

## XR to Enhance Projective Diagnostic Tests for Therapists: Establish Needs; Envision Opportunities

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**Abstract:** *This white paper discusses the manifest needs for rapid, inexpensive, valid and useful psychiatric diagnostic tests to assist a range of therapists as they treat their patients. There will be a brief survey of the range of therapeutic settings requiring insightful diagnostics and a report on the frequent lack of their use due to time, staffing and financial resources. Some of these settings that have a paucity of professional psychological evaluation personnel are: speech therapy, learning disabilities, child abuse, clinical depression, Oppositional Defiant Disorder (ODD), and Bullying. While extensible to other varieties of diagnostic instruments, the paper focuses on the great potential for the use of XR to enhance a genre of methods known as projective tests, e.g. the Rorschach Ink-blot Test, the Thematic Apperception Test, the Jungian Word Association Test and the Draw-a-Person Test. A characteristic commonly found in each of these tests is the need for an engaging human agent to administer the test in person. A further requirement is that the person present as a non-judgmental and interested agent. The paper presents a review of programs utilizing recorded video clips of live agents, the responses numbering on the order of one-thousand likely responses, and selecting the appropriate clip using advanced Natural Language Processing (NLP) techniques. The authors discuss the needs for new techniques to enhance the system adequately so as to both produce a useful diagnosis and to provide a smooth segue into the therapy of the on-site therapist. The selection and casting of optimal responders to videotape using the performing arts as a model is offered. Speech therapy in an elementary school environment is used as an illustrative example of how this utility could be very important in treating underlying issues in an organizationally and financially constrained setting. The authors adduce situations from their own experience to illuminate both the existing problems and the opportunities for improvement.*

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