LITERATURE RECEIVED

COMPUTER-CHESS ARTICLES PUBLISHED ELSEWHERE

Christopher F. Chabris and Sania E. Hamilton (1992). Hemispheric Specialization for Skilled Perceptual Organization by Chessmasters. *Neuropsychologia*, Vol. 30, No. 1, pp. 47-57.

Abstract — The right cerebral hemisphere may be relatively specialized for parsing simple visual stimuli according to default rules, such as the Gestalt laws of perceptual organization, whereas the left cerebral hemisphere may be relatively specialized for overriding such default rules. We extend this model to 'semantically rich domains' by performing a divided-visual-field experiment on 16 chessmasters. Such subjects are able to recall and recognize complex chess positions by *chunking* the basic elements of the stimuli — the chess pieces — into meaningful groupings according to certain rules that are specific to the semantic structure of the chess domain. We show that the right hemisphere is superior to the left at parsing according to the default rules of chess chunking, but that the left hemisphere is superior to the right at grouping pieces together in violation of those rules. There results suggest that the right hemisphere is better able to acquire and apply new sets of default parsing rules for specific contexts. We conclude, consistently with other neuropsychological evidence, that the right hemisphere is critical for chess skill.

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Hermann Kaindl and Anton Scheucher (1992). Reasons for the Effects of Bounded Look-Ahead Search. *IEEE Transactions on Systems, Man, and Cybernetics*, Vol. 22, No. 5, pp. 992-1007.

Abstract — The article tries to shed some light on the issue of why bounded look-ahead search can be beneficial. While this question has received some attention in the context of two-player perfect-information games, it is also considered for single-agent problem solving. Primarily, however, we focus on the reason that makes minimaxing so useful in game-playing practice (especially in computer chess). A class of models based on domain-independent definitions of quiescence is investigated, observing more and more realistic behavior with more and more realistic definitions. As a global result these models show beneficial behavior based on the specific properties of the tree and especially without the need for improvements of the evaluation function toward the end of the game or even error-free evaluations. In contrast, the model investigated for single-agent problem solving needs improved accuracy of the static values with increasing depth for making look-ahead beneficial.