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What has the Modelling of Word Recognition to do with Brandnames and the Environment?

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Although the role played by familiarity of shape is a much discussed issue in visual word recognition, the specific processes that underlie the familiarity effects are not yet fully understood. Recently, Polk and Farah (1994) suggested that environmental statistics can influence the functional architecture of visual character of recognition, even in adulthood. A related issue is that of the contribution that upper-case and lower-case letters have in reading.

There is little consensus among recent models of word recognition as to the level at which words are encoded in the reading system. The analytic models assume that words are initially formed from component letters. The holistic models argue that words could be formed from word-level codes in addition to letter-level codes.

In order to reconcile the conflicting results obtained by word recognition experiments and what seemed to be a dependence on the type of task being performed, Besner et al. (1984) proposed two distinct types of processing in word recognition: the identification process and the figural familiarity process. The identification process uses only the letter-code and is used when the response uniquely specifies a stimulus, as for example, in naming aloud a string of letters. The figural familiarity process uses word-level code, e.g., in tasks such as lexical decisions. Acronyms (e.g., FBI) were seen as a test case for the familiarity figural form. Faster response times (RTs) were found in a same-different matching task for acronyms when written in upper-case letters (i.e., the familiar way they are normally seen). It has also been shown that no effect could be found for acronyms in tachistoscopic reports (Besner et al., 1984).

We report here experiments with another class of words, namely, brandnames. This class of words is interesting because a set can be chosen so that capitalisation as well as other features such as colour, are part of their identity. Thus, they are rarely seen, if ever, in a different shape than that first presented to the consumers. This feature together with the fact that many of these brandnames are part of our everyday life experience, makes them an ideal set for testing environmental influences. Furthermore, they have the advantage over acronyms of having a more lexicalised pronunciation, allowing for a more direct type of experiment to be carried out involving naming.

Two different types of experiments, a lexical-decision (LDT) and a naming task, were used to investigate the effects of capitalisation on brandnames. The experimental stimuli were 48 familiar brandnames (e.g. SAFEWAY), 48

familiar English words and 96 nonword fillers. The most familiar brandnames were obtained by asking 10 volunteers from Edinburgh University to rank 97 brandnames on an ordinal scale from 1-7 points, according to their familiarity. All materials were controlled for number of letters and number of syllables. In the LDT our aim was to replicate Besner's findings with acronyms. We found that LDT's RTs were significantly faster for brand-names in upper-case letters (their familiar shape) than in lower-case letters (unfamiliar shape). No effect was found for the familiar English words. We performed an analysis of variance with both, participants(F_1) and items(F_2), a 2(letter-case) x 2(word-type) repeated measures ANOVA and found main effects for capitalisation $F_1(1,27) = 7.15, p < .01$, for type $F_1(1,24) = 56.1, p < .001$ and also found an interaction $F_1(1,24) = 8.6, p < .007$. For capitalisation $F_2(1,94) = 7.6, p < .007$, for type $F_2(1,94) = 28.8, p < .001$ and an interaction $F_2(1,94) = 10.9, p < .001$.

The same LDT material, excluding fillers, was used in the naming experiment. No statistically significant capitalisation effects in response time were found for either class of words, in this experiment.

It is interesting to notice that our LDT results are in agreement with Polk and Farah suggestions about the environmental influence on the functional architecture of visual character recognition. However, the same conclusions cannot be reached from the naming experiment where no familiarity effect was found. So far, our results are in keeping with analytic and with some of the hybrid models of word recognition.

To conclude, besides offering us a unique opportunity for studying the environmental impact on visual word recognition, brandnames are a part of our everyday life and as such should be of interest to all those modelling visual word recognition either naturally or artificially.