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Editorial note

CALL seems to be flourishing at the moment. Another new journal on CALL called *Computer Assisted Language Learning* edited by Keith Cameron at Exeter University is now available. Each annual subscription includes three issues which appear in March, June and October. Subscriptions are \$A30.00 for individuals and \$A70.00 for institutions and they should be directed to Ablex Publishing Corporation, 355 Chesnut Street, Norwood, New Jersey, 07648-9975, USA. Due to this explosion in CALL journals and newsletters I have included an updated list with subscription addresses at the back of this issue of *On-Call*.

On a recent visit to the U.K. I met June Thompson, the information officer at the Centre for Modern Languages at the University of Hull. This Centre was established on 1 April 1989 and provides a major information service on CALL in the U.K. It is one of nineteen centres of the Computers in Teaching Initiative, funded by the UGC and the Computer Board, that has supported 139 pilot projects in British universities. June is also the editor of *ReCALL*, a new journal on computer assisted language learning. We agreed to the reprinting of articles when required between *ReCALL* and *On-Call*.

Preparations for the ATESOL summer school at the University of Sydney from January 14th-18th 1991 are now well under way. The theme for the conference is 'TESOL in Context' and papers are now being called for. If you would like further information, including a proposal form for papers, please contact Bond University Language Centre on 075 95 2526.

If you have not yet forwarded your subscription for Volume 5 of *On-Call* please do so as soon as possible so that there will be no interruption in supply of the journal.

Mike Levy

Text manipulation: what's wrong with it, anyway?

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Much has been written in favour of text manipulation as a device for promoting language learning through CALL. Yet many in our profession either ignore or disagree with this rationale. This article reviews some of the literature in support of text manipulation and then examines evidence that this rationale is not as widely accepted as those of us who promote this mode of learning would expect.

What is text manipulation?

From an implementation standpoint, text manipulation is possibly the most economical mode of CALL there is. In text manipulation, the computer has been programmed to rearrange or permute text in some way in order to present the learner with a tool or puzzle. The most economical form of text manipulation is that where the program has been designed to work off ASCII text, so that users can accumulate text bases from sources in the environment and then use them interchangeably, without having to key data in for any particular text manipulation program.

A typical example is text reconstruction activities; i.e. computer-generated cloze passages, jumbled sentences, jumbled paragraphs, sequencing tasks, etc. In text reconstruction, the computer is programmed to permute text in some way and the student has to restore it to its original form. This approach is both economical and flexible because all one needs is a battery of programs that will perform the desired permutations, at which point one can simply supply additional texts according to student needs.

Another example of text manipulation is concordancing. Concordancing is also economical in terms of time to implement because it requires only a program plus a text base, where the text base could be the concatenated sum (or subset, or superset) of all the texts used for text reconstruction. Because text reconstruction and concordance programs could easily feed off the same text base, they can be combined. For example Tom Cobb at SQU uses concordances as a form of help in his *Hypercard* cloze programs – when students want to know more about the nature of a clozed out word, they can see a concordance of that word used elsewhere in the text base, but with the word itself masked. Thus the computer is used to manipulate the central text base to provide both puzzle and tool functions.

There is of course a price to pay for the economy and ease of maintenance of a text reconstruction system, and this is that students must always restore text to its original form. Detractors of text reconstruction often consider it unacceptable that alternate correct answers are not allowed; but in order to achieve this, one could no longer use the relatively simple text reconstruction program, but would have to turn to an authoring system and program the computer to anticipate a variety of alternate correct answers, fuzzy misspellings, and so on. Text reconstruction programs 'know' only the word or letter that should go in a particular place, and so can provide feedback to the learner amounting to gradually revelation of the single correct answer. Again, this can be done with no effort on the part of developers beyond the original programming, whereas to work within an authoring system to second guess the learner's every move in designing an 'intelligent' feedback system requires an inordinate investment in time both for original development and subsequent fine tuning. To compound the problem, an elaborately authored package may have a limited shelf-life -- since the feedback is unique to a particular text, it can become obsolete when courses change. A text manipulation system on the other hand can be updated simply by changing texts.

The text manipulation approach is obviously flexible and easily implemented, but is convenience its only benefit? This article addresses this question in two ways: first by presenting a rationale for the pedagogical value of text manipulation, and second by acknowledging the viewpoint of those who do not accept that rationale. This paper concludes that the first view is at least plausible and that the latter, in so far as it has failed to produce a cohesive counter-position, may reflect a lack of awareness of the rationale for text manipulation.

The rationale

There is quite a lot in the literature on the appeal of text manipulation. Generally speaking, supporters of text manipulation are advocates of instructional approaches weighted toward inductivity, authenticity, and learner responsibility for learning.

Whereas recent trends in language learning methodology incorporate these elements, not all in the language learning profession have embraced them, and there are many who look upon such approaches with sceptical interest while continuing to teach in traditional ways. Nor is there much empirical evidence to support such approaches; on the contrary, experimental results are most clear-cut for directed teaching methods where learning can be measured in discrete chunks. Therefore, to accept arguments in

favour of text manipulation, you may have to accept that there is an aspect of learning somehow out of reach of the most reliable experimental techniques, and you have to have experienced or observed these methods at work and decided that as a result of your experience or observations, you agree with most of what follows.

Inductivity

First of all, a rationale for text manipulation would have to stress the benefits of inductive learning. Much has been written on this topic; I've always liked to quote Stevick's (1982:131-2) remark that

"The quality of learning that takes place when we focus our attention only on the items to be learned is different from (and probably inferior to) the quality of learning that is incidental to something else that we are trying to do."

Similarly, McDonough (1986:31) has this to say regarding inductive learning of grammar:

"First, it is unlikely that the students can understand the rule statement until they have tested it against the various examples... Secondly, [giving a rule first] imposes a rule formulation rather than encouraging the student to make one up in his own terms. In cases where the discrimination necessary is relatively simple, an imposed classification is usually less easy to remember and therefore less efficient than one invented for oneself (Mandler and Pearlstone, 1966)."

Phillips (1986) addresses this point with respect to CALL, citing research he had previously done on student acquisition of language when focused on ancillary tasks. The point of all of this is that, to favour text manipulation as a viable pedagogical practice, one must accept the premise that language development follows from students being put in the position of having to figure out rules or patterns from linguistic data.

Authenticity

Secondly, a rationale for text manipulation must take into account the high degree of authenticity possible with this mode of learning. To me, text manipulation has great potential for authenticity because the text base itself can be so easily derived from authentic sources. Johns (1988) develops this issue as the first of three assumptions justifying use of concordancing for

language learning. This first assumption has in turn three aspects; i.e. authenticity:

- (a) of script; that is, the teacher's role moves from that of text preparation to text presentation
- (b) of purpose; that is, "the text should be of value to the learner quite apart from its use in a language-teaching context" (p. 10)
- (c) and of activity; "what is done with the text should be transferable to the situation outside the classroom where the learner is trying to make sense of the language without the help of the teacher or of teaching materials." (p. 10)

The first two of these seem to me to apply equally well to text reconstruction as to concordancing. The last one is debatable in the case of text reconstruction; however, Johns argues that, whereas multiple choice and quiz-like activities have low transferability, text reconstruction is transferable

"in the sense that piecing together coherent text from disconnected ideas or minimal clues lies very close to the heart of language learning and language use." (p. 11)

Learner responsibility for learning

A third position taken by advocates of text manipulation is that there is value in learners taking responsibility for their own learning. Continuing with Johns' assumptions justifying use of concordancing for language learning, the second and third deal with this shift of responsibility from teacher to student.

The second assumption is that

"The effectiveness of the teacher is potentially greatest when he or she is most at risk." (p. 11)

An interesting corollary to this is that

"it is the teacher who most sedulously avoids risk who is, in fact, in the greatest danger of being supplanted by the new technology." (p. 12)

Teachers take risks when they allow their students to use text manipulation in its puzzle form, because the teacher may not know the one correct answer, and in its tool form, because teachers cannot predict what program output will be. Teachers become facilitators of the process of discovery made by students, but cede

control over that process.

In practice, students and teachers may be uncomfortable with this state of affairs and prefer to remain in their traditional roles; certainly there must be a conscious effort to educate (or at least inform) students and teachers in what is expected of them in the new roles they assume when responsibility shifts. When these roles are little understood, when students and teachers approach text manipulation with reversed assumptions about where responsibility for learning lies, then the result may be unsatisfactory.

Johns' third assumption justifying use of concordancing deals with metaphors for learning. Among the metaphors for consideration are the hypodermic needle (where learning is injected), gymnastics (involving exercises and drills), and the swimming pool (immersion). The metaphor which Johns believes best applies to text manipulation is the research metaphor.

According to Johns, the research metaphor has four consequences for language learning. These are:

"Firstly, it entails a shift in the traditional division of roles between student and teacher, with the student now taking on more responsibility for his or her learning, and the teacher acting as research director and research collaborator rather than transmitter of knowledge. Secondly, it implies a greater degree of awareness of language and how language operates on the part of the learner than would be allowed in behaviourist models of language learning. Thirdly, it is crucial that the insights gained through research activities should not remain at the level of 'knowing about' the language, but should have direct pay-off in terms of use of the language and ability to communicate in it. And fourthly, it requires that the learner have available appropriate research tools. (p. 14)"

In Johns (1989), this research metaphor resurfaces under the name data-driven learning. DDL is an approach which attempts to build learners' competence by giving them access to the facts of linguistic performance. As Johns puts it,

"we simply provide the evidence needed to answer the learner's questions, and rely on the learner's intelligence to find answers." (p. 2)

Although this holds true for other inductive

approaches to language learning, DDL is distinct from these in three important ways (p. 3):

1. "the teacher does not know in advance exactly what rules or patterns the learners will discover."
2. "The second main effect of DDL is on the role of the teacher, who has to learn to become a director and coordinator of student-initiated research"
3. "The third main effect of DDL is a revaluation of the place of grammar in language-learning and language teaching... The DDL approach... makes possible a new style of 'grammatical consciousness-raising' (Rutherford 1987) by placing the learner's own discovery of grammar at the centre of language-learning, and by making it possible for that discovery to be based on evidence from authentic language use."

John Higgins has become associated with yet another metaphor, the magister-pedagogue dichotomy, which is also related to this concept of learner responsibility. Higgins suggests that the pedagogue-qualities of computers (slave-like, unimaginative) can be used to develop the opposite qualities in students, whereas a domineeringly proficient and intelligent magister would assume (and can actually promote) the absence of proficiency and intelligence in students. In Higgins' words (1988:51):

"The mere fact that the machine carries out orders in a slave-like and completely unimaginative way can be a liberating factor when a human being comes to use it. There are times when the machine's lack of intelligence shows us things we might never have noticed for ourselves and awakens intelligence and imagination people who have had little chance to develop them before. This is in contrast to those approaches to language teaching, regrettably common, which assume a teacher who is both proficient in the subject matter and intelligent about deciding how to present it, while also assuming a learner who has no proficiency and no intelligence."

What Higgins is saying here is that learners exhibit intelligence and imagination when given control over their learning (on computers), while the reverse is true when their mode of learning controls them.

The problem

Having made such a compelling case for text manipulation, what then could possibly be the problem? The problem is that those having read this far (who are likely to be predisposed to what is presented here, or else they would have tossed this aside long ago) are not the audience we need to reach. The audience that is so flagrantly missed out is the students and their teachers who have no idea why anyone should be wasting time reading an article on something as banal and irrelevant to them as text manipulation.

Evidence of the non-acceptance of text manipulation is commonly reported. For example, Johns (1988:9) remarks that concordancing:

"tends to divide language teachers into two camps. Some have reacted with enthusiasm, a few going so far as to write and try out their own versions of the program, often with interesting extensions and improvements... Others have been puzzled by it... they have failed to see that it could be of any use to a learner... This division has little to do with language teachers' alleged fear of computer technology, and a great deal to do with underlying assumptions about the nature of language learning and the role of the teacher in that process."

In a separate instance, Higgins (1988:23) describes the reaction of teachers to a demonstration of computer-based cloze by Chris Jones. In this incident, the teachers are reacting to the fact that the cloze program, following the basic premise of all text manipulation programs, allows students to replace blanks with only the word that had originally been in the sentence rather than testing input for suitability. As Higgins describes it:

"I was astonished at the extent to which this shortcoming, if it was one, was resented by the teachers present at the demonstration. The machine was inadequate, they felt, if it could not give authoritative rulings on acceptability, if it appeared to mark a 'right' answer as 'wrong'. Many of them could not bring themselves to accept Jones's counter-argument that the machine's challenge did not involve notions of rightness and wrongness in language. The program was inviting the learner to restore a piece of written text which had been created by a particular writer on a particular occasion.

The learner would win the game by guessing correctly what that writer had written, not by creating an acceptable piece of English with the same meaning. Indeed the effort of guessing often makes students aware of stylistic variation and paraphrases which they might not notice otherwise. None of this carried any weight with some members of the audience, who clearly expected the computer to mirror what they would have done in class, namely give an absolute judgment on each proposed answer."

The problem here, as Higgins would point out, is that the teachers who were giving Jones a hard time were failing to think pedagogically. According to Higgins, much misunderstanding of the appropriate role of computers in language learning arises from magisterial rather than pedagogical thinking.

Further evidence for either misunderstanding or rejection of text manipulation is found in a recent review of a battery of text reconstruction programs (Garrett, 1988). Here, it is apparent that the reviewer either did not know or did not agree with the underlying principles suggested here as a basis for text manipulation. Accordingly, she writes:

"the pedagogical approach is the overall problem with this programming. If the activities presented in *Text Tangles* appeal to a teacher as worthwhile learning tasks, this package may be quite attractive. This reviewer suspects, however, that many teachers will not want their students to spend much time doing this kind of task." (p. 59)

and in her conclusion, Garrett continues:

"Whether or not teachers use *Text Tangles* will probably depend on their assessment of the pedagogical value of its activities ... Letter-by-letter decoding of words, sentences, and paragraph is not a very communicative or authentic activity no matter how many software programs use this technique." (p. 61)

This last remark is diametrically opposed to Johns' opinion in the matter, to mine, and perhaps to yours. However, this much of the above is indisputably true: whether or not teachers use text manipulation packages does depend on their assessment of the pedagogical value of its activities. Unfortunately, it may not be so much whether teachers agree with the

work cited so far in this paper, this being only a small sampling of the literature in favour of text manipulation -- but whether they know about it.

I have yet to encounter a paper presenting a cohesive argument counter to the pedagogical approach inherent in text manipulation; therefore it is unlikely that detractors of text manipulation are rallying around a contrary position in opposition to this approach. Rather, it appears they are simply uninformed.

There is some evidence pointing to persistent ignorance of many in the profession to what CALL is all about. Healey (1989:1), for example, decries

"the ease with which the lab can be divorced from the curriculum and become an island unto itself, with one or two teachers who specialize in computer use and the rest of the staff indifferent to it."

Windeatt (1990:8) alludes to the existence of this 'indifference' (a symptom of ignorance) when he says,

"I rather doubt whether teacher-training courses for CALL are primarily about computers at all. Their principal value may rather be in encouraging teachers to take a fresh look at what they do in the language classroom."

However, the fact that seemingly intelligent people are prepared to commit themselves in print against the 'pedagogical value' of text manipulation can mean only two things: either they are right and supporters of text manipulation are wrong, or the latter are right but the pedagogical value of text manipulation is very, very difficult to intuit.

Carrying this line of reasoning a little further, it could be that there exist people who intuit in different ways from others; perhaps because they find they learn better with deductive, rule-based approaches, or that they prefer learning presented to them in efficiently digestible packets. Perhaps such people have never tried text manipulation, and don't really think they would like to. In other words, it is hard to say if such people would automatically benefit from text manipulation if they tried it, or if they could be trained to benefit from it. (It is often pointed out in the literature on self-access learning that students don't naturally and automatically take responsibility for their own learning; that they must be guided in doing so).

This is precisely the problem with text manipulation; it is quite difficult to convey to casual users the benefits

that can accrue from it. As was pointed out in Stevens (1989), one may have fewer than five minutes to make a case for text manipulation when describing it to the student who has just popped in to see what is on the computers. A more cogent case can be made to teachers, but they in turn must interest students in the topic. If this is difficult for experts to do, then how can we expect teachers, who may doubt or misunderstand the efficacy of text manipulation to promote this genre of CALL with their students?

What is really needed to promote text manipulation is a three-minute spiel that will concisely state the benefits of text manipulation in a way that students and teachers can easily understand and relate to. It occurs to me that had I prepared such a statement rather than subjecting the reader to this full-length article, it might have been a much more efficient use of all our time. Unfortunately, it is much easier to elaborate at length on the many interesting aspects of this topic than to encapsulate the essence in an eloquent and easily accessible brief statement of purpose and benefit.

Conclusion

Predisposition to text manipulation requires acceptance of the notion that language learners can benefit from teaching materials promoting inductivity, authenticity, and learner responsibility for learning. Whereas these ideas underpin current language methodologies, teachers may tend toward traditional ways of instruction, especially when change involves massive retooling and when students seem most comfortable with traditional roles. Particularly where technology is involved, there is much ignorance, misunderstanding, and 'indifference' to putting into practice new approaches to language teaching while acquiring new skills in operating complex hardware and software. Although text manipulation is conveniently implemented and consistent with current language learning pedagogy, its benefits are difficult to intuit; hence the genre is easily misunderstood. Education of teachers and students on their roles and responsibilities in learning, and the relationship of these to CALL, is a desirable solution to this problem.

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