*Lexical Decision Task.* Five sites were chosen to examine priming for non-words, associative and semantic word pairs based on a survey of the literature. FZ, FCZ, CZ, CPZ, and CZ were used from the midline. OZ was excluded due to equipment problems. After each set was processed as described in the data processing section, differences from normal processing were calculated by subtracting unrelated word pair averages from each stimuli type. These stimuli were then tested with a single sample t-test comparing each processing difference from zero. The following hypotheses were expected:

* Non-word pairs will have significantly positive values because there will be a need to search the lexicon before a non-word decision can be made.
* Semantic word pairs will have significantly negative values because priming will decrease the need to search the mental lexicon.
* Associative word pairs may have significantly different values from unrelated word pairs, but a direction is not predicted. More positive values would indicate priming in the same mental lexicon as semantics, while more negative values would indicate a separation from the theorized semantic network and need to search the mental lexicon.

The predicted effects appear to occur in the crown area in CZ and CPZ. Non-words are significantly more negative than unrelated word pairs, and semantic word pairs had significantly more positive N400 values. Associative word pairs were more positive than unrelated word pairs, which indicated some priming at the neural level, but were only significant at *p*<.10 levels.

Table XX. *Mean, Standard Errors, and t-value differences from zero for the Lexical Decision Task.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *M* | *SE* | *t* | *p* |
| FZ |  |  |  |  |
| Non-words | -93.394 | 77.883 | -1.199 | 0.247 |
| Associative | 97.926 | 63.186 | 1.550 | 0.140 |
| Semantic | 165.288 | 111.869 | 1.478 | 0.158 |
| FCZ |  |  |  |  |
| Non-words | -81.346 | 72.095 | -1.128 | 0.275 |
| Associative | 81.757 | 48.400 | 1.689 | 0.109 |
| Semantic | 157.369 | 93.712 | 1.679 | 0.111 |
| CZ |  |  |  |  |
| Non-words | -171.506 | 68.665 | -2.498 | 0.023 |
| Associative | 117.840 | 67.121 | 1.756 | 0.097 |
| Semantic | 124.051 | 52.756 | 2.351 | 0.031 |
| CPZ |  |  |  |  |
| Non-words | -166.015 | 54.220 | -3.062 | 0.007 |
| Associative | 80.063 | 56.047 | 1.428 | 0.171 |
| Semantic | 113.651 | 51.669 | 2.200 | 0.042 |
| PZ |  |  |  |  |
| Non-words | -74.184 | 60.749 | -1.221 | 0.239 |
| Associative | 39.453 | 76.152 | 0.518 | 0.611 |
| Semantic | 143.395 | 101.600 | 1.411 | 0.176 |

*Note*. DF = 17 for all t-tests.