

#### Background:

Difficulties in social skills are generally considered defining characteristics of HFA. Because deficits in socialization interfere with the educational experiences and quality of life of individuals with HFA, and because interventions must be highly individualized to be effective, we are interested in exploring the way technologies may play a role in assisting in the creation of customized social skills instructional modules.

#### Objectives:

Last year at IMFAR we presented Refl-ex, a computer-based system designed to allow the individual with autism to practice social problem solving skills by experiencing social situations and choosing appropriate responses to unexpected events. It is our goal to develop a system that will help non-experts (i.e. authors who have little or no knowledge of instructional strategies) author and share Refl-ex instructional modules. Our approach to aiding authors in creating these modules uses automated critiquing and collaborative problem solving techniques. We call the authoring tool Refl-ex Authoring and Critiquing Tool (REACT).

#### Methods:

In REACT, the author will be presented with a simple user interface that allows them to create the various types of screens needed for Refl-ex. The author will also be presented with suggestions for what could happen next in the scenario, including appropriate instances in which the obstacle may be introduced, what that obstacle is, and possible solutions to populate the decision points. Once the author has inputted text, the critic will provide feedback on the appropriateness of the text. This process will continue until the author is satisfied with the text, thereby enabling the author and the critic to collaborate in the creation of the module.

We have conducted a study in which we use crowd-sourcing strategies to elicit individuals' cognitive scripts for everyday events. Namely going to a restaurant and going to a movie. In addition, we asked participants what could go wrong at each step. The data collected is being analyzed to develop a model, which is a graph showing probabilistically how events follow each other; this model shows all the ways in which a restaurant experience can unfold. The introduction of an obstacle is salient to our pedagogical approach. For this reason our model will also enable REACT to provide the author with ideas for obstacles and possible solutions to insert into the modules. This model will be used to build the knowledge base, provide suggestions, and develop the critiquing rules.

#### Results:

The data collected from the cognitive scripts study has generated interesting results with respect to the regularity of the steps taken in a script describing in everyday task, despite the diversity in the language used. In addition, collecting large amounts of data makes it possible to create the graph of probabilities and provide diverse suggestions for language to describe a particular step.

#### Conclusions:

Crowd-sourcing techniques makes it possible to collect data that can be used to model knowledge in the world. In our study, we elicited participant's scripts for everyday tasks. This data has enabled us to create a model that can be used to aid authors in the creation of the instructional modules. By providing this information, and enabling collaboration between the author and the system, we believe it will be possible to create highly customized social skills instructional modules.