

Repetitive behavior is frequently displayed by those suffering various mental handicaps and is a commonly described symptom of autistic people. Examples of repetitive behavior are tapping against objects, waving of hands, and body rocking. However, little is known about the patterns of repetitive behavior.

The aims of our research program are (1) to give an objective description of patterns of repetitive behavior of autistic individuals, and then (2) to determine the functions of these different patterns in the behavioral repertoire of autistic individuals. It is thought that repetitive behavior occurs more during periods of low activity.

Our research subjects were a group of 26 autistic clients from Eemeroord, a center for the mentally handicapped. Thirty-minute video recordings were made for each subject in each of three situations during their normal daily routine: leisure time, a guided situation and a task situation. We thus collected approximately 40 h of video tape, to be coded with the Video Tape Analysis System. Our setup includes a Panasonic AG-7350 VCR (with RS-232 interface) and CAMERA time code generator/reader, video tape controller and character generator, and The Observer software.

| <b>Class</b>              | <b>Number of elements</b> |
|---------------------------|---------------------------|
| Facial expression         | 19                        |
| Position/movement of head | 24                        |
| Looking/looking at        | 11                        |
| Sound                     | 15                        |
| Gestures hand/arm         | 44                        |
| Gestures foot/leg         | 21                        |
| Posture/movement of body  | 15                        |
| Locomotion                | 19                        |
| total                     | 168                       |

For the first research objective, description of the patterns of repetitive behavior, we developed an ethogram consisting of 168 behavioral elements, contained in eight different classes (see table). Because we follow one person at a time and wish to quantify the sequential structure of the behavior as accurately as possible, we decided on focal sampling and continuous recording as the basic data collection method. The group of observers was trained until a mean reliability coefficient (Cohen kappa) of .70 was reached.

It soon became clear that in order to obtain a complete and detailed behavioral record of our subjects, we had to divide the observations into separate runs. Not surprisingly, no one could keep track of all 168 behavioral elements during a single coding session. The Video Tape Analysis System allows us to split each observation into synchronous - but independent - behavioral traces, which we code during successive passes of the tape. At the end we merge the data of the different runs into a single file. Thus one 30-min recording results in eight observational data files (.ODF), corresponding with the eight classes in our ethogram, and one TOTAL.ODF.

For the first evaluation we used the following data analysis options of The Observer:

- Elementary Statistics - to select behavioral elements with high frequency and/or long duration.

- Lag Sequential Analysis - to explore (first order) transition matrices. Behavioral elements which seem relevant for further analysis are selected.
- Exploratory Graphics - the occurrence and duration of selected behavioral elements are plotted against a time axis (see figure). Inspection shows some clear patterns of repetitive behavior.

For further and more detailed analysis the data will be exported to SPSS. After that we hope to draw the first conclusions of our research.

#### **REFERENCES**

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