

INTRODUCTION

From its inception, cognitive rehabilitation therapy has been described as a controversial treatment modality. No one would argue the need to develop and implement therapies for working with cognitive deficits after traumatic brain injury. However, there is little evidence that cognitive rehabilitation therapy actually facilitates recovery after head injury any more than the simple passage of time. To this end, the purpose of this issue of *NeuroRehabilitation* is threefold. First, this issue is a collection of articles that focus on memory and attention processes; two areas of cognition that are most commonly impaired after traumatic brain injury. Second, each author presents theories and techniques that are substantiated with experimental data. Third, each author was asked to relate their theories and experimental results to some useful end product, so that practitioners could use the information when treating head-injured clients.

Doug Herrmann's Multimodal Model of Memory serves as a basic framework for all of these articles. His major point is that cognition can be influenced by many different modes of processing. Many of these (for example, social and emotional factors), can be crucial when planning treatment programs for persons with head injury.

Most therapists have witnessed the negative effects of depression on memory and thinking after brain injury. Unfortunately, there has been little systematic research that explores the relationship between emotional mood states and memory in organically impaired populations. Paula Hertel provides a thorough documentation of this literature with "normal" populations, and presents the implications of this literature for therapists who work with head-injured clients.

John McClure presents an iconic memory training procedure that has been shown to improve cognitive functioning in the early stages of the information processing system. The training not only enhances the client's ability to process visual arrays, it has also been shown to transfer to real skills, such as reading. Since the iconic memory store is one of the first stages of processing in Herrmann's model, Dr. McClure's method provides a convenient and efficacious way to work directly with that portion of the information processing system.

Maxwell Twum's research evaluates ways for predicting the outcome of cognitive rehabilitation

therapy. He investigates transfer of training paradigms to assess whether they can predict the way persons with head injury learn and remember. His results indicate that clients' memory skills are quite predictable from these transfer models. He shows how therapists can use these models to predict the outcome of their treatment.

Many therapists may wonder how accurately their clients can self-monitor, or assess their own levels of functioning. Janet Anderson-Parenté explores this topic by comparing clients self-ratings on a multi-function questionnaire, to ratings from relatives and family members. Her results indicate that although clients can accurately assess some of their deficits, relatives provide the more accurate ratings.

Prosthetic memory and cognitive orthotic devices have the potential to obviate most problems with cognition. Elliott Cole and Neil Hersh are at the forefront of research in this field. Dr. Cole's article describes development of computer-based cognitive prostheses for memory-impaired clients. His software is designed to help the brain injury survivor to perform functional activities of daily living. Neil Hersh describes the NeuroPage system. This is a prosthetic memory device that reminds clients of their daily activities. He describes how the NeuroPage system can be used to obviate a variety of different memory problems after brain injury.

My contribution to this issue is an investigation of the effect of monetary incentives on memory. The results of these experiments show that the memory system can function normally after a head injury, so long as there is an appropriate incentive. I will describe how therapists can modify their treatment to increase the clients' willingness, or desire to participate.

The goal of this issue is to bridge the gap between research and practical information. Each article presents a mixture of theory, data, and implications for treatment. It is my hope that the mix will have broad appeal. Theorists will certainly find the experimental results interesting and surprising. Moreover, practitioners will be able to take away something from each article that he or she can use to enhance the quality of their therapy.

Rick Parenté, PhD
Guest Editor