph. Another interesting exercise consists in displaying all the contexts containing "it" within a text. The various roles fulfilled by the vocable "it" provide food for thought as to the nature of textual cohesion and coherence. The same, of course, might be done for all relative pronouns.

Figure 9

Because the design is simple to alter in electronic form **IT** can be changed as many times as necessary without the major effort of redrawing . The design is accessible to everyone who must work with **IT** as soon as **IT** is electronically filed, so that manufacturing functions such as the planning and scheduling of production can be started earlier.

This method of scheduling is called distribution resource planning, and **IT** must take into account the time needed for shipment. **IT** can be employed to generate shipment dates for various products; **IT**s output can become input for a manufacturing - resource - planning system.

As a further example of the possibilities arising from concordance-based investigations of language, examine the respective contexts in figures *10A & 10B* for "those" and "these". If someone asked you cold out what functional characteristics tell them apart, I fear that the "extra-linguistic", distance-from-speaker-to-reference-object criterion may indeed be adduced. Reality justifies a totally different criterion (a primary criterion, however, which is not without counter examples): in text "these" serves to anaphorically tag noun groups while "those" refers to some set of persons introduced in the text. Note that although "those who" is an intensely powerful collocation; "these who" is not at all a collocation, I would go so far as to affirm its impossibility.

Figures 10A & 10B

P2	3a	A disquieting feature of **these** dynamic internal shifts in the
P3	6b	some of the more important of **these** misperceptions and the inadequate
P4	7g	and take proper account of **these** developments , the performance of
P5	10c	operating at full capacity , **these** delaying tactics have in certain
P6	11g	1940 the proportions employed in **these** kinds of occupation were
P8	15a	**These** last considerations are a bridge
P9	18d	autonomy in their work . How **these** demands will be reconciled with
P9	18g	of workers by inflation makes **these** employees receptive to union

P0	19d	foreign investments , excluding **these** fees , came to $32 . 8 billion ,
P0	21d	at or below the poverty level . ¶**These** trends can be disregarded only by
P1	1f	unemployment destabilized **those** societies , that national policy
P3	6e	added to the personal wealth of **those** in power . Only in retrospect has
P5	9b	authority and legitimacy . ¶Only **those** economists who believe everything
P6	11f	workers (narrowly defined as **those** who provide services primarily to
P6	12a	members of the work force : **those** between 21 and 29 years of age
P6	12b	increase in the proportion of **those** in the 25-to-29 age group who
P0	21c	and the large fraction of **those** families that live at or below
P0	24b	, mining and construction) and **those** in the service sector , defined
P0	24c	is narrowly defined to designate **those** workers who provide services

In conclusion

The full pedagogical value of this kind of lexical analysis remains to be exploited. The method of learning a language through collocational study reproduces, in a more condensed version, our own apprenticeship with written language. Both students and teachers may avail themselves of this new technology to learn the lexical mysteries or regularities which each text harbors. Ultimately, every learner should have access to a library-like data-base which can be analyzed accordingly, that is by performing concordances upon selected parts, when the need arises. Lectiel at the École Normale Supérieur de Saint Cloud[6] is one example of such a library. The *Trésor de la Langue Française* has such a data base (FRANTEXT) which may be consulted from work-stations in various university libraries; unfortunately, individual taxpayers cannot access this data base from home. In the future, students in every discipline will perform corpus analyses on the literature in a specific domain in order to learn the vocabulary thereof. More generally, the concordancing techniques will continue to evolve with the addition of statistical tools to refine search methods. Concordancing and lexical analysis offer a solution to one of the most thorny problems in language learning: the mastery of collocations, networks of associations much too vast for any single dictionary to embrace. Thus, in the near future, alongside the dictionary will sit the work-station ready and able to flesh out all too abstract definitions.

Biodata

Preston PERLUSS majored in mathematics and minored in linguistic philosophy at San Francisco State University. In 1985, he obtained a magistère in teaching French as a foreign language from the University of Paris IV-Sorbonne. Since then, he has been teaching and conducting research in lexicology and discourse analysis while preparing a doctorate at the University of Paris-IV in 18th century Parisian urban history.

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Notes

[1]Support for this view arises from considerations of synonymy; for one example see [Carter and McCarthy: 1988 p. 29]. Michael Lewis pleads strongly for context-based teaching [Lewis:1993 p.80-81]

[2]Bally [Bally: 1951] in his classic treatise draws attention to the conceptual obscurity surrounding the definition of the term "word"; much more recently Tournier [Tournier: 1991] makes a similar observation

[3]"Competence" for those unfamiliar with syntactic grammars is a fundamental term used to describe a speaker's knowledge of the language as a mechanism for creating all possible sentences of that language. See [Brown, Malmkjær and Williams: 1997]

[4]See [Nattinger & DeCarrico: 1992] for a detailed review of facts and theories.

[5]See Jack Goody [Goody 1973] for considerations on how writing influences culture and a culture's idea of itself.

[6]The system of computer-aided learning as presented by Mr Arnaud Pelfrêne during the colloquium on *Usage des Nouvelles Technologies dans l'enseignement des Langues*, Université de Technologie de Compiègne, 13-14 March 1997.