Problems with click detection: Insights from cross-linguistic comparisons

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Abstract. Cross-linguistic comparisons may shed light on the levels of processing involved in the performance of psycholinguistic tasks. For instance, if the same pattern of results appears whether or not subjects understand the experimental materials, it may be concluded that the results do not reflect higher-level linguistic processing. In the present study, English and French listeners performed two tasks – click location and speeded click detection – with both English and French sentences, closely matched for syntactic and phonological structure. Clicks were located more accurately in open- than in closed-class words in both English and French; they were detected more rapidly in open- than in closed-class words in English, but not in French. The two listener groups produced the same pattern of responses, suggesting that higher-level linguistic processing was not involved in the listeners' responses. It is concluded that click detection tasks are primarily sensitive to low-level (e.g. acoustic) effects, and hence are not well suited to the investigation of linguistic processing.

Zusammenfassung. Zwischensprachliche Vergleiche können Licht auf Verarbeitungsebenen werfen, die an der Durchführung psycholinguistischer Aufgaben beteiligt sind. Sollten beispielsweise gleiche Ergebnisfolgen sowohl bei Versuchspersonen erscheinen, die die Versuchsmaterialien verstehen, als auch bei denen, die sie nicht verstehen, darf geschlossen werden, dass diese Resultate keine linguistischen Prozesse höherer Ebene wiederspiegeln. In der vorliegenden Untersuchung haben englisch- bzw. französischsprechende Hörer zwei Aufgaben ausgeführt: Klickortung und Klickwahrnehmung unter Zeitdruck. Versuchsmaterialien waren englische bzw. französische Sätze, die bezüglich syntaktischer sowie phonologischer Struktur eng übereinstimmten. In beiden Sprachen wurden die Klicks genauer in Worten offener als in Worten geschlossener Klasse geortet; zusätzlich wurden sie in den englischen Materialien, aber nicht in den französischen, in Worten offener Klasse schneller als in Worten geschlossener Klasse wahrgenommen. Beide Hörergruppen erzielten in beiden Aufgaben gleichartige Ergebnisse, woraus hervorgeht, dass linguistische Verarbeitungsprozesse auf höherer Ebene nicht an ihren Reaktionen beteiligt waren. Gefolgert wird, dass Klickwahrnehmungsaufgaben in erster Linie Effekte auf niedrigeren Verarbeitungsebenen, z.B. akustische Effekte, aufzeigen und sich folglich zur Untersuchung linguistischer Verarbeitungsprozesse als wenig geeignet erweisen.

Résumé. Les comparaisons interlangues peuvent éclaircir les niveaux de traitement impliqués dans l'exécution des tâches psycholinguistiques. Par exemple, si l'on observe le même type de réponses, que les sujets comprennent le matériel expérimental ou non, on peut en conclure que ces résultats ne reflètent point des processus linguistiques de haut-niveau. Dans cette expérience des auditeurs français et anglais ont accompli deux tâches – localisation de clics et détection de clics accélérée – en phrases françaises, et en phrases anglaises. Ces phrases étaient bien appareillées au niveau de leur structure syntaxique et phonologique. Les clics étaient localisés avec plus de précision dans les mots à contenu que dans les mots fonction en anglais, mais non en français. Les deux groupes d'auditeurs ont manifesté ces mêmes résultats; ce qui semble indiquer que les processus linguistiques de haut-niveau ne jouaient aucun rôle dans la performance des auditeurs. En conclusion on peut dire que la détection de clics est une tâche qui est sensible principalement aux effets de bas-niveau, par exemple des effets acoustiques, et donc ne se prête guère à l'étude des processus linguistiques.

1. Introduction

Psycholinguists study the *human* language processing system. Human beings are capable of acquiring any language to which they are exposed as children; the language processing system is not biased towards the processing of any one language rather than another. The psycholinguist seeks to understand the general linguistic abilities involved in language acquisition; production and comprehension – abilities available to all language users rather than specific to a particular individual, social group, geographic area or language community. For this reason, it is desirable that conclusions drawn from psycholinguistic experiments be free of confounding factors specific to one language or linguistic community.

A definitive test of the universality of psycholinguistic arguments can be provided by cross-linguistic comparisons. Cutler (1985) discusses several ways in which cross-linguistic comparisons can be exploited to test psycholinguistic hypotheses; the one which will be relevant here is their function as an essential control condition. For instance, it can happen that an effect observed in a psycholinguistic experiment may be explained either in terms of low-level auditory factors, or in terms of higher-level linguistic processing; both explanations fit equally well to the original study. A decision can be made between the competing explanations if a follow-up experiment is conducted, in which the same materials are presented to subjects who do not speak the language. Such subjects would presumably have the same auditory system as the subjects in the original experiment, but would be unable to process the speech linguistically; in other words, they should be equally susceptible to auditory effects but impervious to linguistic effects.

This kind of cross-linguistic comparison has been carried out by, for example, Cutler et al. (1987), who found a reaction time difference between words and nonwords with French materials presented to French listeners; the difference disappeared when the same materials were presented to non-French-speaking subjects. This result permitted the authors to argue that the originally observed effect was truly due to stimulus lexicality, and not to any low-level difference be-

tween the word and nonword sets. Similarly, Otake et al. (1993) observed a pattern of results in a target detection task in Japanese which they interpreted as evidence of sensitivity to mora structure on the part of their Japanese subjects. An alternative explanation in terms of low-level factors was again discounted by the failure of the pattern of results to replicate with non-Japanese-speaking subjects. Thus in both these studies the failure of an effect to reappear in subjects who did not speak the language of the stimulus materials confirmed an explanation invoking linguistic processing.

The tasks used in the present experiments involve detection of an extraneous signal – a click – coincident with a spoken sentence. Subjects can be asked (a) to locate the click, i.e. to judge exactly where in the sentence it occurred, given a written transcript of the speech, or (b) to produce a speeded response signalling detection. Click detection tasks of both kinds were used quite widely in psycholinguistics in the 1960s and 1970s, e.g. (Abrams and Bever, 1969; Fodor and Bever, 1965; Holmes and Forster, 1970, 1972; Reber and Anderson, 1970; Seitz and Weber, 1974). Cutler and Norris (1979) summarised the results of such experiments and observed that in comparison with tasks involving detection of some sentence-internal unit (e.g. a phoneme, syllable or word), detection of extraneous signals tended to produce a different pattern of effects of variables such as word frequency, position in the sentence, and prosodic structure. They urged caution in the interpretation of click experiments: "Before monitoring for nonlinguistic targets can be considered a useful measure, more information is required about exactly what processing operations it reflects and in what manner it reflects them" (Cutler and Norris, 1979, p. 129).

Click detection studies fell out of favour for some years; however, they are now being revived in a number of laboratories. Recent publications have reported click detection during visual word recognition (Kellas et al., 1988) and during music recognition (Berent and Perfetti, 1993); we are further aware of current research projects using click detection with auditory sentence or word processing in laboratories in the USA, France, Italy and the UK (including our own laboratories;

see, e.g., (Akeroyd, 1992)). It seemed timely, therefore, to seek the further information on the task for which Cutler and Norris (1979) called.

2. Method

2.1. Materials

The materials consisted of ten English and ten French sentences; these are listed in full in Appendix A. These sentences had previously been used in a cross-linguistic investigation of perceptual isochrony, and a complete description of their construction may be found in the published report of the earlier study (Scott et al., 1985). Subject to the constraints of the respective languages, each pair of sentences was closely matched on syntactic, semantic and phonological structure (e.g. *The play will please both Peter and Paul; La pièce va plaire à Pierre et à Paul; The brisket is better at the butchers in Bognor; Les brioches sont bonnes dans la brasserie à Boulogne*). For purposes of the preceding study, each sentence contained four occurrences of the same stop consonant in syllable-initial position. Because of the constraints imposed by this factor and by the matching, the sentences did not sound particularly colloquial or predictable in either language.

The sentences were recorded by female native speakers of British English and of French. Each sentence was digitised and copied. A click was placed in each digitised version. The click was constructed by setting to a constant amplitude seven samples of a 44.1 kHz digitised version of the sentence, which were then low-pass filtered at 10 kHz on playback. Clicks were aligned with the centre of a vowel. Because these materials had originally been constructed for another purpose, i.e. the isochrony study, it was not possible to manipulate the variables of interest to the present study in every pair of sentences in the same way. The analyses reported here concern a subset of seven cross-language sentence pairs for which the following description holds true. In one copy of each sentence the click was placed in an open-class word, either a noun or a verb (in the above examples: "please", "plaire", "Bognor"

and "Boulogne", respectively; in the latter two the click occurred in the first syllable). In the other copy of each sentence the click occurred on a closed-class word; an article, conjunction, possessive pronoun or preposition (in the above examples: "and", "à", "the" and "la", respectively). The number of syllables was matched across each sentence pair, and clicks occurred in the same syllable position in each member of a pair (thus, for instance, the closed-class click in "La pièce va plaire à Pierre et à Paul" occurred in the *second* occurrence of "à", which, like "and" in the matching English sentence, was the penultimate syllable in the sentence).

Two tapes were constructed, one in English and one in French. Each tape contained three occurrences of each version of each of the ten sentences for that language, i.e. a total of 60 trials. In addition, three practice trials occurred at the beginning of each tape. The order of the sentences on each tape was randomised, subject only to the constraint that any one sentence did not occur twice within any four trials. On the tapes the sentences occurred on one channel and the clicks on the other. There was a four-second gap between trials.

2.2. Procedure

Two types of task were used: judgement of where in the sentence the click occurred, and speeded response signalling detection of the click. In the former case we measured listeners' accuracy in locating the click, and in the latter their reaction time to detect it.

In the location task, subjects listened to the English and French tapes and marked the location of the click on a typed transcript. The sentences on the transcript were in normal orthography. The subjects were instructed not to look at the sentence until after they had heard it, and then to mark the location of the click with a line through the sentence. They were specifically instructed that the line could be drawn through a letter if they thought the click had occurred coincident with a particular sound, or between letters or words.

In the reaction time task subjects listened to the same sentences but with no transcript. They

were instructed to respond as fast as possible by pressing a response key once they had detected a click. The keypress response was made with the preferred hand. Timing and data collection were controlled by computer.

The sentences were presented over headphones with the speech to the dominant side (i.e. the right ear for right-handers) and the click to the non-dominant side. Each subject performed only one type of task, but heard both tapes, i.e. responded to sentences in both the native and the non-native language. All subjects heard the tape in their native language first and the non-native tape second. Subjects in both tasks were tested individually or in groups of up to four. Testing of the English subjects took place at the University of Sussex, testing of the French subjects at the Applied Psychology Unit in Cambridge. At both locations the testing was conducted in a sound-dampened room.

2.3. Subjects

The English listeners were undergraduates at the University of Sussex. Twelve subjects took part in the location task and 16 in the reaction time task. The French listeners were advanced secondary school students newly arrived at Cambridge language schools. Fourteen took part in the location task and 12 in the reaction time task. No listeners were highly proficient in the non-native language. All subjects were paid a small honorarium for taking part in the study.

3. Results

3.1. Location task

The subjects' responses were classified according to whether they were (a) accurately located in the vowel, (b) in the same syllable, (c) at the margin of the correct syllable, (d) one syllable away from the correct location, or (e) more than one syllable away. For simplicity, responses classified as (a) and (b) were pooled into a single category of "accurate" responses, which could then be compared with the category "inaccurate", comprising the pooled responses classified as (d) and (e).

Table 1 presents the proportion of accurate responses, located in the correct syllable (i.e. (a) and (b) responses) versus inaccurate responses, at least one syllable away (i.e. (d) and (e) responses) for English versus French listeners and for English versus French stimulus materials. Because of the omission of (c) responses, the proportions do not sum to unity. It can be seen that click location was far more accurate in open-class than in closed-class words, and that this pattern held true for all combinations of listener language and stimulus language. Chi-squared tests showed that the word class effect was statistically reliable at the 0.001 level for each combination of listener language and stimulus language (English listeners: $\chi^2[1] = 155.3$ for English sentences, $\chi^2[1] = 215.1$ for French sentences; French listeners: $\chi^2[1] = 115.1$ for English sentences, $\chi^2[1] = 88.7$ for French sentences).

Table 1
Proportion of accurate versus inaccurate click location judgements as a function of open versus closed word class, separately for English and French listeners and for English and French sentences

| | English listeners | | | | French listeners | | | |
| | English sentences | | French sentences | | English sentences | | French sentences | |
	Accurate	Inaccurate	Accurate	Inaccurate	Accurate	Inaccurate	Accurate	Inaccurate
Open class	0.71	0.12	0.67	0.24	0.59	0.22	0.64	0.19
Closed class	0.21	0.46	0.23	0.60	0.10	0.62	0.06	0.67

Table 2
Proportion of accurate versus inaccurate click location judgements as a function of open versus closed word class, separately for English and French listeners and for English and French sentences; first presentation of each sentence only

| | English listeners | | | | French listeners | | | |
| | English sentences | | French sentences | | English sentences | | French sentences | |
	Accurate	Inaccurate	Accurate	Inaccurate	Accurate	Inaccurate	Accurate	Inaccurate
Open class	0.69	0.12	0.67	0.26	0.61	0.21	0.60	0.20
Closed class	0.18	0.52	0.25	0.51	0.08	0.66	0.02	0.72

Because the closed-class words consist of shorter syllables than the open-class words, it might be argued that the scoring system is biased towards greater accuracy in the case of open-class words. However, it was also the case that for each combination of listener language and stimulus language the open-class responses in category (a) outnumbered the closed-class responses in categories (a) and (b) combined (English listeners: 31% : 21% for English, 25% : 23% for French; French listeners: 31% : 10% for English, 34% : 6% for French).

It will be recalled that each stimulus sentence was presented three times. The proportions in Table 1 are based on sums across all three presentations. In order to check whether the repeated presentations might have obscured an effect present on original presentation, a separate analysis was undertaken of the first presentation of each sentence only. The results are shown in Table 2. This analysis produced exactly the same pattern of statistical significance as the analysis of all trials (for English listeners, $\chi^2[1] = 59.5$ for English sentences, $\chi^2[1] = 78.8$ for French sentences; for French listeners, $\chi^2[1] = 43.9$ for English sentences, $\chi^2[1] = 20.0$ for French sentences; $p < 0.001$ for all values).

3.2. Reaction time task

Table 3 presents the mean reaction time to clicks in open-class and closed-class items as a function of listener language and stimulus language. It can be seen that both groups show faster response times to clicks in open-class words than to clicks in closed-class words in the English sentences, but hardly any difference in response time as a function of word class in the French sentences. An analysis of variance across subjects produced a significant interaction between word class and stimulus language ($F1[1,26] = 6.81$, $p < 0.02$), but this effect did not interact with listener language ($F < 1$). The word class effect was significant for the English sentences for both English listeners ($t[15] = 5.09$, $p < 0.001$) and French listeners ($t[11] = 2.9$, $p < 0.02$), but was not significant for the French sentences either for English listeners ($t[15] = 1.5$, $p > 0.1$) or for French listeners $t[11] < 1$).

Again, a separate analysis was undertaken of the first presentation only. The results are shown in Table 4. The same pattern of statistical significance was again observed as in the analysis of all trials; the word class effect was significant for the

Table 3
Click detection response time (ms) as a function of open versus closed word class, separately for English and French listeners and for English and French sentences

| | English listeners | | French listeners | |
	English sentences	French sentences	English sentences	French sentences
Open class	221	244	244	270
Closed class	244	252	270	268

Table 4
Click detection response time (ms) as a function of open versus closed word class, separately for English and French listeners and for English and French sentences; first presentation of each sentence only

| | English listeners | | French listeners | |
	English sentences	French sentences	English sentences	French sentences
Open class	215	249	250	295
Closed class	237	257	277	305

English sentences for both English listeners ($t[15]$ = 2.45, $p < 0.03$) and French listeners ($t[11]$ = 2.3, $p < 0.05$), but failed to reach significance for the French sentences either for English listeners ($t[15] = 1.85$, $p > 0.08$) or for French listeners $t[11] < 1$).

3.3. Stimulus properties

Finally, we carried out some analyses of the physical properties of the stimulus items, in order to provide a possible underpinning for explanation of the observed pattern of results. In English, at least, the word class variable is strongly correlated with phonological factors (Cutler, 1993): open-class words must contain at least one strong syllable, i.e. a syllable with a full vowel, while closed-class words may be realised as weak syllables containing only a reduced vowel. Such differences are less marked in French (Delattre, 1966). Accordingly, we first measured the duration of each vowel onto which a click had been superimposed. In English, the vowels in open-

class words were on average more than twice as long as the vowels in closed-class words: the mean for vowels in open-class words was 115.24 ms, in closed-class words 58.78 ms. The length difference across items was statistically significant ($t[6] = 5.76$, $p < 0.001$). In French, the difference as a function of word class, although for most sentences it was in the same direction as the English difference, was less marked: 127.08 ms on average for open-class words, 82.19 ms for closed-class words. The length difference in French did not reach statistical significance ($t[6] = 1.94$, $p > 0.1$).

Figures 1 and 2 show the measured vowel durations for the open- and closed-class words in English and in French, respectively. In each figure, the vowels which occurred in open-class words are plotted in order, from longest to shortest; the vowels in closed-class words are plotted in the same order as the open-class words from the corresponding sentences. It can be seen that in English there is virtually no overlap between the open-class and closed-class distributions of
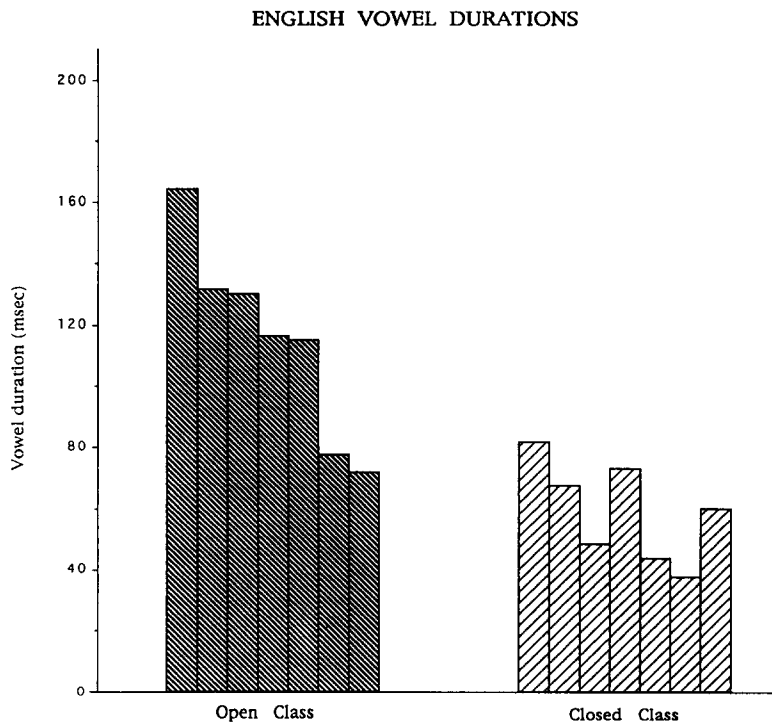
ENGLISH VOWEL DURATIONS

Fig. 1. Measured duration (ms) of vowels which contained clicks in open-class versus closed-class words in the English sentences.
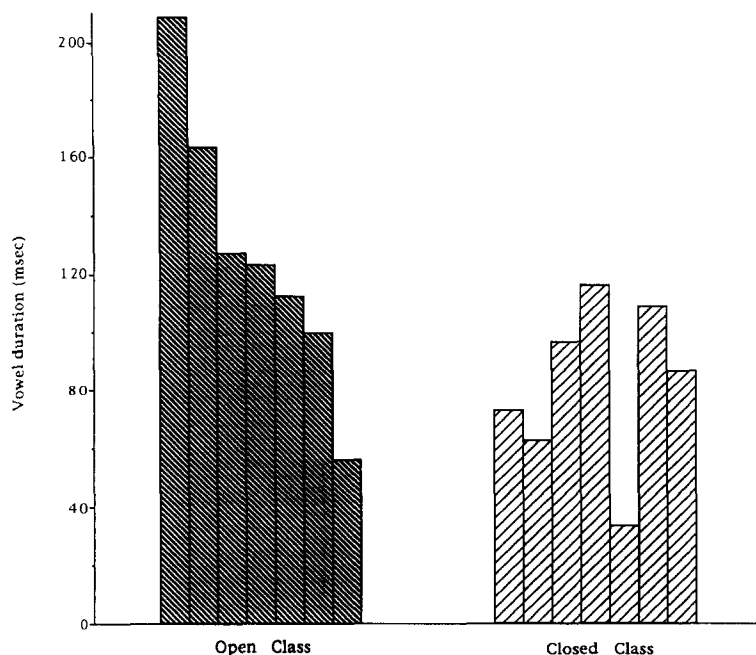
FRENCH VOWEL DURATIONS

Fig. 2. Measured duration (ms) of vowels which contained clicks in open-class versus closed-class words in the French sentences.

vowel duration. Moreover, in every English sentence the vowel in an open-class word is longer than the vowel in a closed-class word; even the shortest open-class vowel (in the first syllable of *Bognor*) is still longer than the corresponding closed-class vowel (in *the*) in the same sentence. In French, on the other hand, there is much greater overlap between the two distributions, with one of the open-class vowels being shorter than nearly all the closed-class vowels; in addition, in two French sentences the closed-class vowel (which in both cases was the vowel of *la*) is actually longer than the open-class vowel.

A correlation analysis was carried out on the difference between the durations of vowels in open- versus closed-class words and the difference in location accuracy scores and response times for clicks in open- versus closed-class words, across items, listener groups and trials. No significant correlation was observed for the location accuracy measures. However, there was a marginally significant correlation between vowel duration and response time ($r[83] = 0.18$, $p < 0.05$

one-tailed): the larger the difference in vowel duration, the larger the difference in RT.

Second, we tallied the number of letters and phonemes in the words in which the clicks had been placed (and, in the case of bisyllabic matrix words, in the syllable containing the click). In both languages there were more letters and more phonemes in the open-class than in the closed-class words, irrespective of whether the count was made across words or across syllables (i.e. including only the click-bearing syllable of the bisyllabic words). All four open- versus closed-class comparisons (across letter counts and phoneme counts, in English and in French) were statistically significant at the 0.02 level at least.

In the same manner as for the vowel duration measurements, correlational analyses were carried out on the difference between the values for open- versus closed-class words and the difference in location accuracy scores and response times for clicks in open- versus closed-class words, across items, listener groups and trials. No significant relationship was observed overall between

the phoneme tally differences and the differences in reaction time. There was, however, a highly significant relationship between letter tally and location performance: the larger the advantage of open-class over closed-class item in number of letters, the larger the corresponding advantage in location accuracy ($r[83] = 0.42$, $p < 0.001$). (Because subjects in the location task both saw the items typed and heard them spoken, it makes sense to test for correlation both of number of letters and number of phonemes with these subjects' performance. In fact, number of letters and number of phonemes per item were themselves highly correlated, and the statistical relationship we found for the former was mirrored with the latter: $r[83] = 0.47$, $p < 0.001$.)

4. Discussion

The most important outcome of this study is that the pattern of results was essentially identical across the two listener groups. That is, click location responses are more accurate in open-class than in closed-class words regardless of whether or how well the listener understands the language. Likewise, speeded click detection is faster in open- than in closed-class words in English, but not in French, and again this holds true regardless of the listener's level of understanding.

The conclusion is unavoidable, therefore, that these response patterns do not reflect higher-level linguistic processing. The word class difference per se is not responsible for the differences in accuracy and response time. Instead, an explanation must be sought in lower-level reflections of the word class distinction.

The results of the various analyses which we carried out on our stimulus materials suggest some possible answers to the question of what the relevant lower-level effects might be. We found that performance in the reaction time task (but not in the location task) was correlated with a measure of duration of the vowel containing the click, while performance in the location task (but not in the reaction time ta.) is correlated with a measure of phonological complexity, as expressed in number of orthographic or phonemic units in the syllable containing the click.

First consider our analyses of vowel duration. In English but not in French, vowels in open-class words are significantly longer than vowels in closed-class words. In English but not in French, clicks in open-class words are detected significantly more rapidly than clicks in closed-class words. This suggests that the response time to detect clicks coincident with vowels is sensitive to the vowels' duration, and we suggest that the reason for this may simply be that a click is effectively more salient against a steady-state portion than against a more rapidly varying portion of a speech signal. The significant correlation which we observed between differences in vowel duration and in response time is consistent with this interpretation.

On the location task, listeners were more accurate locating clicks in open- than in closed-class words in both languages. The location accuracy data, however, showed no relationship with vowel duration. It is noteworthy, though, that in both languages the open-class words were phonologically more complex than the closed-class words. A rough measure of this difference in complexity is provided by the significant differences in the number of letters and phonemes in open- versus closed-class words, in both languages. This difference was positively correlated with corresponding differences in accuracy in performance of the location task. We suggest that performance of this task is strongly affected by the characteristics of the transcript on which responses are recorded: listeners simply prefer to locate clicks in phonologically more complex syllables, and their choices may even in practice be decided by the number of letters in a word or syllable.

Note that in other tasks involving processing of printed text, asymmetries have been observed between performance on open- versus closed-class words. For example, letter cancellation is much more accurate on open-class words than on closed-class words (Corcoran, 1966; Drewnowski and Healy, 1977). In fact, recent elegant cross-linguistic comparisons (Koriat et al., 1991) have suggested that this is a true effect of word class, and not merely a function of differences in word length between open- and closed-class words in the languages in which the original experiments were conducted; however, the word class effect

may nevertheless have as a side effect in those languages what amounts to an attentional difference between words as a function of their length. That is, practiced readers of languages such as English and French may find it difficult to do otherwise than pay greater attention to longer, more complex words than to shorter words, even when the required response does not involve semantic processing of the text, and even, indeed, when they cannot understand the text. In this respect the characteristics of normal reading performance may conspire to interfere with the intended manner in which the click location task is performed.

We conclude, then, that click detection tasks are highly sensitive to low-level factors and that caution should be exercised in drawing conclusions about higher-level processing from such tasks. We should stress that our results certainly do not rule out the possibility of higher-level influences on click detection performance. In a recent study, for instance, Akeroyd (1992) observed an effect of syntactic ambiguity upon click detection RT. Subjects in Akeroyd's study were, however, presented with speech which was time-compressed, to about twice the rate of normal speech; add to this the fact that the sentences in his study were of high syntactic complexity, and it can be seen that the listeners were faced with a severely taxing task. (When the speech was presented at normal rate, click detection RT showed no significant effects of sentence complexity.)

In the present study, listeners were not pushed to the limits of their performance. Under these conditions, we believe that low-level factors were the principal determinants of performance. This conclusion only became obvious, though, as a result of the decision to conduct the experiment cross-linguistically. The pattern of results with one language group alone could easily have supported a misleading conclusion. In the experiments with English listeners, for example, we observed a difference in response time to open-versus closed-class words in English sentences but not in French sentences. Alone, this result would appear indicative of higher-level processing being involved in the response time effect. Had the French listeners shown a processing difference between open- and closed-class words in the

French but not in the English materials, such a conclusion would indeed have been justified. However, the French listeners in fact showed exactly the same pattern as English listeners on both sets of materials. Thus the cross-linguistic comparison has proved invaluable in ruling out what would have been an unwarranted conclusion.

Appendix A

Sentences used in the experiments

The English and French sentences used in this study are listed below. The analyses reported in the present paper are based on the first seven sentences in each set.

English
The play will please both Peter and Paul
The dame doubts that her debts have redoubled
The Turk takes his tiger from the tower
The brisket is better at the butchers in Bognor
The prince surprised his page in the park
The payment pleases the plumbers of Portsmouth
The dentist doubts that her debts have doubled
The beer is always bad in that bar where he boozes
The Tunisian took his turban from the taxi
The princess surprised her public in Poland

French
La pièce va plaire à Pierre et à Paul
La dame se doute que ses dettes redoublent
Le Turc tient son tigre près de la tour
Les brioches sont bonnes dans la brasserie à Boulogne.
Le prince surprend son page dans le parc
La perruche plaira au prince du Portugal
Le dentiste doute que ses dettes aient doublé
La bière est toujours bonne dans ce bar où il boit
Le Tunisien tient son turban dans le tiroir
La princesse surprendra son page en Pologne

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