

## Web material accompanying the paper ‘The Impact of Context on the Development of Aggressive Behavior in Special Elementary School Children’

On this website we present a number of (control) tests that were performed in our study.

### Tests of the effects of Psychiatric Diagnosis and IQ in Study 1 and 2

#### Study 1

We checked for possible differential effects of TRAffic due to the psychiatric diagnoses of the children (ADHD and PDD-nos). First, we determined the change scores of the children by subtracting the total aggression score after TRAffic from the total aggression score before TRAffic. By means of random permutation techniques, the difference between the observed change scores of children with ADHD, PDD-nos or a combination and the same scores of children with no diagnosis was compared with the distribution of change scores. The null hypothesis is that both groups (diagnosis versus no diagnosis) have similar change scores. The results are shown in Table 1. Both children with ADHD ( $M=-7,83$ ) and children with PDD-nos ( $M=-11,42$ ) did not differ significantly from children without a psychiatric diagnosis ( $M=1,52$ ) with respect to their change scores ( $p=0,48$  and  $0,43$  respectively). We did not further test the significance of the difference in change scores between children with a combination of ADHD and PDD-nos and children without a diagnosis, because the difference was negligible. To conclude, children with ADHD, PDD-nos or a combination of both did not profit more or less from TRAffic than children who do not have these psychiatric problems.

Table 1

*Change Scores of Children with ADHD, PDD-nos and no diagnosis, with p-values, Before - After*

		change of children without a psychiatric diagnosis (N=19)	p
change of children with a psychiatric diagnosis	ADHD (N=12)	-7,83 (17,82)	0,48
	PDD-nos (N = 8)	-11,42 (25,78)	0,43

By means of calculating correlations, we also tested for differential effects of TRAffic due to the IQ of the children. A high IQ might make children benefit more from TRAffic than children with a low IQ. The correlation between change scores (after – before TRAffic) for the whole intervention group and IQ was -0,11. For group-trained and individually trained children separately the correlation was -0,11 and -0,10 respectively. This means that there is no relation between IQ and change in aggressive behavior; a higher IQ is not accompanied by a higher reduction in aggressive behavior.

## Study 2

We tested whether the children who went to a regular school differed from the children who stayed in cluster 4 education with respect to their psychiatric diagnoses (by means of cross tabulations) and IQ (by means of random permutation testing). The children who went to a regular school did not seem to have less psychiatric diagnoses than the children who stayed in cluster 4 education (see Table 2).

Table 2

*Numbers and Expected Numbers of Children with ADHD, PDD-nos, a Combination and no Diagnosis within the Stayers, Changers and Regulars Groups*

			stayers	changers	regulars
diagnosis	ADHD	N	8	4	2
		exp N	8,2	3,3	3,4
	PDD-nos	N	6	2	3
		exp N	6,0	2,5	2,5
	combination	N	6	1	4
		exp N	6,0	2,5	2,5
	no diagnosis	N	10	6	4
		exp N	10,9	4,6	4,6

$$\chi^2 = 3,36, p=0,76$$

As to IQ, the random permutation test revealed that the Regulars ( $M=107$ ) had a significantly higher IQ than the Stayers ( $M=96, p=0,06$ ). The Stayers and the Changers did not differ significantly in their IQ. See Table 3 for the results.

Table 3

*Averages and Standard Deviations of the Stayers, Changers and Regulars, with p-values*

		stayers ( $N=32$ )	$p$
changers ( $N=13$ )	92 (15,48)		0,56
regulars ( $N=14$ )	107(14,25)	96 (15,13)	0,06

To conclude, the children who went to regular education had a higher IQ, but the same profile of psychiatric diagnoses as the children who stayed in cluster 4 education.

### Control tests Study 2

Before we started the analysis of Study 2 we conducted two control tests. One can imagine that the children who changed from a cluster 4 school to a regular school did so because their behavior improved during the cluster 4 school period. In order to exclude that possibility we tested: A) whether there was a difference in the trajectories of aggressive behavior between the Stayers on the one hand and the Regulars and the Changers on the other hand, by comparing their slopes before transition, and B) whether the children who changed school differed in their degree of aggressive behavior at baseline compared to the children who stayed in cluster 4 education. We justify the use of the slope as a statistical indicator of the trajectory on grounds of the fact that we had only few measurements (2 to 3) preceding the transition. With this number of measurements we must confine ourselves to describing linear regression models, which is characterized by a slope and an intercept. Instead of the intercept, we took the observed degree of aggressive behavior at baseline as an estimation of the child's initial level of aggression.

A.

For the Stayers we calculated the slopes based on all assessments, for the Regulars and the Changers we calculated the slopes based on the assessments before transition. The random permutation test showed that the average of the slopes of the total scores on aggressive behavior did not differ significantly ( $p=0,23$ ) between the Stayers ( $M=2,46$ ) and the

Regulars ( $M=-4,45$ ). This finding implies that the children who went to a regular school did not show a significantly different trajectory before they changed school compared to the children who stayed in the same cluster 4 education school, at least with respect to the average amount of decrease or increase in aggressive behaviors. The Changers ( $M=-4,38$ ) also did not differ significantly from the Stayers with respect to the slope before transition ( $p=0,13$ ).

B.

For each group we determined the average aggressive behavior score at T0 (baseline). It would have been more obvious to compare the aggressive behavior scores just before transition. However, because children change school at different time points (T3 or T4) it is difficult to determine which values of the Stayers to compare with. The random permutation test revealed no significant difference ( $p=0,06$ ) in aggressive behavior at T0 between the Stayers ( $M=72,42$ ) and the Regulars ( $M=54,98$ ). However, the result is close to significant, the Regulars obviously seemed somewhat less aggressive at baseline. The Changers ( $M=79,38$ ) did not differ significantly from the Stayers ( $p =0,47$ ).

It is important to note that, analytically speaking, these control tests are not necessary, because in our analysis we test whether there is a downward change after transition *relative* to the trajectory during the cluster 4 period, irrespective of whether this trajectory is itself upward, flat or downward. On the other hand, it is still important to know if, with respect to children who go to regular education, we have to do with children who show more improvement in behavior before their transition compared to children who stay in cluster 4 education. The results of the control tests show that this is not the case.