Cork and talk: The cognitive and perceptual bases of wine expertise

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The research completed in these studies was approved by the Human Ethics Committee at the University of Sydney
A number of previous studies have found that wine experts can more accurately discriminate between and describe wine samples than novices. However, the mechanisms that underlie these disparities remain unclear. This collection of studies is an investigation of whether the expert advantage is based on long-term memory structures, such as found for other obviously more cognitive skills, such as chess and bridge expertise.

Experiments 1, 2 and 3 investigated whether wine experts are better than novices in recall of wine descriptions. It was hypothesised that experts would show more accurate recall than novices, although only when the descriptions were configured in a meaningful manner, that is, consistent with grape varieties commonly grown in Australia. The findings were as expected, with experts showing impaired recall for descriptions that did not match any grape variety (Experiment 2). In addition, expert recall was superior on an incidental task (Experiment 3), when recall was unexpected, suggesting that experts automatically refer to verbal long-term memory structures during a wine-related task. These structures consist of wine-relevant terms, and are organised by their relationship to grape varieties, and more broadly, grape colour.

Experiments 4, 5, 6 and 7 investigated the role of the above-mentioned long-term memory structures in expert descriptive ability. The results supported their involvement, since expert’s ability to identify components was affected by sample configuration (Experiment 6) in a similar way to that found for recall of wine descriptions. Additional evidence comes from the finding that, novices,
when provided with a small set of grape-relevant labels during a descriptive task, performed better than subjects given either no list or a long list of labels relevant to all the different grape varieties (Experiment 4). While experts correctly identified more flavours than novices, they also made more errors (Experiment 6), suggesting that verbal long-term memory structures do not increase the accuracy of the identification of aromas and flavours by experts. Rather, they inform experts as to which labels are likely to be correct for particular styles of wine.

Experiments 8, 9 and 10 investigated both the discrimination performance of novices, intermediates and experts, as well as the role of long-term memory structures in any expert discriminative advantage. Experts (Experiments 8 and 10) and intermediates (Experiment 9) showed greater powers of discrimination than novices. However, results were equivocal in relation to the role of verbal long-term memory structures (Experiment 10), suggesting that other factors, such as perceptual learning and or memory, may be important in the expert discriminative advantage. Overall, results from these studies illustrate that long-term memory structures are essential, not only in domains of expertise that are obviously based on cognitive skills, but also that of descriptive ability with respect to wine. However, unlike in other domains, these structures do not serve to improve the relative accuracy of descriptive performance, at least with regard to aromas and flavours.
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