While many visual recognition tasks can be solved at a glance, there are times when scrutiny is required to make fine discriminations. Nuanced visual judgments often rely on a series of eye movements, as our visual systems cannot resolve subtle featural differences simultaneously across more than a few degrees of visual angle. The eyes thus tend to foveate (direct central regions, with highest resolution) sequentially on several points of interest in a visual scene. Accumulation of evidence from such effortless scanning movements involves coordinated interactions among the so-called "what" brain pathway, specialized for recognition, and the "where" pathway, specialized for processing spatial relations. The talk will describe how attentional shroud representations can act to bridge the two pathways, enabling the coherent visual exploration of surfaces of yet-to-be identified objects. A computational neural model of attentional shrouds will be described and recent simulations of model performance will be presented. The relation of shrouds to concepts such as attentional "sprites" or object files will be explored.

A suggested background reading is the introduction – pages 1 to 13 only – of: