ABSTRACT

The present paper explores the perception of structure in implicit learning. Its objective is to provide a model of the learned structure that is usable in future research on the relationship between basic abilities to perceive structure and more complex, analytical competencies. Implicit learning is understood in the context of a broader theory on intuitive and analytical intelligence. This theory interrogates the assumption that the features, by which a stimulus or situation may be analysed and described, are naturally given by the external environment. Instead, it argues that such features are a product of neural processes that make it possible to perceive constancies and to relate experiences from the past to new experiences through learning. The epistemological consequences of this constructivist theory are also applied to the researcher, and methodological implications are taken into account. The stimulus-images used in the empirical studies are produced randomly so that structural regularities are not directly manipulated by the researcher. The model proposed in this paper describes the implicitly learned structure by using the first Principal Components. This model has characteristics that correspond to those of prototypes. Although being concordant with the connectionist line of thought, the proposed model is more illustrative in its simplicity and more interpretable in its results than Artificial Neural Networks. Two paradigms, called Spontaneous Categorization and Prototype Priming, have been developed to test this model. The Prototype Priming experiment confirmed all predictions and reveals itself as being very promising for the future applications.