

# Abstract for the EMPG 1999 Meeting in Mannheim

## **A Method to Compare Knowledge Structures Concerning their Adequacy**

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In practical applications of knowledge space theory we often have different knowledge structures for a knowledge domain  $Q$ . If we query, for example, two experts with the QUERY routine, they will produce in almost all cases different knowledge structures. If we derive knowledge structures from cognitive models of the problem solving behaviour, competing models will produce different knowledge structures. A method to compare these knowledge structures allows us to compare the underlying process models. We present a method which allows us to compare two knowledge structures concerning their ability to describe a set of observed response patterns from the domain. Simulation studies show that our method is highly accurate. The knowledge structure closest to the  $\text{ætrueÆ}$  knowledge structure is in almost all cases preferred by the method. But the results also show that the number of response patterns we need to guarantee reliable results increase strongly with the size of  $Q$ . Thus, the method is restricted in its practical application to small knowledge domains.