

Embedding knowledge in data

Brian Lees

*Department of Geography & Human Ecology,
Australian National University
e-mail: Brian.Lees@anu.edu.au*

Abstract. For the past decade or so the emphasis in Geocomputation has largely been placed on solving the technical problems of building new analysis engines. In many of these recent developments the analysis engines have belonged to the artificial intelligence field, and have been modified, or adapted, to suit spatial data. Similarly, a huge effort has gone into researching data base strategies for dealing with complex spatial concepts. A comparable effort has not been extended to the basic data itself. The importance of data type and data encoding in simplifying these problems seems to have been largely overlooked. This paper investigates the strategy of embedding knowledge in data by a more considered use of data type selection, and data encoding. Such an approach can greatly reduce the necessity for complex semantic operators, long learning times, and can greatly improve predictive accuracy. At its most extreme, this strategy requires an evaluation and modification to commonly used field methodology. However, the greatly reduced complexity of analysis which flows from this approach more than justifies its adoption.