

## CROSS-LEXICAL CONSULTATION: OUT OF THE HORSE'S MOUTH\*

**David Singleton**  
*Trinity College, Dublin*

This paper very briefly explores the benefits of using introspective evidence in transfer research, with particular reference to some of the data collected under the auspices of the Trinity College Dublin (henceforth TCD) Modern Languages Research Project (henceforth MLRP) (cf. Singleton 1990). These data show that introspective evidence can reveal instances of cross-linguistic lexical processing and details about such processing which would not have been detectable from the L2 linguistic product.

### THE TCD MLRP

The TCD MLRP is based in the TCD Centre for Language and Communication Studies, but also has the support of the TCD Departments of French, Germanic Studies, Italian and Spanish. It was inaugurated in 1988, and, after a two-year pilot phase, became fully operative in October 1990. All data collection ended in 1995. However, the consolidation of the data-bank is still in progress, and analysis of the data in question is expected to continue more or less indefinitely.

The general aim of the MLRP has been to investigate the L2 development of our subjects and to explore any correspondences that might be discernible between such development and relevant previous experience. Particular issues focused on include L2 lexical development and processing, cross-linguistic influence, the age factor, links between metalinguistic/metacognitive awareness and strategic style, and motivation.

The subjects involved in the MLRP were drawn from the TCD Departments of French, Germanic Studies, Italian and Spanish. They were all full-time students enrolled on undergraduate degree courses offered by those departments. All students in the French Department had to have learned French previously, whereas the samples from the three other departments also included *ab initio* learners.

From 1990-1991, the entire yearly intake of students in the departments mentioned were asked to supply (via questionnaire) information about their general education and their language learning experience, and the progress of all questionnaire respondents was also tracked by reference to their annual university language examination results. Only relatively small subsamples of subjects, however, were involved in the gathering of actual L2 data and of introspective data which went beyond the generalities of the questionnaire. These were volunteers recruited from amongst the students of French and the students of German, the numerical details of which are set out in Table 1.

**Table 1.** *Numbers of volunteers recruited from amongst students of French and German*

From the 1990-91 intake:	10 students of French, 18 students of German (of whom 9 were <i>ab initio</i> learners);
From the 1991-92 intake:	10 students of French, 16 students of German (of whom 7 were <i>ab initio</i> learners).

The instruments and procedures we used with these smaller subsamples were as follows: C-tests with associated introspection, word-association tests, story-tell and translation tasks with associated introspection, and open-ended interviews on motivation. Because of constraints of space, only C-test data and associated introspective comments will be considered in the present discussion, and, indeed, only a subset of these –specifically, the data elicited during the period 1990-1993 from the volunteer subsample recruited from amongst students of French who entered TCD in 1990-1991.

A few words about the C-test are probably in order at this point. This is a reduced redundancy procedure which sets the task of restoring to wholeness a written text, every second word of which has had its second half deleted (see, e.g., Klein-Braley 1985a; Raatz 1985; Raatz & Klein-Braley 1985). To refine this account a little, the first sentence of the text is in fact left intact to provide a contextualizing lead-in; one-letter words are ignored (except elided forms such as French *l', d', s'*, etc., which are counted as belonging to the words to which they are attached); and where a word has an odd number of letters one more letter is removed than is left standing. For reasons having to do with our desire to maximize semantico-pragmatic processing, in the post-pilot phase of the project we used C-test texts which ran to about 150 words rather than the 60-70-word texts of the “classic” design. Also, to ensure equality of contextualization across texts, we in each case mutilated 50 words counting backwards from the end of the text. This meant that the amount of un mutilated lead-in text was roughly equal in every case –and fairly substantial–, which is, of course, not true if the lead-in is a grammatical unit of arbitrary length (the opening sentence). In addition, we saw to it that every text was titled.

Our initial decision to use the C-test (cf. Little & Singleton 1992; Singleton & Singleton 1996) was heavily influenced by the case made in its favour by Klein-Braley and Raatz (see references above and below). Because of the dense distribution of C-test deletions (as compared with the frequency of deletions in stand-

ard cloze-tests), C-test data are researcher-friendly in terms of their encompassability and codability, and, moreover, such data are likely to include a representative sample of all word classes in the text. Also, the demonstrated fact that native speakers find C-tests relatively easy to complete seems to signify that the errors and difficulties of non-native C-test-takers will be particularly revealing about aspects of L2 development. Finally, the C-test appears to offer particular advantages with reference to lexical research; since subjects taking the C-test are unable to manipulate the ordering of the units constituting the C-test text, the knowledge that is probed by the test would appear to be essentially lexical in nature – knowledge of content words, grammatical words, word-structure, collocability, colligability, grammatical class-adherence of particular items, subcategorization frames, etc. (for a contrary view see Chapelle 1994– answered in Singleton & Singleton 1996).

With regard to the general nature of the C-test *qua* elicitation instrument, one can say that it is experimental to the extent that it requires subjects to assemble in a particular place at a particular time in order to perform an imposed task of a kind that would not form a usual part of their language-using experience. On the other hand, the language units on which subjects have to work in a C-test are not presented *in vacuo*, but, on the contrary, are contextualized in authentic discourse, real text. It is even possible to argue that the C-test task bears some relation to “real life” linguistic tasks, given that there are occasionally circumstances beyond the groves of Academe in which one is presented with the problem of decoding/reconstituting a signal that has been degraded by happenstance (poor acoustics, a malfunctioning photocopier, etc.) (cf. Klein-Braley 1985b). There is a further point to be made about the “naturalness” of the C-test which relates to the question of modularity. *Contra* the view (see, e.g., Fodor 1983) that the processing of gapped written text is so unnatural that it must rely on mechanisms other than those involved in normal linguistic communication, most psycholinguists appear to hold that, in terms of subjects’ exploitation of contextual cues, a degraded written stimulus is more likely than an undegraded written stimulus to provoke processing that resembles the processing of speech (see, e.g., Ellis & Beattie 1986: 225f.; Harris & Coltheart 1986: 170).

The pattern of data elicitation via C-test which we established in 1990-91 was to administer two (modified) C-tests to our MLRP subsamples in December and a further two in May. Each student in each subsample re-encountered the same two pairs of C-tests every year as he/she advanced through his/her degree course, so that it is now possible to trace individual and collective longitudinal progress in respect of the same set of challenges. There was in principle an element of time-pressure involved in the administration of these tests in the sense that subjects are given just 15 minutes to deal with each of the texts in a pair. In fact, however, no subject ever gave the impression of having been stretched by this condition.

The MLRP C-test was supplemented with an introspective instrument of a kind which we used with interesting results in a small study some years ago (see Singleton & Little 1984). The instrument in question, which was administered to the subjects immediately after they had completed the C-tests, listed the mutilated words in the two C-test texts, asking subjects to indicate those that had posed problems and to describe how they had resolved these problems. Subjects retained their C-test scripts during this part of the session, to which a period of up to 30 minutes was allotted. The deployment of

this kind of instrument raises, of course, the question of the relationship between introspection and language processing.

On one view (see, e.g., Fodor 1983) language processing proper takes place within an encapsulated language module totally inaccessible to conscious inspection. However, since (see Singleton 1993) modularists seem dubious about the extent to which lexical processing falls within the language module, and since they appear dubious also about the extent to which L2 processing in general occurs intramodularly, the notion of encapsulation of the language module is hardly a final argument against the use of introspective data in L2 lexical processing research even for convinced modularists. The principal argument in favour of introspective methods is that they have the potential to provide information about process which is not deducible from product. Interestingly, the most frequently cited critique of such methods (Seliger 1983), while taking a highly sceptical line with regard to their usefulness in relation to L2 *learning*, does in fact acknowledge the possibility of their illuminating how learners *use* what they have learned. It is also noteworthy that the best-known collection of material introspection in L2 research (Faerch & Kasper 1987a) is dominated by articles dealing with L2 processing/use rather than L2 learning, and that of these articles most have a strong lexical dimension. This is no accident; researchers seem consistently to find that L2 lexical processing is something of which L2 users are relatively aware and on which they are able to offer quite focused and detailed introspective commentary.

The data elicited by the above-described MLRP instrument are self-evidently retrospective, and do not, therefore, provide “online” glimpses of processes in the way that “think-aloud” data do. However, the method employed to collect them does meet the general reliability criteria for the elicitation of retrospective reports discussed by Ericsson & Simon (1984), being characterized, notably, by immediacy, contextualization, directness, specificity, a lack of leading questions and a lack of forewarning. It is widely accepted that retrospective instruments administered under such conditions are especially suitable for the investigation of “aspects of speech production attended to under task completion” (Faerch & Kasper 1987b: 15). Into this last category must surely fall the seeking out of lexical solutions to C-test “slots” that are immediately afterwards identified as particularly problematic. Some impression of the “track record” of the use of retrospection in L2 research may be gained from, e.g., Cohen (1984), Haastrup (1987, 1991), Poulisse (1990), Poulisse, Bongaerts & Kellerman (1987), Gillette (1987), Zimmermann (1989), Zimmermann & Schneider (1987).

## THE DATA

Turning now to the data, as has already been mentioned, what is under scrutiny here is the data-set resulting from the administration of the four MLRP French C-tests and the associated introspective instruments in 1990-1991, 1991-1992 and 1992-1993 to the group of students of French recruited from the 1990-91 intake. It should be noted that there was some attrition of the sample over the three years; the precise numbers present at the various test administrations are displayed in Table 2.

**Table 2.** *Numbers of subjects involved in the various C-test administrations 1990-1993*

1990-1991:	December: 10	May: 10
1991-1992:	December: 10	May: 8
1992-1993:	December: 5	May: 5

The analysis of these data for present purposes proceeded as follows. First, an attempt was made to identify instances of C-test solutions whose very nature indicated a cross-linguistic contribution to their production. Second, note was taken of all introspections which indicated that cross-consultation between participants' mental lexicon for French and their lexicon for English or some other language had been a feature of their endeavours to find solutions. Third, the results of these two procedures were juxtaposed with a view to investigating the relationship between them.

Instances of lexical cross-consultation that were identifiable merely on the basis of linguistic product were relatively thin on the ground. These had to involve some kind of deviation from French norms, since an entirely correct solution tells one nothing about its processing genesis. Moreover, they had to be deviant in such a way as to render implausible any explanation of their origins which made no reference to a cross-linguistic factor. The numbers of items meeting these criteria were modest, as Table 3 shows. The actual lexical forms involved are given in Table 4. Most of these are forms (marked with an asterisk) which do not exist in French, though may resemble French forms, and which seem to owe at least some of their non-Frenchness to cross-linguistic influence. In two cases (marked + and ++ respectively) the forms in question exist in French but are inapplicable in the context; in both instances similar English forms would be applicable in the context.

**Table 3.** *Numbers of items taken to result (at least in part) from cross-lexical consultation on the basis of the nature of the solutions themselves*

1990-1991	21	(1.1% of total number of possible solutions; 2.4% of errors)
1991-1992	13	(0.7% of total number of possible solutions; 2.5% of errors)
1992-1993	10	(1.0% of total number of possible solutions; 6.8% of errors)

**Table 4.** *Items taken to result (at least in part) from cross-lexical consultation on the basis of the nature of the solutions themselves*

1990-1991	* <i>suffrait</i> (X 2)	(cf. English <i>suffer</i> )
	* <i>suffrit</i>	(cf. English <i>suffer</i> )
	* <i>miste</i>	(cf. English <i>mist</i> )
	* <i>transmits</i>	(cf. English <i>transmit</i> )
	* <i>transmitlé</i>	(cf. English <i>transmit</i> )
	<i>scientistes</i> <sup>+</sup> (X 6)	(cf. English <i>scientist</i> )

	* <i>degrées</i> (X 4)	(cf. English <i>degree</i> )
	* <i>volcanos</i>	(cf. English <i>volcano</i> )
	* <i>tax</i>	(cf. English <i>tax</i> )
	* <i>excludait</i> (X 2)	(cf. English <i>exclude</i> )
	* <i>devotée</i>	(cf. English <i>devotee</i> )
1991-1992	* <i>missal</i>	(cf. English <i>missal</i> )
	<i>scientistes</i> <sup>+</sup> (X 5)	(cf. English <i>scientist</i> )
	* <i>degrées</i>	(cf. English <i>degree</i> )
	* <i>degrees</i>	(cf. English <i>degree</i> )
	* <i>volcanoes</i>	(cf. English <i>volcano</i> )
	* <i>mores</i>	(cf. English <i>mores</i> )
	* <i>inférieures</i>	(cf. English <i>inferior</i> )
	* <i>sense</i>	(cf. English <i>sense</i> )
	* <i>exclude</i>	(cf. English <i>exclude</i> )
1992-1993	* <i>missal</i>	(cf. English <i>missal</i> )
	* <i>suffrait</i>	(cf. English <i>suffer</i> )
	<i>scientistes</i> <sup>+</sup> (X 3)	(cf. English <i>scientist</i> )
	* <i>volcano</i>	(cf. English <i>volcano</i> )
	<i>revenues</i> <sup>++</sup>	(cf. English <i>revenue</i> )
	* <i>excludait</i> (X 3)	(cf. English <i>exclude</i> )

\* Not a French word

<sup>+</sup> In the sense of “scientists” (= French *scientifiques*)

<sup>++</sup> In the sense of “revenues” (= French *revenus*)

Turning now to the introspections, of the totality of C-test slots which elicited some kind of commentary on their problematicity, a fairly substantial minority suggested that cross-lexical consultation constituted an element of the response to the problem. The numbers and percentages involved are given in Table 5. In fact many more of the introspections implied some degree of reference to the mental lexicon for English to the extent that they talked about efforts to understand and/or to exploit the context. However, the approach adopted in the present analysis was to retain in this connection only those introspections which explicitly mentioned translation or reference to a language other than French, and/or which specified particular non-French words to which recourse was in the problem-solving process –whether these were translation-equivalents of the perceived target item or items from the same semantic field. In some cases the introspections concerned were associated with solutions that worked, in others with unacceptable solutions, and in others again with slots that had been left blank.

**Table 5.** Numbers of introspections indicating cross-lexical consultation as an element of the lexical problem solving process

1990-1991	58	(18.5% of total number of introspections)
1991-1992	25	(15.3% of total number of introspections)
1992-1993	18	(23.0% of total number of introspections)

Some examples of the introspections in question follow.

- “Couldn’t think of French verb which would express the appropriate sense of what I felt in English.” (Solution offered: none. Correct solution: *déclaré*)
- “I was trying to think of a word for region ...” (Solution offered *commune*. Correct solution: *commune*.)
- “I had to think of another word associated with drought ...” (Solution offered *mistral*. Correct solution: *mistral*.)
- “I could understand the meaning in English but I didn’t have the necessary vocabulary” (Solution offered: none. Correct solution: *étincelle*.)
- “I considered the word ‘l’ère [*sic*] meaning era ...” (Solution offered: none. Correct solution: *été*.)
- “Not sure of how to spell the word for degrees.” (Solution offered *degrés*. Correct solution: *degrés*)
- “One ‘e’ or two? I think it’s 1 but I’m not at all sure. (Solution offered *degrés*. Correct solution *degrés*.)
- “It must be the word for volcanos –I’ve just guessed it.” (Solution offered *volcanes*. Correct solution *volcans*.)
- “... I’ve the feeling I got mixed up with an Irish word.” (Solution offered: *failles*. Correct solution: *failles*.)
- “... faibles, faines, failles, not entirely sure. The last one sounds Irish!” (Solution offered: *faibles*. Correct solution *failles*.)
- “I didn’t know the correct translation of ‘fault’ in the geological sense.” (Solution offered: *faibles*. Correct solution *failles*.)
- “... I assume it’s ‘member’ or ‘leader’ or ‘participator’ ...” (Solution offered: *chargé*. Correct solution: *chargé*)
- “Thought it meant ‘in charge’ so I put *chargé*.” (Solution offered *chargé*. Correct solution: *chargé*.)
- “... I was thinking of the English word ‘fund’ –I know it corresponds to a word in French.” (Solution offered: *fond*. Correct solution: *fonds*.)
- “I thought it was la force ... it’s la esfuera (f) in Spanish.” (Solution offered: *force*. Correct solution: *fonds*.)
- “I understood what was required in English & I put it in in French.” (Solution offered *revenus*. Correct solution: *revenus*.)
- “Realised English trans. would be ‘revenue’, therefore French same but unsure of accuracy of word ...” (Solution offered *revenus*. Correct solution: *revenus*.)
- “At first I had ‘vacations’ –probably influenced by the American word– too much TV !!” (Solution offered *vacances*. Correct solution *vacances*.)
- “I keep thinking of task, or tant, or even temptation ...” (Solution offered: none. Correct solution: *taux*.)
- “... I’ve heard this phrase in English ...” (Solution offered *avant-garde*. Correct solution *avant-guerre*.)

Such comments suggest that cross-lexical consultation was variously used by the MLRP participants in trying to cope with the lexical problems that the C-tests threw up. In some cases the English (or other non-French) words that were referred to seemed to be utilized as conceptual foci, as points of departure for attempts at finding French glosses or semantic associates (e.g., “I was trying to think of a word for region ...”). In

other cases the actual forms of the non-French items being pondered on appeared to contribute to the hypothesizing about the forms of the French words that were under consideration (e.g., “Realised English trans. would be ‘revenue’, therefore French same but unsure of accuracy of word”). There are also instances where reference to non-French lexis can be seen to have had what looks like a sort of *post hoc* monitoring role (e.g., “I’ve the feeling I got mixed up with an Irish word”). None of this information concerning the diversity of function of cross-lexical consultation would have been available, of course, in the absence of the introspective commentaries.

We come, finally, to the relationship between the two groups of data explored above. What is particularly interesting in this connection is that there is practically no overlap between them. Specifically, in all but three cases, the solutions (or non-responses) associated with introspections indicating cross-lexical consultation do not fall into the category of items in which cross-linguistic influence is detectable from the nature of the product. The exceptions are the following:

- “thought of volcano as in English ...” (Solution offered *volcano*. Correct solution: *volcans*)
- “...can’t think of another word for income ...” (Solution offered *revenues*. Correct solution *revenus*.)
- “I couldn’t think of the infinitive for the French verb ‘to exclude’ ...” (Solution offered: *excludait*. Correct solution: *excluait*.)

In other words, in the vast majority of cases where introspections indicate reference by participants to English, and other languages (Irish and Spanish) in thinking about the French lexical problems that confront them, the cross-linguistic processing in question left no apparent trace in the actual product. Actually, of course, the converse is also true. That is to say, the vast majority of solutions whose nature is such as to point to a cross-linguistic dimension to their production were for their part unaccompanied by introspective comments which mentioned cross-lexical activity –the above three instances again constituting the only exceptions.

## CONCLUDING REMARKS

On the basis of the foregoing it is difficult to disagree with those who claim that introspective evidence is able to provide information about cross-linguistic processing –at least in problem-solving situations– which it would be impossible to infer from the linguistic product alone. On the other hand, it is also possible to conclude that the nature of a linguistic product can very often give clues to underlying processing which –because, perhaps, of an absence of consciousness of problemat�icity on the part of the producer– fails to give rise to introspective commentary.

In the light of these points, and in the light of the vastness of our ignorance, we can perhaps conceptualize a general lesson for L2 research –namely, that we cannot afford to ignore any avenue that holds the possibility of supplying information and insights about L2 processes. Purism in this matter is entirely out of place, whether it be of the variety which rejects “error analysis” as too “product-oriented” or of the variety which rejects introspective evidence as too “soft”. *Tous les moyens –ou presque– sont bons!*



## Notes

- \* This article is a slightly revised version of a paper presented at the Thirtieth TESOL Convention (Chicago, March 26-30, 1996) in the colloquium "Language Transfer: Cognitive and Ethnographic Perspectives."

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