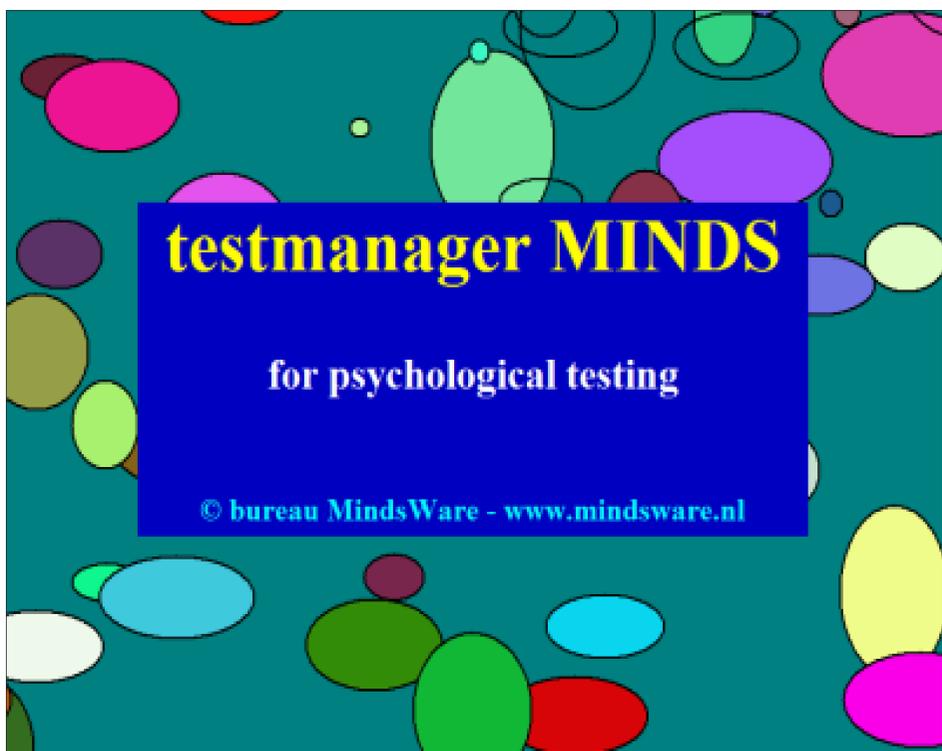


Progress with MINDS, a testmanager for psychological assessment, research and education: applications in the forensic psychiatric domain.

Nico Brand*, Katinka von Borries & Erik Bulten

Utrecht University, bureau MindsWare, PompeStichting, The Netherlands

*) information and contact: nbrand@mindsware.nl - www.mindsware.nl



Background

Testmanager MINDS is a program package running on Windows platforms, to administer automated neuropsychological tests and questionnaires for use in several types of assessment settings, in research and for use in education [1].

New applications

Recent growing interest in Minds from forensic psychiatric settings led to the development of several new applications for work with the forensic population [2]. Interest in the forensic domain focuses on performance tests for the processing of emotional material, tests appealing to frontal lobe functions e.g. impulse control, planning and concept shifting. The suitability and sensitivity of 4 of these tests was investigated, by comparing the performance of two forensic patient groups and a control group, and controlling for age and education.

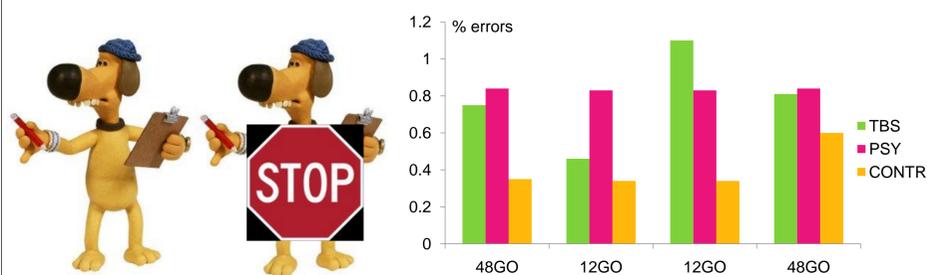
Subjects

- TBS: intramural forensic psychiatric pts (PCL-R* < 26), N=36
- PSY: psychopaths (PCL>=26), N=10
- CONTR: healthy control subjects, N=24.

*) Psychopath Checklist-Revised, cutoff score psychopathy = 26

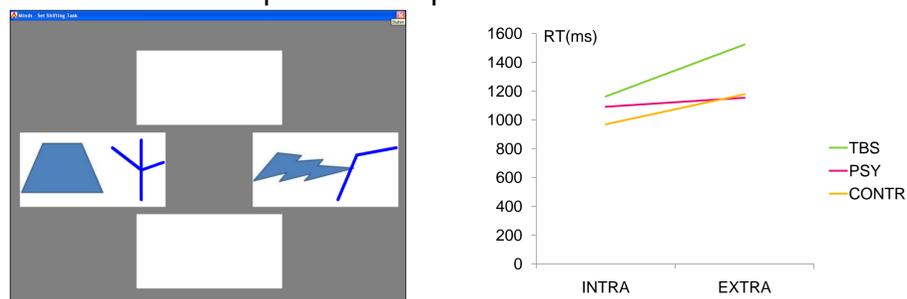
Test modules for the forensic psychiatric setting (forMinds*)

1. Stop-Signal task: This is a two-choice GO-NOGO task, supposed to measure inhibition control. The Go-stimulus requires a left or right hand response. On some trials shortly after the onset of the Go-stimulus a Stop signal is presented, requiring to restrain from responding.



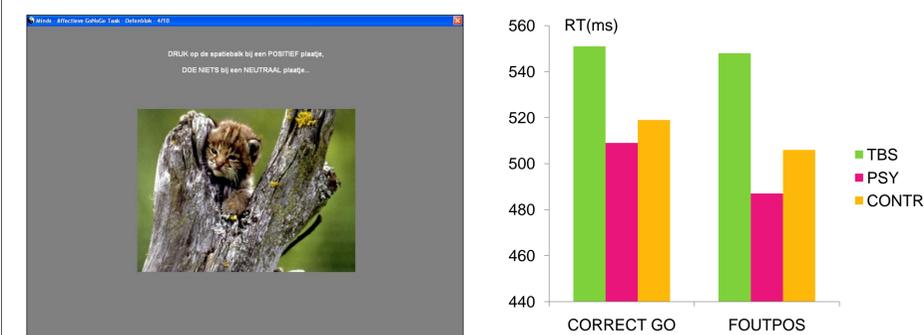
Results: TBS and PSY patients showed more errors than the controls, especially in the first trial block, and controlled for age and education.

3. Internal-External Dimension Learning Task: this task is intended to measure the ability to concept shifting. Based on feedback (correct / wrong) participants learn to choose between 2 stimuli that may consist of 2 dimensions: shape and line pattern.



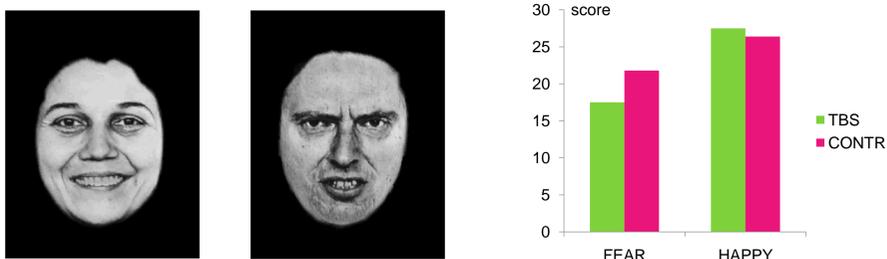
Results: TBS patients showed longer RT than both psychopaths and control subjects, especially in the extra-dimensional stage. However, after taking age and education into account, this was no longer significant.

2. Affective GO-NOGO task: participant is only required to react to stimuli with a predefined affective load and to restrain responses to other stimuli. There are 3 types of stimuli: positive and negative emotion, and neutral.



Results: TBS and PSY patients showed more errors than controls (not shown), but only TBS-patients had longer RT than the other groups, even if controlled for age and education.

4. Gradual Emotion Recognition Task: photographs of faces [3] are presented, portraying an emotion in a certain gradation. Task is to recognize the emotion, as quickly as possible and with the least possible errors. Six emotions are included (anger, fear, sadness, disgust, happiness and surprise), as well as neutral. Only TBS patients and controls participated in this task.



Results: TBS patients were hampered in recognizing fear, especially when expressed by male actors, and if the emotion was degraded by 30 %. However, age and education had some influence on the results.

Conclusions: These newly developed tasks, administered by the testmanager program Minds, can differentiate between forensic patients with and without psychopathy, but subject factors such as age and education may influence this sensitivity.

*) Other instruments in forMinds are: Continuous Performance Task, Trail Making Test, Stroop Color Word Task, Signal Detection Task, Reversal Shift Task, Moral Judgment Sorting Task, Emotional Stroop Task, Prisoner's Dilemma Game, and several questionnaires

References

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- [3] Ekman, P. & Friesen, W.V. (1976). Pictures of facial affect. Palo Alto, CA: Consulting Psychologists.