Introduction

Sequences of two words can involve sandhi phenomena in French; for instance, a final coda consonant can be re-syllabified into the onset of the following word (“enchaînement” e.g. “cher”/SER/ + /ami/ à/SE.Ra.mi/, dear friend) or a latent consonant might be produced at the juncture of the two words in the surface form (“liaison enchaînée” e.g. “grand”/gRā'/y/ + /ami/ à/gRā.ta.mi/). In healthy subjects the production of sequences involving sandhi phenomena incurred an additional processing time compared to control sequences; in addition, re-syllabified consonants had different acoustic properties than word-initial consonants (Bagou, Michel & Laganaro, 2009). Here we investigate whether sequences involving sandhi phenomena elicit additional errors in aphasic patients presenting with impaired phonological and/or phonetic encoding.

Method

We created 96 noun phrases by associating an adjective (W1) and a noun (W2) according to three different boundary conditions. Four adjectives were chosen to create either an “enchaînement” or a “liaison enchaînée” sequence when followed by a V-initial noun. Two V-final adjectives were also associated with C-initial nouns to create the “syllable-aligned” condition involving same V.CV sequences in all boundary conditions (see examples below). Production was elicited with a modified repetition task. An adjective was presented at the beginning of a block, followed by a series of 8 to 10 nouns: subjects had to produce the entire adjective+noun sequence. The participants were thirteen aphasic patients producing phonological and/or phonetic errors in spontaneous speech, reading and repetition and 10 age-matched control subjects.

Results

General accuracy and rates of effective production of the consonant of interest were compared across the three boundary conditions (eg. /t/ in “trente amis”/tRā.ta.mi/ enchaînement, “grand ami”/gRā.ta.mi/ “liaison enchaînée”, “grand tapis”/gRā.ta.pi/ “syllable aligned”). In the group analysis, production accuracy was significantly lower in the “liaison enchaînée” condition in both groups (controls and patients) with a significant interaction between boundary condition and group, indicating that the aphasics patients were particularly impaired in the “liaison” condition (49%) relative to the other boundary conditions (respectively 76% and 73%). In the multiple case analyses, six patients with mild phonological/phonetic impairment (overall performance above 70% correct) produced omission or substitution errors on more than 50% of the “liaison” consonants, whereas the
same consonants were correctly produced in the other two boundary conditions.

[Figure 1 about here]

Conclusion

The encoding of a latent consonant at the juncture of two adjacent words (“liaison enchaînée”) involves an encoding cost for patients with impaired phonological and/or phonetic encoding. Further investigation should seek to determine whether difficulties in encoding “liaison consonants” emerge in specific patterns of impairment at phonological and/or phonetic encoding levels.

References