Nonmonotonic function learning as similarity construction

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Abstract: Nonmonotonic functions are difficult to learn from experience with examples, and just what is learned about them is unclear. Generalization from trained instances can go some way toward discriminating models of function learning, but competing theories may use different representational assumptions to produce similar results. The conditions under which learning is observed, and the precise nature of nonmontonic extrapolation can distinguish competing accounts. A regression method from geostatistics, kriging, can help characterize peoples performance and thus clarify the results of the experiment presented here. In addition, the theory underlying kriging, Gaussian processes, can offer an explanation of learning in terms of altered similarity structures; a parallel explanation to that recently suggested for categoriation.