Originalbeitrag

Performance of unimpaired bilingual speakers of German and French on the Screening BAT

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EN | Abstract

The Screening BAT, currently available in ten languages, is a simple and user-friendly test developed to allow for an efficient assessment of multilingual patients and to be used with patients who are in the acute phase of aphasia. It consists in an important reduction of the sub-tests (17 out of 32) and items (117 out of 472) of the Bilingual Aphasia Test (BAT, Paradis & Libben, 1987). While the different language versions of the BAT have been standardised with 60 healthy subjects, bilingualism was not taken into account in the standardisation. However, previous data obtained for the BAT and the Screening BAT with unimpaired bilingual speakers show that these participants do not reach criterion on all subtests. The aim of the present paper is to provide more comparative data from unimpaired bilingual speakers for the Screening BAT, focussing here on 20 highly educated German-French bilinguals.

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1. Introduction

It has been stressed that assessment of two or more languages in a bilingual aphasic speaker should not be based on different aphasia batteries (Paradis, 2011). These are generally not equivalent with respect to the subtests involved, the number of items, their complexity, the method used for scoring, etc. Nonetheless, with bilingual or multilingual patients, the administration of tests that are strictly equivalent across languages is essential for a precise appreciation of the specific impairment of each language (Kiran & Roberts, 2012).

The Bilingual Aphasia Test (BAT) (Paradis & Libben, 1987) offers a complete linguistically and culturally adapted assessment for more than 65 languages and dialects. The test consists of three parts: part A involves a detailed questionnaire about the patient's linguistic history, part B concerns the assessment of one particular language (e.g., French or Farsi) and part C assesses transposition between language pairs (e.g., French and Malagasy) and language dominance. Part B involves 32 sub-tests totalising 472 test items permitting the assessment of a variety of linguistic structures and skills in all modalities. As for any comprehensive test battery, administration of the complete BAT is long, around one hour and a half per language in unimpaired subjects and at least 2 sessions for each language in aphasic patients. Even the short version of the BAT proposed by Paradis & Libben (1987) (based on 22 sub-tests and 250 items) still takes about 45 minutes in unimpaired subjects. Ivanova & Hallowell (2008) report a mean of 60 to 90 minutes of testing (conducted generally in two sessions) for the short version of the Russian BAT with 83 monolingual Russian aphasic patients, despite the fact that they eliminated some additional sub-tests.

In order to provide a lighter assessment tool for multilingual patients, the Screening BAT (Guilhem et al. 2013) has been developed as a very short version of parts A and B of the BAT. Currently available in eleven languages (Arabic, Catalan, English, French, German, Italian, Korean, Portuguese, Russian, Spanish and Turkish), this test is short enough to be used with patients in the acute phase or for quick screening in multilingual patients. With 17 subtests out of 32 it is still comprehensive enough to allow for the elaboration of a patient's linguistic profile as a basis for the establishment of the clinical report. In order to assure this, the distribution of linguistic skills and the levels of linguistic structures tested proposed by Paradis & Libben (1987: 212-213) have been taken into account. All skills tested by the BAT have been preserved, except the judgment skills assessed in the BAT with tasks such as grammaticality judgment, semantic acceptability and lexical decision. Despite a strong reduction of the number of items from 472 (BAT) to 117 items (Screening BAT) the aim was to maintain items with increasing complexity. Adaptation to the different languages follows the same principles of stimulus selection for each version.

The Screening BAT involves no new materials, all items and subtests are selected from those provided by the BAT. For this reason, no further standardisation has been proposed. Moreover, the BAT is conceived as a criterion-referenced test, i.e. a native speaker of each language should be able to score 100% correct on the different sub-tests. In order to achieve this goal, Paradis and Libben (1987) report that stimuli of each version of the BAT have been tested with 60 native speakers of the language. All participants were non brain-damaged hospitalised patients or retirement home-residents and had been controlled for age (from 50 onwards) and sex. The analysis of the results allowed the authors to replace inadequate stimuli and to achieve criterion validity.

However, bilingualism was not taken into account in this procedure and the use of different BAT versions in a variety of contexts tends to show that unimpaired bilingual speakers do not necessarily score 100% correct on all sub-tests. For instance, Munoz & Marquardt (2008) provide an in-depth analysis of the performance of 22 bilingual speakers of American English and Spanish and find an overall score of 95 %. They identify a number of items where performance was below criterion and observe that the performance on the BAT was dependent on academic experience with Spanish and the influence of English on Spanish. Their conclusion is that interpretation of BAT results in bilingual speakers with aphasia should take into account pre-morbid differences in language skills. Similar results were obtained by Gomez Ruiz (2008) who observed that 76 unimpaired bilingual speakers of Spanish and Catalan reached more than 94% of correct responses on the BAT in both languages. The Screening BAT has previously been tested with 65 unimpaired bilingual speakers of French and 8 other languages which were controlled with respect to age and education level (Guilhem et al, 2013). Results showed that 95% of the participants provided at least 95% correct responses and that scores on the French test (accomplished by all 65 participants) varied depending on age and education level and whether French was the bilingual's L1 or L2.

Given the complexity of language assessment in heterogeneous populations such as bilingual speakers, the aim of this study was to obtain more comparative data from unimpaired bilingual speakers for the Screening BAT, focussing here on German-French bilinguals.

2. Method

2.1. Participants

20 unimpaired bilingual speakers of French and German participated in the study. Participants had a mean age of 49 years with age ranging from 27 to 69. All were highly educated with a mean of 18,25 years of education (ranging from 15 to 22 years).

Participants were controlled for age of acquisition of the languages (AoA) and proficiency. They were living in France at the time of testing. 16 had acquired German before French, 4 had acquired French before German. AoA of the L2 ranged from 3 to 36 years, but most of the participants started learning the L2 in the context of secondary education at 10 to 15 years. 2 were early bilinguals (AoA 3 and 5 years respectively), 3 learned French at their arrival in France through immersion later in life (AoA 29, 32 and 36 years). Mean AoA of the L2 was 15,75 years (SD=9,09) for L1 speakers of German and 11 years (SD=0,82) for L1 speakers of French.

Proficiency in both languages was established through the Self Assessment Grids provided by the Council of Europe within the Common European Framework of Reference for Languages (CEFR, Council of Europe, 2001). Participants who had assessed themselves at levels C1 or C2 (defined by the CEFR as 'proficient speakers') for all modalities — listening, reading, speaking in production and interactions, writing — were included. Exceptionally, 2 participants who qualified themselves B2 (corresponding to the upper level of an 'independent user' following the definition provided by the CEFR) in written skills were accepted since the written skills assessed by the Screening BAT are very basic.

2.2. Procedure

Participants completed the questionnaire of part A and the subtests of part B in French and German in one session of 1 hour approximately. The examiner was the second author of the study, an ongoing speech therapist and late bilingual, fluent in French and German. Part A was administered in either French or German, as chosen by the participant. Part B was administered in the participant's weaker language first, as indicated by the results of the self assessment grids. If both languages were equally strong, order of administration was alternated across participants in order to counterbalance order effects.

3. Results and discussion

The scores for the oral and written parts and total score are given in table 1. Scores are close to ceiling: 113.2 from 115 for the German version and 112.55 from 115 for the French version. This is very close to what has been found by Guilhem et al. (2013) who obtained a mean score of 113.8 in the higher educated participants of the intermediate age group (45-65 ys) corresponding to the majority of the participants in the present study. Since differences between language versions and sample size are small, no statistical analyses were conducted. The slightly lower score for the French Screening BAT may be due to the fact that French was the L2 for most of the participants.

Table 1: Mean score (SD) and percentage correct on the oral and written parts and total score in German and French.

Oral language (90)		Written language (25)		Total (115)	
German	French	German	French	German	French
88.35 (1.95)	88.05 (1.76)	24.85 (0.36)	24.5 (0.68)	113.2 (2.32)	112.55 (2.45)
98.17 %	97.83 %	99.4 %	98 %	98.43 %	97.87 %

Table 2: Mean number of words produced (SD) in the verbal fluency task in German and French.

Verbal Fluency	
German	French
25.9 (6.61)	25 (5.2)

The scores obtained in the semantic verbal fluency tasks (category: animals) are reported in table 2. The mean number of words produced (25.9 for German and 25 for French) are slightly higher than the performance found with the same verbal fluency task by Guilhem et al (2013), even in the higher educated participants of the corresponding age group. This may be due to the very high education level of the participants to the present study. Moreover, the slightly better score in German compared to French suggests that at least a part of the participants with L1 German were still dominant in German.

Table 3: Percentage correct responses and mean scores (SD) to the different sub-tests of the Screening BAT in German and French.

	German % correct (mean score, SD)	French % correct (mean score, SD)
Spontaneous speech	98.93 % 26.65 (0.67)	97.5 % 29.25 (0.91)
Naming	100 % 6 (0)	100 % 6 (0)
Pointing	100 % 5 (0)	100 % 5 (0)
Simple commands	100 % 3 (0)	100 % 3 (0)
Semi-complex commands	100 % 3 (0)	100 % 3 (0)
Complex command	93.75 % 3.75 (0.44)	96.25 % 3.85 (0.37)
Auditory verbal discrimination	90 % 6.3 (0.73)	96.43 % 6.75 (0.55)
Syntactic comprehension	98.6 % 6.9 (0.31)	92.86 % 6.5 (0.89)
Reversible noun phrases	98.3 % 2.95 (0.22)	100 % 3 (0)
Repetition of words	100 % 7 (0)	99.29 % 6.95 (0.22)
Repetition of pseudo-words	97 % 4.85 (0.37)	97 % 4.85 (0.49)
Repetition of sentences	100 % 3 (0)	100 % 3 (0)
Series	100 % 2 (0)	97.5 % 1.95 (0.22)
Semantic opposites	99 % 4.95 (0.22)	99 % 4.95 (0.22)
Reading aloud words	100 % 5 (0)	100 % 5 (0)
Reading aloud sentences	100 % 4 (0)	98.75 % 3.95 (0.22)
Copying	100 % 2 (0)	100 % 2 (0)
Dictation words	100 % 2 (0)	97.5 % 1.95 (0.22)
Dictation sentences	100 % 4 (0)	100 % 4 (0)
Written compre-hension words	96.25 % 3.85 (0.37)	90 % 3.6 (0.5)
Written comprehension sentences	100 % 4 (0)	100 % 4 (0)
Total	98.43 % 113.2 (2.32)	97.87 % 112.55 (2.45)

As in previous studies with the BAT (Gomez Ruiz, 2008; Paradis & Libben, 1987) and the Screening BAT (Guilhem et al., 2013), scores varied between the different sub-tests: some subtests were scored 100% correct by all participants, others proved to be more sensitive to individual variation. Table 3 gives an overview of the percentage of correct responses on each of the subtests. As we can see, 9 subtests are scored 100 % correct in both languages, 7 subtests are below ceiling in both languages, and another 5 are at ceiling in one language and slightly below in the other, generally French.

Again, these results are consistent with what has been found by Guilhem et al (2013) for the French version of the Screening BAT. Their participants scored 100% correct on 5 tasks: naming, pointing, repetition of sentences, series and copying, tasks reaching ceiling also in the present study, at least in one of the languages. In the present study, participants additionally scored 100% correct for simple and semi-complex commands, repetition of sentences, reading aloud words, dictation of sentences and written comprehension of sentences. These slightly better results might be attributable to the high academic experience of the participants.

The most sensitive tasks, where participants scored less than 97% correct, seem to be the complex command, auditory verbal discrimination, syntactic comprehension and written comprehension of words. Again, this is consistent with the results from Guilhem et al (2013), the only difference being that participants in the latter study — which included speakers with low education level — had more difficulties with the written language part of the Screening BAT.

4. Conclusion

The present study provides data from the administration of the Screening BAT in French and German to unimpaired, highly educated German-French bilingual speakers. Contrary to previous studies, proficiency in both languages was controlled through the self assessment grids from the CEFR. While the results are very close to those found by Guilhem et al (2013) for the French version of the Screening BAT, the study highlights the complexity of normative data in bilingual populations and calls for more comparative data from both unimpaired and aphasic bilingual speakers.

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